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Food Security in the European Union, Latin America and the Caribbean: The Cases of Cuba and Spain

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“About 795 million people are undernourished globally, down 167 million over the last decade, and 216 million less than in 1990-92. The decline is more pronounced in developing regions, despite significant population growth. In recent years, progress has been hindered by slower and less inclusive economic growth”

(translated from Spanish; FAO 2015:1).

Food sovereignty is the right of peoples to produce, exchange and consume food in accordance with practices defined by the values, knowledge, beliefs and rituals of their culture, being able to access healthy, nutritional food free from any obstacle or political, economic or military pressure.

Vía Campesina, 1996

(Supplement “Ya es tiempo de soberanía alimentaria (translated from Spanish; Now it is time for food sovereignty)”, Presentation)

EU-LAC FOUNDATION, SEPTEMBER 2017
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TEXT REVISION AND EDITING: EU-LAC Foundation
GRAPHIC DESIGN: Tina Jochemich, Jona Diedler
PRINT: Scharlau GmbH
DOI: 10.12858/0517EN

Note: This study was financed by the EU-LAC Foundation. The EU-LAC Foundation is funded by its member states and the European Union. The contents of this publication are the sole responsibility of the authors and can not be considered as the point of view of the EU-LAC Foundation, its member states or the European Union.

This book was published in September 2017.

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ACKNOWLEDGMENTS

The authors of this report are grateful to the EU-LAC Foundation, for their contribution to the production of the work we present here. In particular, to Dr Anna Barrera, for her excellent communication, responding to all our concerns and facilitating academic and professional links between the University of Salamanca (USAL), in Spain, and the Centre for World Economic Research (CIEM), in Cuba.

We also wish to thank USAL (the University of Salamanca) for all the logistical advice to get the research project off the ground, especially the Research Management Agency, the Office for the Transfer of Research Results and the Ibero-American Institute of USAL. The latter provided the essential facility for the necessary team-work during the initial stage of the research. For this, we are grateful for the support of its Director, Dr Mercedes García Montero, its Deputy Director, Dr Francisco Sánchez, and the administrative staff of this institution for their warm welcome and excellent cooperation.

Within the context of the production of this report the I International Seminar on Cuba Today was organised in May 2016 by the Latin American Faculty of Social Sciences (FLACSO) - Spain. We greatly appreciate the excellent debate between Cuban and Spanish experts on bringing the economic and social model of Cuba up to date. We particularly appreciated the analyses of Dr José Luis Rodríguez of CIEM. We are also grateful for the observations of Dr Peter Rosset, Guillermo Betancourt of INIE (National Institute of Economic Research), Dr Armando Nova of CEEC (Centre for Studies on the Cuban Economy), University of Havana and Dr Rafael Bonete, as well as the bibliography and sources they contributed. The project also enabled us to participate in the workshops and debates of the World Forum on Access to Land (WFAL) 2016, held in Valencia, Spain, from 31 March to 2 April 2016.

We cannot end without thanking all those who have contributed directly or indirectly to the production of this research project, especially our families for their patience and support.

LIST OF ACRONYMS AND ABBREVIATIONS

ACP	African, Caribbean and Pacific Group of States
ALBA	Bolivian Alliance for the Peoples of Our America
ANAP	National Association of Small Farmers, Cuba (Spanish acronym)
ARCo	Shared Responsibility Agriculture (Spanish acronym)
ASAP	Alliances for the People's Food Sovereignty (Spanish acronym)
ASEAN	Association of Southeast Asian Nations
AWU	Annual Work Unit
CAP	Common Agricultural Policy
CARICOM	Caribbean Community
CCSs	Credit and Service Cooperatives (Spanish acronym)
CDA	Cuban Democracy Act
CEEC	Centre for Studies on the Cuban Economy
CELAC	Community of Latin American and Caribbean States
CET	Common External Tariff
CIDA	Inter-American Committee for Agricultural Development (Spanish acronym)
CMOs	Common Market Organizations
COMECON	Council for Mutual Economic Assistance
CPAs	Agricultural Production Cooperatives (Spanish acronym)
DDT	Dichloro-Diphenyl-Trichloroethane
EAFRD	European Agricultural Fund for Rural Development
EAGF	European Agriculture Guarantee Fund
EAGGF	European Agricultural Guidance and Guarantee Fund
EAP	Economically Active Population
ECLAC	Economic Commission for Latin America and the Caribbean
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FEGA	Spanish Agricultural Guarantee Fund (Spanish acronym)

FDE	Food Drink Europe
FDI	Foreign Direct Investment
FNS	Food and Nutrition Security
FNINS	Food and Nutrition Insecurity
FTA	Free Trade Agreement
FTAA	Free Trade Area of the Americas
GDP	Gross Domestic Product
GMO-Free Zones	Zones free from Genetically Modified Organisms
GNI	Gross National Income
HA	Hectares
HFLACI	Hunger-Free Latin America and the Caribbean Initiative
IDA	Agrarian Development Institute (Spanish acronym)
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
INCA	National Institute of Agricultural Science
INDER	Institute of Rural Development of Costa Rica
INIE	National Economic Research Institute, Cuba
ISI	Import Substitution Industrialization
LAC	Latin America and the Caribbean
LAIA	Latin American Integration Association
MFF	Multiannual Financial Framework
MINAGRI	Ministry of Agriculture of Cuba
MST	Landless Rural Workers' Movement (Portuguese acronym)
NFRE	Non-Farm Rural Employment
NGO	Non-Governmental Organization
NTAEs	Non-Traditional Agricultural Exports
OJ	Official Journal of the European Union
ONEI	National Office for Statistics and Information of Cuba
R+D	Research and Development
REAF	Special Meeting on Family Farming (Spanish acronym)
SMEs	Small and Medium Enterprises
SPFS	Special Programme for Food Security
UAA	Usable Agricultural Area
UBPCs	Basic Units of Cooperative Production (Spanish acronym)
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
VAA	Value-Added Agriculture
WFAL	World Forum on Access to Land
WFP	World Food Programme
WTO	World Trade Organization

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EXECUTIVE SUMMARY

This study analyses the impact of agrarian and food policies on food and nutrition security as well as on the food sovereignty of Latin America and the Caribbean (LAC) and the European Union (EU) during the period 2007-2015, - two regions with different agrarian policies (protectionism versus trade liberalisation), which faced different problems in the context of the world food crisis of 2007-2008. The study is conducted over three chapters which range from the theoretical framework, the agricultural policies and production structure of both regions, to a comparative study of Cuba and Spain.

The first chapter introduces the theoretical framework necessary to analyse the various experiences of LAC and the EU. Among key concepts, this chapter defines food sovereignty, food and nutrition security as well as the differences and similarities between both concepts. The chapter also explores current trends in the global agri-food system as a basis for framing and defining the world food crisis and the growing importance of FNS and food sovereignty within national and regional programmes for economic development from 2007-2008.

Chapter 2 explains the macro dimension of the study, and agri-food policies, as well as the characterisation/structure of the agrarian sector in LAC and the EU. Both the macro dimension and the structure of the agrarian sector in both regions are considered as the independent variable of the study.

Chapter 3 examines the micro dimension of the analysis, that is, the dependent variable: the impacts of policies on FNS and food sovereignty in both regions. With the aim of comparing diversity, this chapter presents a comparative Cuba/Spain study of the various dimensions of FNS through the available FAO data, using its four dimensions: access, availability, use and stability. In order to understand food sovereignty the authors use a more qualitative analysis, pointing to examples or experiences closely related to sustainable family agriculture as beacons of development on which future programmes can focus within national agendas, understanding how and why they function and under what circumstances.

The final section presents the principal conclusions of the study and establishes recommendations for economic policy, in particular agrarian policy, within the scope of technocrats, civil servants, politicians and academics from both regions. When the time comes to draw up agrarian and rural development programmes and to detail the micro reality of small and medium producers, the recommendations for both EU and LAC member countries are described as below:

– To acquire an in-depth understanding of the problems of access and availability (including problems of distribution), together with those of use and stability in both regions. The importance of access to resources, mainly land (through redistributive agrarian reforms in LAC), credit, and the market in LAC compared with the problems of the concentration of distribution channels for agribusiness production in the EU.

– To consider the potential of family agriculture to feed the population (especially in less developed countries), the impact of food crises and how they affect the possibilities of producing food locally (both in developed and developing countries) and the potential of markets (national and international) to distribute resources all within the agrarian and rural development strategies of both regions. In this sense, the creation of incentives for small producers as mechanisms for insertion and diversification are desirable tools in both regions.

– Finally, the agrarian and rural programmes of both regions should promote and combine the promotion of exports and traditional production/basic grains for the internal market. In short, to determine the role of the State and of the market faced with the influence of multinational companies. Hence the importance of studying good practice under various different agrarian strategies as in the case of the EU and LAC and opening the way to future research and discussions on initiatives which are less dependent on imported food and input, within the framework of the right to food. Food sovereignty presents an inward-facing local development alternative, challenging the current pattern of international trade. However, this study shows the importance of combining programmes of local food production with the expansion of more lucrative non-traditional products on the international market.

INTRODUCTION

The right to food involves access to the necessary production resources and to healthy and sustainable food. However, currently, the fragility of the agri-food model works against achieving food security, given the concentration of power in the sector and, of course, the great dependence on large production and distribution channels. The food crisis of this millennium has caused a significant shift by governments in terms of monitoring food policies and supporting rural areas. In this sense, food security and sovereignty constitute necessities for governments from which social protection proposals emerge to challenge temporary famines and poverty, especially rural poverty. In fact, the causes of hunger lie in the inability to access food in a stable way.

In particular, food sovereignty, based on the right to food, stands out as a possibility of revitalising national public policies in family and rural agriculture and its contribution to national food production, increasing income and employment opportunities for small producers as well as opportunities for access to land, production resources and domestic markets.

This study poses as the principal question to be investigated: What has been the impact of agri-food policies on food and nutrition security in LAC and the EU, regions with different levels of development and agrarian strategies? The cases of Cuba and Spain are considered in particular, where self-sufficiency in food – at family, environmental and local level – becomes the principal priority for progress towards achieving food and nutrition security (FNS) and food sovereignty in both countries.

A series of theoretical reasons make this study interesting by bringing together two regions with different models of agrarian development. The conversation between different models of agrarian development and their contribution to FNS and national food sovereignty is one of the principal contributions of the analysis. From the theoretical point of view, the study provides one more step in the approach to the definitions of food security, FNS, and food sovereignty; an approach involving political and multidimensional concepts that favour dialogue and the exchange of ideas between social movements, and international and academic organisations. Moreover, there are empirical reasons which indicate the relevance of the analysis. In particular, Cuba represents an alternative rarely compared with other countries

and even less with countries in the EU. Finally, the study considers political reasons related to the importance of small producers in the development process, the promotion of growth with equity, environmental sustainability and above all, their contribution to national food security.

The study uses an essentially qualitative methodology in order to better understanding change processes and contrasting diversity, differences and similarities (Bryman 2004; Crotty 2004; Ragin 1994). Chapter 3 develops a comparative case study, Cuba and Spain, to focus on and contrast the results of various different food policies in the FNS of both countries. This comparative study attempts to provide a greater level of knowledge and in-depth understanding of a specific reality. Quantitative studies (for example, econometric) show the disparities between a much larger sample (than that of a comparative study) but they assume uniformity or generality when there is a large degree of diversity among the cases studied which must be examined in greater depth. Other elements and additional information for this study were collected through the authors' participation in the 8th CEISAL Congress, held in Salamanca from 28 June to 1 July 2016 and the World Forum on Access to Land (WFAL) held in Valencia from 31 March to 2 April 2016, Spain and the I International Seminar FLACSO, Spain.[1]

Spain and Cuba present great political and economic differences. However, both have strong social institutions, which enable them to fulfil many of the basic elements of food security, especially access and availability. Nevertheless, both countries present more difficulties in the area of FNS stability because they depend on imported cereals, and in the area of use because of the prevalence of obesity and overweight in their populations. From a more qualitative point of view, it is important to analyse food sovereignty to understand the level of capacity/autonomy in drawing up their agricultural and food policies and producing sufficient food for the national consumption of Spain and Cuba. The study explores the level of dependency on food imports of both countries and the evolution of policies and their considerable progress in substituting imported food and promoting food sovereignty. This is the case with eco-farming in Spain and urban and suburban agriculture in Cuba.

1 CEISAL 2016: 8th International Congress. Session 13.14: *Challenges of sustainable and inclusive development in Latin America in the post commodity consensus era,* Latin American Institute, University of Salamanca from 28 June to 1 July, 2016. FLACSO Spain 2016: "Cuba today". I International Seminar FLACSO Spain, *The Cuban economy: realities and challenges,* Dr José Luis Rodríguez García, Former Cuban Minister of Economy and Planning, Former Cuban Minister of Finances and Prices, Adviser to the Centre for Research into the Global Economy.Introduction and commentary from Dr Elisa Botella Rodríguez, Professor at the University of Salamanca and member of FLACSO Spain, 18 and 19 May, 2016, Salamanca, Spain. WFAL 2016: Participation in and attendance at workshops (especially Workshop 8 on international trade, autonomy and food sovereignty) and debates at the World Forum on Access to Land, WFAL 2016, held in Valencia from 31 March to 2 April, 2016, Spain (with the presence and participation of Elisa Botella).

The study is structured in three main sections. The first deals with the conceptual theoretical framework, and at the same time identifies the principal tendencies in the agri-food trade at a global level, which includes FNS and food sovereignty. The context of the world food crisis is highlighted as an essential element in understanding the impact of agri-food policies on food security and sovereignty.

The second chapter presents a description of the agriculture of both regions, emphasising its composition, the principal types of production and the agrarian and commercial structure, among other matters. Despite being such dissimilar regions, they are both seeing a loss in the importance of the agricultural sector in the economy, corresponding to world trends and urbanization processes. Analysis of the regional public policies in food and agriculture is also relevant. In LAC the impact of the food crisis of this millennium is addressed and the various policies put into practice to fight hunger. Similarly, the Common Agricultural Policy (CAP) is evaluated in terms of the benefits for European agriculture and its drawbacks; the reforms of this policy in line with world events, and its own internal limitations.

Food security and sovereignty in Cuba and Spain are examined in the third chapter, specifically for the period 2007-2015. The evaluation of some FNS indicators, against the FAO database, constitutes an innovative contribution of this study with important results for academics, civil servants and decision-makers. Some experiences of family, urban and eco-farming for both countries are also presented as approaches to food sovereignty.

The final section presents the principal conclusions of the study and draws up recommendations for economic policy - in particular agrarian and rural development policy. These constitute an important tool in designing and producing agrarian and rural development programmes in both regions, introducing us to the reality of small and medium producers, and highlighting both the problems of access and availability (including distribution problems) and those of use and stability.

Research sources used include semi-structured interviews and meetings with various groups of individuals to acquire value judgments and up-to-date information on the subject under investigation: a) Public civil servants, academics and researchers in various regions and institutions; and b) leaders of farmers' organisations and small producers. A wide review of relevant literature was also undertaken for each of the definitions and a review of macro-economic data, agricultural and population censuses and other economic and social indicators (ONE, MINAGRI, INIE and CEEC in Cuba; MAGRAMA and EUROSTAT in Spain), especially the FAO database on food security. Finally, complementary information and secondary sources were used.

The duration of the project was 9 months and it was divided into three major phases of work. The first (Cuba and Spain) was based on a review of literature and secondary sources, and the design of interviews with various groups of individuals and the drawing up of a period of investigation (2007-2015) in each of the countries and institutions the researchers came from (November 2015 - January 2016). During the second stage, the research team carried out joint work, in February - March 2016 (3 weeks), at the Latin American Institute of the University of Salamanca, Spain. Finally, the project went through the drafting stage (April - July 2016). In this last phase a process of triangulation was also put into practice, based on the combination of various research methods, essentially qualitative and quantitative and various types of sources and methods of analysis, as previously mentioned (Husein 2009; Thurmond 2001). The validity of the different sources was based on comparing semi-structured interviews and secondary sources with official data to obtain a clearer and more critical view.

Finally, the report points out the problems faced and the substantial challenges throughout the process of devising the study, doing the research and finally bringing it to publication. Some problems with the comparative study should be noted. For example, the meaning of causality with respect to the non-capitalist context of Cuba as well as the crisis of the 90s vis-à-vis the capitalist context of Spain. To what extent are the FNS results and the indicators of some of its elements the product of its economic and social model? The relationship between consumables and products in Socialist and capitalist countries is very different and must be noted. To determine the direction of causality in both cases, and therefore, the validity of the comparison, it was essential to carry out the process of triangulation based on organising the available data and proxy variables to link consumables and products in each of the two countries.

1. THEORETICAL FRAMEWORK AND GLOBAL TENDENCIES IN THE AGRI-FOOD SECTOR

1.1 Food and Nutrition Security (FNS)

1.1.1 Conceptual framework of FNS[2]

Food Security is a concept which has had over 200 definitions since it first appeared in the nineteen forties. It is a "flexible" concept that reflects complex technical and political interrelationships concerned with ensuring that the food provision of a country, region or household is sufficient to meet the food and nutritional needs of specific groups of people in an appropriate and sustainable way. The earliest definitions of Food Security were related to supply, ensuring the availability and price stability of food, firstly in each country and then on the international market. Food Security was therefore devised as a global political and economic tool, focused on the product and not the human being. However, following the food crises and famines generated in the mid-seventies, the behaviour of human groups and their physical and economic access to food were given more priority within the concept of food security (Morocho et al. 2008).

In 1996, during the World Food Summit of the United Nations Food and Agriculture Organization (FAO), it was proposed to complement the focus on the availability and accessibility of Food Security that was then in force with a focus on Nutrition, including aspects of practices, environments and considerations related to health. As a result, the more holistic and multidimensional concept of Nutrition Security was proposed: Food and Nutrition Security (FNS). The food dimension includes aspects of production, distribution, marketing, availability and sustainable access to food to meet the needs of various vulnerable groups. The nutritional aspect refers to the selection, preparation and consumption of food, which is adequate, nutritional, safe and culturally acceptable, in healthy environmental conditions guaranteeing it is used in a biologically efficient way. Food Security contributes to only one of the determining factors of the state of nutrition - the consumption of food, which is in

2 Written by Gueibys Kindelán Velasco.

turn determined by healthy practices and environments. Eating food is a conscious voluntary process, whereas nutrition is an unconscious involuntary process. Eating involves the selection, preparation and consumption of food, whereas nutrition involves digesting the food, and the absorption, metabolism, biological use and excretion of the nutrients (Vásquez de Velasco 2012).

In 2002 a group of FAO experts compiled an overview of the official definitions of FNS developed over the previous 40 years as presented in Table 1.1.

Table 1.1 Official definitions of Food Security

Year	Definitions
1974	"In the Minutes of the 1974 World Food Summit, Food Security is defined as: The availability at all times of sufficient world supplies of basic foods to support constant food consumption and to compensate for fluctuations in production and prices" (translation from Spanish, Vásquez de Velasco 2012: 8).
1983	"The FAO widened its concept to include a third element: Ensuring that all people, at all times, have physical and economic access to the basic foods they need" (translation from Spanish, Vásquez de Velasco 2012: 8).
1986	"The World Bank, in its report on Poverty and Hunger, developed the concept of Food Security as: Access for all people at all times to sufficient food to enable them to lead an active and healthy life" (translation from Spanish, Vásquez de Velasco 2012:8).
1996	"The 1996 World Food Summit adopted the following definition in its Action Plan: Food Security, at individual, family, national, regional and world level, is achieved when all people have at all times physical and economic access to sufficient safe and nutritious food to meet their food needs and preferences so that they can lead an active and healthy life" (translation from Spanish, Vásquez de Velasco 2012: 8).
2002	"In the publication on the State of Food Insecurity 2001, the FAO stated that: Food security is a situation that exists when all people have at all times physical, social and economic access to foods which are sufficiently plentiful, harmless and nutritional to meet their food requirements and preferences so that they can lead an active and healthy life" (translation from Spanish, Vásquez de Velasco 2012: 8).

Source: Compiled by authors based on Vásquez de Velasco 2012.

Bearing in mind the way the definition of food security evolved from the 60s, the concept proposed by the FAO in 1996 and 2001 incorporated more clearly a focus on Food and Nutrition Security. This is a wider (and multidimensional) definition, closer to people, capable of guaranteeing their food needs and taking into account the physical, social, economic and cultural setting. Both definitions have been associated with the four aspects of FNS, which will be described below.

1.1.2 Dimensions and indicators of FNS

FNS is based on four dimensions, of which three are physical in kind: physical availability, economic and physical access and the use made of food. The fourth is a time component indicating stability and involves adequate access to food at all times (FAO 2006; Vásquez de Velasco 2012). According to food security statistics from the FAO and Oenema (2001), the indicators to measure the four dimensions and the obstacles affecting them are those presented in Table 1.2.

Table 1.2 Dimensions and indicators of and obstacles to Food and Nutrition Security

	Concept	Indicators	Obstacles to FNS
Physical availability of food	The existence of sufficient quantities of food of adequate quality, supplied through the domestic production of the country or by imports (including food aid).	• Sufficiency of the average supply of food energy • Average value of food production • Proportion of the food energy supply derived from cereals, roots and tubers • Average supply of proteins • Average supply of proteins of animal origin	• Lack of access to resources (land and land potential, irrigation, tools, skills) • Insufficient production • Pre- and post-harvest losses • Inefficient functioning of the market
Economic and physical access to food	Access by the people to adequate resources (resources to which they have a right) to acquire appropriate and nutritious food. These rights are defined as the set of all groups of products over which a person has control according to the legal, political, economic and social agreements of the community in which they live (including traditional rights, such as access to collective resources).	• Percentage of paved roads over total number of roads • Road Density • Density of railway lines • Gross domestic product per capita (in equivalent purchase power) • National food price index • Prevalence of malnutrition • Proportion of expenditure on food by the poor • Intensity of food deficit • Prevalence of food insufficiency	• Low level of income • Long distance to markets • Poor infrastructure (markets, roads)

Table 1.2 Dimensions and indicators of and obstacles to Food and Nutrition Security

	Concept	Indicators	Obstacles to FNS
Use of food	Biological use of food through adequate food, drinking water, health and medical services, to achieve a state of nutritional well-being in which all physiological requirements are satisfied. This concept highlights the importance of non-food provision in food security.	• Improved access to sources of water • Access to improved sanitation services • Percentage of children under five who are emaciated • Percentage of children under five who suffer restricted growth • Percentage of children under five who are underweight • Percentage of adults who are underweight • Prevalence of anaemia among pregnant women • Prevalence of anaemia among children under five • Prevalence of vitamin A deficiency in the population • Prevalence of children between 6 and 12 suffering iodine deficiency	• Poor physical and mental health • Lack of personal and food hygiene • Poor water quality • Poor sanitation • Lack of health services • Insufficient levels of quality and harmlessness in food • Poor provision of services
Stability	To have food security, a population, household or individual must have access to adequate food at any time. They must not run the risk of being left without access to food because of sudden crises (e.g. an economic or climate crisis) or cyclical events (such as seasonal food insecurity). The concept of stability therefore refers as much to the aspect of availability as to that of access to food security.	• Proportion of dependence on cereal imports • Percentage of arable land provided with irrigation systems • Value of food imports within the total goods exported • Political stability and lack of violence or terrorism • Volatility of national food prices • Variability of food production per capita • Variability of the supply of food per capita	• Lack of diversity in production • Low income • Lack of diversification of income • Natural disasters • Economic or political crises

Source: Compiled by authors based on FAO 2006 and FAOSTAT 2016 and Oenema 2001.

In order for a country to have FNS it must fulfil the four dimensions simultaneously, otherwise it would be in a situation of food insecurity (FNINS). FNINS exists when

human beings experience hunger or undernourishment, malnutrition and extreme poverty caused by the lack of available and accessible food products, but also by poor use and lack of stability in terms of the availability of food and access to it (Taipe 2014).

These obstacles to FNS, together with others equally important such as those related to gender, have negative effects, directly or indirectly, on the nutritional state of people and are key to understanding the concept of food sovereignty addressed in the following section.[3]

1.2 Food sovereignty: origins and definition[4]

Food sovereignty is a political concept developed by La Vía Campesina and brought to public debate during the World Food Summit in 1996.[5] It was the principal theme of the NGO forum held alongside the FAO World Food Summit in June 2002. This section presents a theoretical approach to food security as a political focus that has arisen from below and with greater relevance in the least developed countries because of the asymmetries of international trade.

To understand the real significance as well as the origin of the concept of food sovereignty, we must discuss globalisation and the historical conflict between two economic, social and cultural development models in the rural world (Vía Campesina 2002, 2006): On the one hand, there is a dominant model, very productive in the short term, which according to its critics is showing clear signs of exhaustion and brings many additional social problems to the large rural majority in the least developed countries (Pretty 2002: 4). It is based on the principles of the Green Revolution incentivised by the new regionalism developed in Latin America from the mid-1990s (FTA-Mexico, Canada and the United States, FTA of the Americas).[6] This dominant model comes up against an alternative model based on sustainable agriculture and social capital which proposed a better use of natural resources and

3 Some of the problems affecting the access, availability, use and stability of food will also be addressed in point 1.4, trends in the international agri-food market.

4 Written by Elisa Botella.

5 Vía Campesina is the international movement born in 1993 which brings together millions of small farmers, small and medium producers, landless peoples, indigenous communities, migrants and farm workers from all over the world. It supports small-scale sustainable farming as a way of promoting social justice and dignity. It is strongly opposed to agri-businesses and multinationals. Vía Campesina brings together more than 164 local and national organisations in 73 countries in Africa, Asia, Europe and America and represents some 200 million farm workers. For more information: https://viacampesina.org/es/ (accessed 2 February 2017).
Interview with Dr Peter Rosset, 16 March 2016, and with Dr José María García Álvarez-Coque, 7 March 2016.

6 The Green Revolution of the nineteen sixties and seventies was based on scientific principles to modify the environment in such a way as to create conditions more suitable for agriculture and the raising of livestock than those offered by nature itself. It was based on improved varieties of rice and wheat and the use of external inputs guaranteeing good growing conditions to make the most of the genetic potential of the new varieties. The creation of favourable socio-economic environments, making the use of these inputs possible and creating markets for the sale of the products, made up an integral part of this change (FAO 1996).

services, and of the knowledge and skills of the farmers (Pretty 2002: 4).[7] As shown in Table 1.3 they are two models with objectives as different as maximising production against optimising it, where agriculture goes from being a business to a means of economic, social and environmental sustainability. They have opposing economic, social, environmental and technological characteristics that generate problems and opportunities for the different types of food producers in LAC (large producers vs. family farmers).

Table 1.3 Conventional model versus agri-ecological paradigm

Characteristics	Conventional model	Food Sovereignty paradigm
Principal objective	Maximising production	Optimising production
Significance of agriculture	A business	Sustainability: economic, social and environmental
	SOCIO-ECONOMIC IMPACT	
Externalities	Negative	Positive
Comparative advantage	Static	Dynamic
Dependence on chemical inputs (oil)	High	Low
Productivity of the land	Low /medium	High
Production (cultivated)	High	Low /medium
Stability of production	High	Low /medium
Space for the local market	Low or none	High
Autonomy	Low	High
Quality of food	Very low	Healthy
Access to land	Limited and concentrated in large-scale monoculture farms	High: small family farming
Examples	trans-national businesses Trans-national businesses exporting genetically modified maize	MST in Brazil
	ENVIRONMENTAL IMPACT	
Sustainability	Low	High
Diversity	Low	Medium/high
Recovery	Low	Medium
Human displacement of the environmental process	High	Medium/low

7 Some examples can be found in the case of sustainable farming in Cuba or the Landless Rural Workers' Movement (MST) in Brazil, based on agri-ecology and family farming. MST (in Portuguese, *Movimento dos Trabalhadores Rurais Sem Terra),* is a Brazilian socio-political movement inspired by Marxism which fights for agrarian reform and social justice. It began in opposition to the model of agrarian reform imposed by the military regime of the 1970s. In contrast to this model, MST essentially seeks to redistribute unproductive land. It is one of the largest social movements in Latin America, organised over 24 states of the five regions of the country with almost 350 thousand families signed up. More information available at http://www.mst.org.br/ (accessed 2 February 2017).

Table 1.3 Conventional model versus agri-ecological paradigm

Characteristics	Conventional model	Food Sovereignty paradigm
	TECHNOLOGICAL IMPACT	
Generation of technology	Top-down, imported	Participative and local; focus on the farmer
Research design	Conventional Agronomy	Participative research
Dependence on external human inputs	High	Medium

Sources: Rosset 2005 and Gliessman 2001, 2006.

Bearing in mind this conflict of models, authors like Hellinger et al. (2001), Lappé et al. (1998) and Rosset (2006) criticise the opportunities generated by the dominant policies in the agricultural sector, rejecting the benefits of international trade as currently structured. For these authors, neo-liberal style patterns of agrarian development have deepened global and local asymmetries in Latin American agriculture from the beginning of the 1990s (Altieri 2008; Holt-Gimenez 2006; Pretty 2002; Rosset 2005). They propose an alternative focus based on developing sustainable opportunities as a viable long-term strategy for small producers.

The early decades of the twenty-first century have seen a global trend towards recognising the requirement for more strategies for domestic development (Bebbington 2004; Giarracca 2001; González 2004; IFAD 2011; Pretty 2002). More radical proposals demand the redesign of the rural economy by applying an autonomous development model (Barkin 2001; Teubal 2001). Alternatives vary between regions and countries, but the majority originate in the organic beginnings of traditional agriculture, which did not depend on agrochemicals and was capable of developing polyculture to produce food for the domestic market (Denevan 1995; Holt-Gimenez 2006). These traditional systems have sustained world food security over centuries, preserving organic integrity through the application of rural knowledge (Holt-Gimenez 1996, 2001, 2006). Examples of traditional agriculture that has existed for 4,000 years can still be found in the Andes, Mesoamerica, Southeast Asia and parts of Africa, demonstrating the success of indigenous experiences in terms of adaptability and endurance (Funes-Monzote 2008; Holt-Gimenez 2001; Wilken 1987). Sharing rural knowledge and information, small producers work in organised networks of 'farmer to farmer' exchanges, transforming simple collections of sustainable techniques into complex styles of agro-ecological production (ANAP 2008; Holt-Gimenez 2006; Perera 2004). These networks form the Movimiento de Campesino a Campesino (Farmer to Farmer Movement; MCAC). [8]

8 The MCAC has tried to improve the lives of small farmers and of rural environments over more than thirty years, through the development of sustainable farming managed by farmers (Holt-Gimenez 2006).

All these strategies attempt to revitalise rural agriculture and increase its contribution to national food production. Within this framework food sovereignty emerges as a proposal from the bottom up, i.e., arising from civil society and promoted by the NGO La Vía Campesina at the World Food Summit in 1996 (Rosset 2005; Via Campesina 2002).

1.2.1 Importance, problems and indicators of food sovereignty

The importance of food sovereignty lies in revitalising family and rural farming as well as in its contribution to national food production with technologies which depend very little on external input, machinery and imported technology, and its ability to substitute imported foods and to improve access to land and domestic markets. In addition it attempts to increase opportunities of income and employment for small producers through decentralisation, redistributive agrarian reform programmes, access to domestic markets and the creation of local spaces where family farmers can sell their produce and buy other basic goods in local businesses and villages. Studies developed since the original work of Goldschmidt (1978) confirm these current trends (Rosset 2011; Vía Campesina 2002).

The problem is that most strategies used to approach food sovereignty remain local experiences or have been forced into being by external shocks or crises, such as the 'Special Period in Time of Peace' in Cuba or the world food crisis. The main literature (see for example Birdsall et al. 2008; Birthal et al. 2005; Murray 2002; World Bank 2003, 2008) could argue that these alternatives can cause problems for small producers within a more global and long term framework, reducing their opportunities for insertion into Non-Traditional Agricultural Exports (NTAEs) and Non-Farm Rural Employment, NFRE. Farmers could be caught in systems of low productivity and inefficiency because of a lack of comparative advantages and new technologies which are indeed available to producers integrated into the international market.

Indeed, one of the essential problems with food sovereignty is the lack of in-depth analysis of the international dimension of agrarian trade. NGOs like La Vía Campesina are not against exchanges, but they do question the prioritising of models based on exports. They point out the importance of providing these exchanges with a new framework of public help and international agreements where local and regional production is prioritised over export (for example, fair trade) (IFAD 2006; Madeley 2002; Third World Network & IFAD 2006; Vía Campesina 2002).

The final problem implied by food sovereignty is how to measure it. Measuring this

political concept would involve finding proxy (indirect) variables to understand the role of small producers in national food production, and provide data on the structure of the land in different countries, the percentage of this production in the hands of small producers and the dependence on food imports, in order to understand the food sovereignty of a country.

Food sovereignty is therefore a political concept with a multidimensional objective which includes various qualitative and quantitative aspects. Ortega-Cerdá and Rivera-Ferre (2010) produced an in-depth revision of the 350 groups of existing indicators used by international organisations in various areas of development. After a reflective analysis of the concept of Food Sovereignty, five categories of indicators and their respective subcategories were established.[9] For category 1 of access to resources there are some indicators for many of the subcategories (access to land, access to animals, irrigation, water, fertilisers, etc.). There is almost no information on access to credit and other financial services for the small and medium farmer, the distribution of forest and marine resources and access to seeds. In the categories of models of production (category 2) and processing and marketing (category 3) there is a lack of consistent, accurate information on essential aspects of Food Sovereignty. Data is limited on the level of business concentration in the food chain, the prioritization of marketing in the local and regional markets, agro-ecological production and the energy dependency of the current agricultural system, and the sustainability of fishing catches. In category 4 of food security and consumption there is sufficient available information thanks to the FAO Statistics on Food Security. However, hardly any information exists on how appropriate the food is for the cultural characteristics of the place where it is produced. Finally in category 5 of agrarian policies, clear insufficiencies were detected in the area of farmers' participation in decision-making, the ability to organise in the field of agriculture and some aspects related to human rights and rural migrations, - all fundamental elements for food sovereignty (Ortega-Cerdá and Rivera-Ferre 2010).[10]

1.3 FNS and food sovereignty: similarities and differences[11]

During the 32nd FAO Conference on Latin America and the Caribbean, held in Buenos Aires in March 2012, one of the matters on the agenda was the organisation of a wide-ranging and dynamic debate, involving both civil society and academia, to analyse the concept of food sovereignty. Its significance had not been agreed by the Member States of the FAO and the United Nations system (FAO 2012). Gordillo

9 Interview with Peter Rosset, 16 March 2016.

10 This report will essentially use the FAO indicators of food security to present the impact of agri-food policies on the food security and sovereignty of Spain and Cuba, attempting to complete the aspects of FNS with the proxy/indirect variables which can lead us to food sovereignty in these two countries in chapter 3.

11 Written by Elisa Botella.

and Méndez (2013) drew up a document containing the principal reflections of this debate, pointing to the food crisis of 2008 as the starting point which called the attention of governments to food policies and supporting the rural sector. Table 1.4 relates the definitions, differences and similarities between both concepts (FAO 2012).

Table 1.4 Concepts of FNS and of Food Sovereignty

Food and Nutrition Security (FNS) (FAO)	Food sovereignty according to Vía Campesina's definition
• Multidimensional definition, FNS • A political, social and economic environment which is peaceful, stable and favourable • Democracy, the promotion and protection of all human rights and basic freedoms • Full and equal participation by men and women	The concept of FS was broadened to food sovereignty with 6 pillars: 1. Food for the peoples 2. Food suppliers 3. Localising food systems 4. Control at local level 5. Traditional knowledge and skills 6. Compatible with nature Greater emphasis on Least Developed Countries (LDC)
Neutral concept: non-political.	Political concept: focussing on the asymmetries of the international market.
Does not pre-judge the concentration of economic power.	Equalising role in the democratic State.
Inter-governmental and multilateral organisation: does not take any one position in respect of ways of producing food.	
Support for family farming in national food production	Food production based on sustainable family farming.

Sources: FAO 1996, 2006, 2012; Food Secure Canada 2012.

FNS is a neutral concept which does not pre-judge the concentration or design of the international market but tries to promote better farming practices which can co-exist in order to feed the population. Although the concept of food sovereignty does not contradict this, it is not an alternative to food security either. Bearing in mind the asymmetries of international trade and commercial negotiations, food sovereignty as a political concept goes beyond the concept of FNS within the modern state and its ability to draw up food policies. However, its other component, based on recovering the more sustainable abilities of small producers of food for national consumption, is much closer to FNS, as far as the framing of public policies is concerned. In this sense, Gordillo and Méndez (2013) point to the need for a new line of debate to frame and express both concepts under the right to food.

1.4 Current trends in the world agri-food system[12]

Food production has undergone a long process of transformation given its gradual integration into the industrial organisation of the production, distribution and consumption of food. The production and consumption of food have been decoupled from agriculture and the environment in which it was practised, and become part of a complex system used to resolve the questions of what, how and for whom food is produced, distributed and consumed (Delgado 2010).

This section outlines the structure and main trends characterising the global agri-food market, as a central element in the understanding of the impact of agri-food policies on food security and food sovereignty to be presented in subsequent chapters.

Transnationalisation of the sector and financing for food

Since 1980 a restructuring process of control and business ownership within the world agri-food system has been taking place. The ten businesses with most assets in the four links of the chain (agriculture, agrarian inputs, food and drinks and distribution) hold 52.7% of these assets outside their country of origin. In the case of food and drink the figure is as high as 68.6%. As one recent case of an acquisition, formalized in 2009, we can quote the purchase by Wal-Mart of D&S, the biggest food distributor in Chile, paying 1,500 million dollars for 58.2% of its shares (UNCTAD 2009).

Along with globalization there is a qualitative change in the organisational structures of the sector because of the size of the capital involved (Burch y Lawrence 2009); this capital both enables agri-food corporations to consolidate, expand and reorganize, and also harmonises the way the sector functions with "rationalization" criteria devised under the imperative of financial "value creation" (Delgado 2010). Large transnational companies have replaced local markets and food production systems. They promote and administer the various links in the globalized agri-food chain (Hefferman 1994; Kneen 1999; Lyson and Lewis 2000).

Today, only ten corporations control approximately half the global market in seeds. For example, the Monsanto consortium controls 90% of the market in soybeans.[13]

Lack of support for small producers from 1980-1990 has increased this trend towards control by transnational companies. Low levels of support together with institutional reforms have often led to the weakening of the main institutions responsible for

12 Written by Jourdy Victoria James and Elisa Botella.
13 An interesting source on this subject is: www.grain.org (accessed 2 February 2017).

devising and providing basic public services to farmers, such as technology, training, health control, irrigation systems and subsidies for small producers of traditional products (Rosset 2006; Conroy et al. 1996; González 2004). The private sector has taken on these responsibilities; concentrating services in the more developed regions and in commercial agriculture, and ignoring the requirements of traditional agriculture for basic seeds and other products essential to domestic markets (Piñeiro 2005).

Today, companies such as Monsanto, Cargill, Nestlé and Wal-Mart control the food distribution chain from seed to supermarket shelves in the least developed countries (Rosset 2006). Nestlé alone – which does not produce milk – controlled approximately 5% of the world milk market in 2009, with annual sales amounting to of 26,000 million dollars.[14] In Brazil, four companies controlled 75% of the national market in hybrid maize and another four controlled 75% of the coffee market (Farina 2002). In Colombia four companies produced 94% of the market in potatoes, cassava and bananas (Berdegué and Fuentealba 2011; IFAD 2011). In Argentina and Brazil, the supermarkets controlled between 60% and 70% of food sales, whereas Wal-Mart controlled over 81% of the total food sales in Costa Rica (Heffernan 1999; Reardon and Berdegué 2002).

In Spain, five large chains of companies controlled around 56% of the total food sales of the country. These are: Carrefour (23.7%), Mercadona (16%), Eroski (7.4%), Alcampo (6.1%) and El Corte Inglés (2.3%) (Patel 2008; De Sebastián 2009). Similarly, in Sweden and Denmark three large supermarkets controlled approximately 95% and 64% of market share respectively; while in Belgium, Austria and France a small number of companies dominated over 50% (García and Rivera 2007).

The restructuring seen in the agri-food system since the 1980s is closely linked to the predominance of the financial sphere in the economy. Through finance, operations to acquire and/or control companies within the agri-food system have increased. For agriculture, food and drink, and distribution, the world inflows of Foreign Direct Investment (FDI) rose from 7.8 billion dollars annually in 1989-1991 to 43.8 billion dollars in 2005-2007 (UNCTAD 2009). This growth, since 2003, has been influenced by the major surge in the acquisition of land in developing countries, by agri-food companies or European or American investment funds. According to Rosset and Martínez-Torres (2013) corporate interests associated with mega-projects such as dams, open-cast mines and monoculture plantations, helped by policies to attract FDI and the promotion of Free Trade Agreements (FTA), have led to the growing problem of land grabbing in Latin America (Brazil, Chile, Ecuador, Costa Rica, Honduras, Peru), Africa (Tanzania, Madagascar, Mozambique, Kenya, Zambia), and

14 Ibidem.

Asia (Cambodia, China, Indonesia, Vietnam) (Bebbington 2007; Emanuelli et al. 2009, 2007; Ferradas 2000; GRAIN 2009, Hall 2011; Holt-Giménez 2007; Rosset, 2011; World Commission on Dams 2000; Zoomers 2010).[15]

Technological innovation and genetically modified organisms

New technologies have encouraged the division of labour and fragmentation, decentralisation and making functions more flexible within the agri-food system, and at the same time they have extended the ability to organise and coordinate. In saturated markets, an increased level of processing or a lengthening of the food chain, incorporating characteristics and services that enhance the possibilities of adding value, becomes an essential element to preserve or increase market share. Constant innovation becomes a basic requirement of expansion, especially in specific niche markets such as dairy, drinks, pre-cooked or canned food.

In the move towards more complex and sophisticated products, research and technological development play an essential role. This is a matter of automated production processes directed at improved conservation or using non-traditional raw materials and alternative uses, and other forms of innovation which reinforce market structures and conditions of competition. In this context, biotechnology has imposed a qualitative change on the agri-food sector with the production of genetically modified organisms (GMO) (Delapierre 1996).

Within most often highlighted costs of the GMO business, the one which stands out is the appropriation by multinationals in the sector of biological and cultural heritage essentially located in the countries of the South (Rifkin 1999). In this context, biopiracy was defined as the plundering of nature causing a deterioration in the right of rural farmers to maintain indigenous seeds and biodiversity, which eliminates sustainable practices that manage the local food supply (Shiva 1997).

Moreover, genetically modified crops (maize, soya, cotton and rapeseed) are used for feeding cattle in developed countries or for producing agro-fuels. This phenomenon means that these monocultures take up the agrarian space and resources that were dedicated to local food supply (Riechmann 2004). With yields tending to be compared with those of crops not genetically altered, GM crops involve greater use of agricultural chemicals, increasing the harmful effects on soil fertility, water quality and the agricultural environment in general (Carpintero 2006).

15 Land grabbing has begun to attract international attention. It is not a new phenomenon but its extent and rate of growth are unprecedented. In 2012 it was calculated that at least 227 million hectares had changed hands in recent years, especially in sub-Saharan Africa, an agrarian counter-reform of huge proportions (White et al. 2012).

Whereas 91% of the 1,500 million hectares of cultivated land are dedicated to agro-exports, biofuels and GM soya (to feed cattle and as fuel for cars), 10-15 % of the 960 million hectares of cultivated land (arable and permanent cultivation) in Africa, Asia and LAC are run by small producers who produce around 40-60% of the total food available for national consumption (Altieri 2008; Botella-Rodriguez 2012: 37; Hazell et al. 2007; IFAD 2011).

The double standards of international trade

Structural adjustment programmes implemented in LAC as a solution in the fight against inflation and external debt after the Lost Decade of the 80s, the growing emphasis on Free Trade Agreements within the framework of the WTO, greater attraction of FDI and the promotion of exports have institutionalised 'one single approach for all' based on static comparative advantages (Rosset 2009, 2006). Internally, these practices have involved dismantling internal support for traditional sectors and basic grains in developing countries. This approach has created a fundamental and unilateral imbalance between developed and developing countries: protectionism in developed countries versus liberalisation in developing countries (FAO 2003b; Rosset 2009, 2006). Rosset (2006), Third World Network and IFAD (2006) argue that this double standard has three negative consequences for family producers in developing countries. In the first place, small producers lose their export and income opportunities because their access to subsidised markets in western countries is blocked. Data for 2003 from IFPRI shows how the subsidies and protectionism of the developed countries supplanted some 40,000 million dollars of the net annual agrarian exports of developing countries (IFPRI 2003). In the second place, small producers in developing countries lose their export opportunities to third markets as these protectionist countries are also exporting to these markets at artificially low prices. While the United States and the EU were applying a zero tariff to imports of cocoa beans in 2003-2004, their tariffs went up to 30.6% on processed cocoa products such as chocolate cocoa paste. As a result, developing countries produce 90% of all cocoa beans but only represent 5% of world chocolate production (Guadagni and Kaufmann 2004; OECD 2003). Most cocoa exports are still cocoa beans (reaching 3 million tonnes in 2010). Importing countries still benefit from processing the cocoa in terms of added value despite the fact that the cocoa-producing countries have tried to add value to their cocoa exports on a small scale (FAO 2004b).[16]

16 By means of grants some African countries have increased their processing ability at a local level. However, the majority of producer countries have not been able to increase added value to their exports, mainly due to the high level of vertical integration of multinational companies in the cocoa and chocolate industry, essentially located in the importing countries. The producer countries lack effective and sophisticated technical knowledge in the area of marketing, which prevents them from increasing the added value of their exports and improving their low income (FAO 2004b).
More up-to-date data is available on the production, export and consumption of cocoa at http://www.europarl.europa.eu/pdf/cocoa/cocoa_exp_in_es.pdf (accessed 20 February 2017)

In the third place, small farmers are losing their share of the domestic market and even their livelihoods, because of the increased influx of cheap, subsidised imports onto their markets (IFAD 2006; Madeley 2002; Third World Network and IFAD 2006). This was the case in Mexico, where imports of subsidised maize forced some 700,000-800,000 rural households to give up farming. In 2006 one quarter of the maize consumed within Mexico was imported from the United States, and the economically active population employed in farming in Mexico fell by 15% (García Rañó et al. 2007; IFAD 2006; Rosset 2006).

1.5 The global food crisis (2001-2008): causes and characteristics[17]

Among the various crises that arose in the early years of the twenty-first century, the global food crisis burst onto the world stage, divided into two sub-periods. The first sub-period (2001-2008), saw a rise in the general food price index[18] and global causes; the second sub-period (2008-2015) was characterised by the volatility of this index. Both had a clear impact on LAC and the EU and led to the drawing up and implementing of public policies in food and agriculture to promote FNS in both regions. The latter period, 2008-2015 is the subject of investigation in this study.

The rapid rise in the price of basic products began in 2002 and in February 2011 the price index reached the highest levels seen since the world economic crisis of the 70s, 238 points (FAO 2011). The trend for food prices to increase accelerated in 2008, with the international prices of wheat and maize doubling in two years and rice prices tripling in just a few months (IFPRI 2011). Wheat prices rose 181% in the 36 months prior to February 2008, and world food prices rose 83% during the same period (Mitchel 2008; World Bank 2009). From September 2008 to August 2009 the prices of basic products went down by 10.25%. But from the second quarter of 2009, prices saw an upturn known as “green shoots”, signalling economic recovery after the global financial crisis and maintaining this upward trend until 2010. Nevertheless, from the second half of that year prices began to fall, and the price index recorded an annual average of 228 points (see Graph 1.1) (FAO 2011).

The rapid rise in prices of basic grains caused concern throughout the world about the impact of this on the poor, who spend at least half their budget on buying food

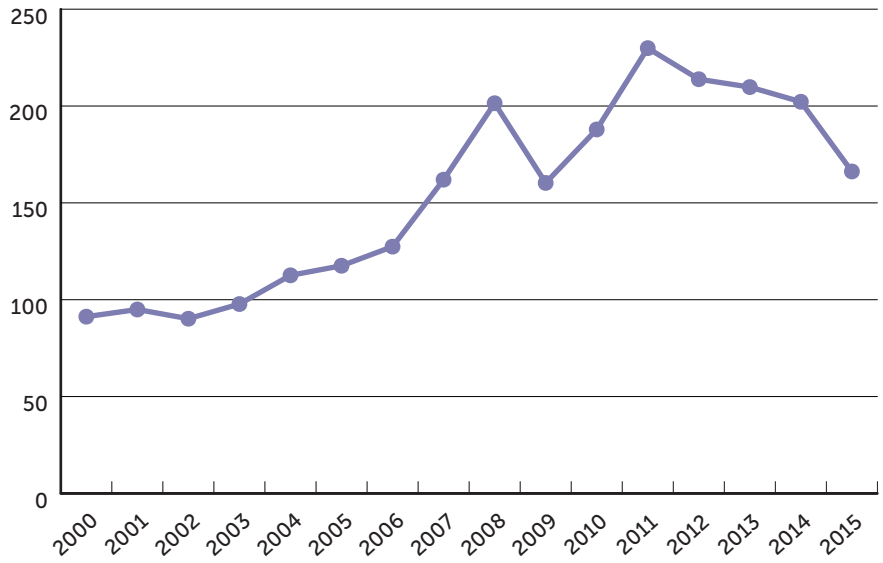
17 Written by Gueibys Kindelán.

18 The FAO food price index measures the monthly variation in international prices for a basket of food products. It is the average of the price indexes of five groups of basic products (vegetable oils, sugar, meat products, cereals and dairy products), weighted with the average export shares of each of the groups (FAO 2016, archived at http://www.fao.org/worldfoodsituation/foodpricesindex/es/; accessed: 2 February 2017).

(the well-known Engel's Law). If households living in poverty[19] do not obtain sufficient income from the sale or production of food, and if food prices double, the poor would lose around 25 % of their real income (World Bank 2009).

From 2012, fear of a new food crisis appeared, that is, that prices might rise higher than the previously recorded maximum of 228 points. One of the main reasons was the climate during the summer of 2012; the United States had the worst harvest in over half a decade and there was a dry climate in other exporting countries. But thanks to the decline in the international prices of dairy products, sugar and oils, the index averaged 212 points, 7% below that recorded in 2011 (FAO 2012). This downward trend was maintained during 2013 and 2014, as the index showed an average of 164.1 points, almost 19% less than in 2014, essentially because of abundant supply in the context of weak global demand and the appreciation of the US dollar (FAO 2016) (see Figure 1.1).

Figure 1.1 Food price index (points)



Source: Compiled by authors from FAO data 2016.

19 Here we are referring to small rural farmers as consumers and, in principle, also as producers, who have fewer and fewer opportunities to produce and who end up selling their small plots of land to multinationals or large national companies. Even if they could in theory benefit from the increase in prices, because of their precarious subsistence production or because they abandon farming, they end up failing to benefit from this development.

The global food crisis which began in 2001 was different in nature from previous crises, being global and multifactorial. It was global because what happened in some countries had an effect on others, also because of globalisation and the interdependence of the global economy. Also it was multifactorial because the crisis could not be explained by one single factor. This was a crisis caused by combinations of structural factors (Kindelán 2013).

Among the combined factors we can point to mismatches between a growing demand for food from emerging economies and developed countries and a limited supply because of restrictions on production and droughts in cereal-exporting countries, decreasing world cereal reserves and favouring price increases (Cavero 2010). To this was added biofuel and oil policies, especially the 2005 Energy Policy Act in the United States with provisions to promote the production and use of biofuels. The correlation between the price of maize and that of oil between August 2005 and July 2008 went up to 86% (FAO 2009). Speculative financial movements in the housing and financial sectors contributed even further to raising prices and to their volatility.
Finally, among the structural factors, agricultural policies stand out, relegated to second place by an economic model centred on trade liberalisation and attracting direct foreign investment into the services, technology, agribusiness and NTAE sectors, together with a decrease in investment and the progressive withdrawal of state support in the primary sector. Within this context, social protection programmes (although in many cases merely involving aid), including job creation projects and social security programmes, improved the resistance of poor people faced with price disparities (Cavero 2010).

2. PUBLIC POLICIES ON AGRICULTURE AND FOOD IN LATIN AMERICA AND THE CARIBBEAN AND IN THE EUROPEAN UNION IN THE GLOBAL ERA (1990-2015)

2.1 Agriculture in LAC

2.1.1 Agriculture and development models: a brief historical review[20]

Since the end of the nineteenth century, agriculture became the principal driver of economic growth in LAC. Factor endowment (labour, land and capital), comparative advantages and production chains are key elements in understanding the role of the region as an exporter of raw materials and minerals to industrialised countries. As Bulmer-Thomas (1995) points out, in the last quarter of the nineteenth century and the beginning of the twentieth, the situation was characterised by an expansion in exports from LAC based on technological innovation linked to the transport revolution; an increase in demand for food and raw materials from developed countries; large-scale emigration at the end of the nineteenth century from Europe to Brazil, the British colonies, Argentina and the Caribbean; and foreign investment in the railway system. Despite great regional diversity, until the 1920s the exporter model was predominant in the majority of countries. There was considerable modernisation of institutions in the region despite distinctive national features, especially in larger countries such as Argentina and Brazil. But internal limitations such as income inequalities and new types of external dependence restricted opportunities for real economic and political change (Thorp 1998).

Three external shocks eventually led LAC to a new model: the First World War, the Great Depression of the 30s and the Second World War. The new model was driven by theoretical arguments in favour of Import Substitution Industrialization (ISI), structuralism and other justifications in favour of industrialisation. Structural

20 Written by Elisa Botella.

economists, including Raúl Prebisch, and the Economic Commission for Latin America and the Caribbean (ECLAC), pointed to the advantages of industrialisation through learning by doing, spillovers and increased benefits. Although industrialisation was seen as beneficial, protection became a necessary instrument. Almost all recently developed countries adopted some type of protection by tariff when they found themselves lagging behind (argument for young industries by List, 1841), but this was neither the only element nor necessarily the most important one (Chang 2002).

In essence, ISI involved a set of policies centred on the State to promote and expand markets and domestic investment. Their results led to the most rapid period of growth in the history of LAC, despite the high level of debt and dependence on income from traditional exports to maintain the model, especially in the smallest economies and those traditionally most dependent on various traditional exports (the Central American case). The most common problems were dualism (urban-rural divide) and the limited development of the agricultural sector. The cost of urban industrialisation and agrarian investment being relegated to second place in state-directed industrial development left agricultural prices very low for the producer, de-incentivising production, stimulating rural-urban exodus and sometimes leading to slow growth in primary exports, in some countries reaching stagnation. In Argentina, Brazil and Mexico, development promoted by the State was able to strengthen the economic infrastructure and create public companies, besides contributing to a major institutional evolution that supported growth (Thorp 1998). However, the impact of the two oil crises and the high levels of debt and inflation at the beginning of the 80s ended with ISI in the region.

From the 80s, during the so-called 'Lost Decade', Agriculture of Change[21] attempted once again to promote 'development looking outwards', but now based on the restructuring of production, the dismantling of the production of basic grains and the promotion of non-traditional agricultural exports, NTAEs, (such as pineapple, tropical fruits, ornamental plants, palm oil, among other similar crops), which were much more lucrative on the international market. In the 90s, under the so-called 'Washington Consensus', agricultural policies in many LAC countries were pushed into the background. Incentives for non-traditional agricultural exports were extended, as were programmes to restructure production. This was the predominant model until the global food crisis of 2007-2008.

21 A term coined by International Organisations and Central American governments to promote non-traditional agricultural exports. The United States Agency for International Development (USAID) financed much of this change through various publicity and investment campaigns.

2.1.2 Characterisation and structure of the agricultural sector in LAC[22]

The importance of agriculture in LAC, measured as its contribution to the Gross Domestic Product (GDP), has been reducing since the decade of the 80s, in line with global trends. Nevertheless, the rate of annual growth in agriculture in the region is higher than the global rate, as it was 2.9% in 2012-2014 as against a global figure of 2.6% (ECLAC 2015). This was mainly due to increased productivity. In 2014 agricultural activity represented 4.6% of GDP of the region; 2.6% in the Caribbean and 4.7% in the other Latin American countries. The contribution of the agricultural sector to the GDP of the various countries in the region is very segmented and has been decreasing in recent years.

With respect to the growth rate of the sector, in 2014 the Caribbean grew by 3.9%, whereas Latin America only saw growth of 1.8%, this figure coinciding with the general average for the region (ECLAC 2015). In Nicaragua and Paraguay agriculture contributed 20% and 21% to GDP, compared with Barbados and Trinidad and Tobago where it was no higher than 2% of their respective GDPs. These are very small countries with certain energy resources – natural gas and oil, respectively. The larger economies, Brazil, Mexico and Argentina, share a concentration of over 60% of the region's agriculture, with individual contributions of 33%, 18% and 11%, respectively (FAO 2014c).

Value Added Agriculture (VAA) per worker in LAC was higher than the global figure in 1993-2013. At the beginning of the 80s, the VAA of the region was around 2,000 dollars per worker, more than twice the world average. In 2012 this value exceeded 4,200 dollars, 3.6 times higher than the world value (FAO 2014c). That average growth in VAA between 2010 and 2013 also showed large internal differences. Mexico, Venezuela, Colombia, Ecuador, Peru, Bolivia and Paraguay, among others, experienced growth in VAA of over 2.9% in that period. In Brazil, Argentina, Uruguay, Chile and Costa Rica this indicator was below 2.9%, largely due to the fall in international food prices (BM 2015; ONE 2014).

In terms of employment, a large number of the economically active population (EAP) were involved in agricultural activity in LAC, but were overtaken, during the period analysed, by non-financial services and trade. The EAP has reduced, and the greatest reduction occurred in self-employed and family agricultural employment (ECLAC 2015). The region's yields were very low compared with the availability of land for production. The only countries which had yields greater than their land availability are Uruguay, Belize and Venezuela (FAO 2015).

22 Written by Gueibys Kindelán Velasco.

Another aspect to take into account is the fact that the region has consolidated as a net exporter of agri-food products.[23] Between 2010 and 2015, agri-food exports from the region have seen an average annual growth of 7%, exceeding the average growth of imports, 5.4% (FAO 2015). Historically, South America has been the sub-region which contributed most to the world total of agri-food products, from 9.25% in the 1980s to almost 14% in the period (2011-2013) (ECLAC 2015).

It is interesting to note the importance of certain agricultural products from the region on world markets. For example, LAC has produced 58% of the global coffee production, 52% of the soya, 29% of the sugars, 26% of the beef, 22% of the poultry and 13% of the maize (FAO 2015).

Moreover, the region had the ability to be self-sufficient in food and agricultural products, as the largest number of imports (40%) in 2013 came from the countries of Latin America and the Caribbean. In 2013, the principal destinations for agri-food exports from Latin America and the Caribbean were the United States (18.2%), the EU (16.7%) and China (13%) while the largest amount of imports came from the United States (36.5%), the EU (6%) and Canada. China, in particular, was growing as an export destination for the region, as it has progressed from around 5% in the decade following 2000 to over 13% in 2013 (FAO 2014c).

The importance that inter-regional trade has recently acquired is worthy of note, with 16% of total sales and 40% of total purchases in 2013 (FAO 2014c). The principal agri-food products to be imported were maize and wheat, which together represented 14% of the value of agri-food acquisitions (FAO 2015).

Finally, heterogeneity was also evident through foreign direct investment (FDI) in agriculture, because South America was the sub-region which received the largest percentage of this, mainly from Asia – China, India, South Korea, United Arab Emirates and Japan – especially for the production of oil-producing plants (soya) and livestock. In particular, the private sector in Argentina, Uruguay, Paraguay and Brazil has received significant FDI from India in the oilseed, vegetable, cereal and ethanol sectors. FDI from Japan has been mainly in soya and maize throughout the sub-region, while that from China has been in rice (Escobar 2016b).

23 These are primary products and processed foods (FAO 2015).

2.1.3 Agrarian structure, access to land and production systems[24]

Although the agricultural production of LAC has increased, the area devoted to agriculture has not done so to any significant extent. There has been a change in land use towards crops for export (mainly NTAEs) that are more lucrative on the international market. In LAC 37% of the land was used for agriculture and 47% was covered by forests. The Caribbean and Central America have had more agricultural land than forest. In South America the situation was the reverse. Of all the agricultural area in LAC, 2.7% was used for permanent crops and 75% for permanent meadows and pastureland (FAO 2014c).

Table 2.1 shows the principal production systems in the region, which vary from organic farming to intensive systems. For example, Brazil and Argentina have a huge variety of systems for agricultural production, owing to their many different topographies and the vast size of their land areas, 8.5 million km² and 2.7 million km² respectively. The Mesoamerican economies have played a significant role in the production of basic grains such as maize and beans. Other activities such as grazing and forestry are significant in Argentina, Chile, Uruguay and Paraguay. These production systems are intrinsically related to the type of farming. Large farms use more intensive systems and specialise in products for export. Small producers develop more sustainable low-input agriculture focused on traditional products and basic grains.

Table 2.1 Principal production systems in LAC

Agricultural production systems	Countries
Organic farming	Dominican Republic, Uruguay, Argentina
With irrigation	Mexico, Venezuela, Chile, Peru, Argentina
Based on the use of forest resources	Brazil
Mixed and coastal planting	Cuba, Dominican Republic, Brazil, Colombia, Surinam, Nicaragua
Intensive mix	Brazil
Mix of Cereals-Livestock	Uruguay, Paraguay, Argentina, Brazil
Mild, damp mixed with forests	Chile
Maize-beans	Mexico, Guatemala, Honduras, El Salvador, Nicaragua, Costa Rica, Panama
Dry	Brazil, Mexico
Grazing	Argentina
Dispersed (Forest)	Argentina

Sources: Compiled by authors with data from FAO 2001 and FAO 2011.

24 Written by Gueibys Kindelán Velasco and Elisa Botella.

The concentration of ownership was one of the main reasons for the persistence of rural poverty in the region. Fewer than 50% of small and medium producers in Latin America held legal rights over the land (Kay 2006). In the 60s the Inter-American Committee for Agricultural Development (CIDA) conducted the first study on the agrarian question in the region, in which large estates (*latifundios*) represented approximately 5% of the units of production and owned 4/5 of the agricultural land, compared with smallholdings (*minifundios*) with 4/5 of the units of production and 5% of the land (Barraclough 1973).

For ECLAC, the Alliance for Progress, and external consultants, land redistribution was the route to modernisation that would ease the inflationary bottleneck in the food supply during the ISI period in LAC. A wide range of reforms was implemented, from those with wide-ranging objectives to reforms which simply attempted to attract the resources of the Alliance for Progress. Arguments for work productivity (*latifundio*) versus land productivity (*minifundio*), strong opposition from rural and urban business players tried to slow down the reforms or limit their scope. The most sweeping agrarian reforms were the result of social revolutions as in Mexico (1917), Bolivia (1952), Cuba (1959) and Nicaragua (1979). Other governments undertook radical reforms, as in Chile during the governments of Frei (1964-69) and Allende (1970-73) and Peru with General Velasco Alvarado, from 1969 to 1975. The other countries implemented agrarian reforms of lesser scope in terms of the land area expropriated and the number of small farmers who benefited (Kay 1997; Thorp 1998).

Family agriculture

In LAC 80% of farms were family farms, with over 60 million people on them, and they were therefore the main source of agricultural and rural employment (FAO 2014b). Approximately 17 million small farms occupied 34.5% of the total cultivated area with an average farm size of between 3.6 Ha. and 1.8 Ha. (Berdegué and Fuentealba 2011). These farms contributed between 30 and 40% of the agricultural GDP of the region, they produced most of the food for internal consumption, and they developed diversified agricultural activities which ensured the sustainability of the environment and the preservation of biodiversity (FAO 2014).

There are a series of intrinsic characteristics to family farming that explain its importance in national food production, especially in cereals (Patel 2007). These small farm units produced 51% of the maize, 77% of the beans and 61% of the potatoes available for consumption in the region (Berdegué and Fuentealba 2011; see also Kay 1997). In Brazil approximately 4.8 million small producers with 30% of

the total agricultural land of the country produced 84% of the cassava, 67% of the beans, 49% of the maize and 52% of the milk consumed in the country (Altieri 1999). In Colombia, family farming supplied over 30% of the annual crop production, with a very high contribution of maize and beans. In Ecuador, this sector was responsible for 64% of potato production, 85% of onion production, and 70% of maize production (FAO-BID 2007). In Chile, despite it being considered as a major exporting country of Latin America, there were 11 times more farmers producing for the domestic market than for exports. Of the farmers producing for the domestic market, 89% were small and medium farmers (Berdegué and Fuentealba 2011; ODEPA 2002).

Small producers also help reduce food insecurity and the vulnerability of a large proportion of the poor rural inhabitants in areas of subsistence farming and underdeveloped areas (Rosset 2005; Soto Baquero 2009). When there are external shocks, food produced locally involves far lower transport and marketing costs than imported food. According to Altieri (2008), small incremental increases in the productivity of family producers will have a much greater impact at local and regional level then increases in the imports of food from developed countries, controlled by large multinational companies, highly dependent on technology, chemical inputs and genetically modified seeds.

2.1.4 The evolution of public policies in agri-food

The evolution of food security policies in LAC can be seen to have taken place in various phases which in turn coincide with the different models of development presented in subsection 2.1 of this chapter.

In the years 1950-1960, during the ISI, various mother-and-child food and nutrition programmes appeared in the region, run by the State and linked to the substitution of imported foods. These policies combined local services, the participation and initiative of the community and price maintenance of basic products. In Chile they began to distribute milk to mothers and children who attended health centres as part of political campaigns. In Costa Rica, a food programme was introduced, which involved the community buying and preparing breakfast for pre-school children (Da Silva 2008).

In the 70s, the two oil crises, unequal and spasmodic growth, together with the food crisis caused by the great drought in the countries of the Sahel (Burkina Faso, Chad, Mali, Mauritania, Niger and Senegal) led to insufficient and unstable production at global level, causing the death of more than 100,000 people (FAO

2000). Policies were aimed at producing food in the context of increasing debt and inflation.[25]

Since the mid-80s, and especially from 1990, 'Agriculture of Change' persuaded small producers to abandon traditional produce such as coffee, sugar and basic grains to take up crops that were more lucrative on the international market. Lack of state support for small producers with no resources, inputs, land or credit, dependence on imported food, and the dismantling of the internal basic grains sector became the main obstacles to maintaining FNS in most countries of the region up to the world food crisis (2007-2008).

In 1994 the FAO launched the Special Programme for Food Security (SPFS), whose objective, starting from pilot projects, was to contribute to the development of national plans for food security. Food security policies began to lose their relative importance in the face of poverty and poor nutrition in the middle of the decade from 2000 (Benoga 2003). FNS came to the fore at regional level with the Brazilian strategy of 'Zero Hunger' created in Brazil in 2003, focused on the eradication of hunger and on social inclusion, linking macro-economic, social and production policies at national, sectorial and local levels (FAO 2013).

Other laws for FNS were also passed in this period (2002-2008) in Argentina, Brazil, Ecuador, Guatemala and Venezuela, as shown in Table 2.2.

Table 2.2 Food and Nutrition Security Laws in LAC

Country	Law	Date passed
Argentina	Law for an emergency Programme of National Food and Nutrition	2002-2003
Brazil	Law of Food Security	September 2006
Ecuador	Law of Food and Nutrition Security	2006
Guatemala	Law for a National System of Food and Nutrition Security	2005
Venezuela	Law of Agri-food Security and Sovereignty	August 2008

Source: Da Silva 2008.

25 In Brazil, after the crisis of 1978-79, the government stimulated the production of basic grains through the Agricultural Priority Programme. In Costa Rica, Figueres (1970-74) launched an 8 year programme to improve the productivity of basic grains, tropical fruits, dairy products and the rearing of pigs. Oduber (1974-78) initiated the National Programme for basic grains (Rovira Mas 1987).

During the period 2008-2015, distinct international organisations and integration schemes implemented various initiatives to achieve appropriate and sustainable levels of FNS in the region: CELAC, ECLAC, LAIA, ALBA, among others (see Table 2.3).

Table 2.3 LAC: Actions at regional level for the stability and sustainability of FNS

CELAC	FAO	United Nations	EU
2008: "Declaration of Salvador" (Salvador, Bahía, Brazil) 2009: The Montego Bay Action Plan 2011: The Caracas Action Plan "Hunger-Free Latin America and the Caribbean 2025" Initiative	2014-2017: Regional Initiatives (RI) 1. Support for Hunger-Free Latin America and the Caribbean Initiative (HFLACI) 2. Family agriculture and rural land development in Latin America and the Caribbean 3. Improving food systems in the Caribbean	World Food Programme (WFP) Country Programme Cuba 2015-2018	May 2008: V Latin America and the Caribbean and the European Union Summit (EU-LAC) 2013-2016: EUROCLIMA II 2014-2017: Financing from the Spanish Cooperation Agency for International Development (AECID) to the HFLACI

Sources: Compiled by authors with data from Flores 2013, FAO 2016, PMA 2015, CE 2008 and CE 2013.

CELAC and the EU, for example, have a vision of political commitment to support, coordination and promotion. At the V EU-LAC Summit, EU member countries showed themselves deeply concerned about the increase in food prices, and reiterated their commitment through policies to eradicate hunger and fight poverty, with a view to reinforcing agricultural capacity and rural development. At the same time the EUROCLIMA II programme proposed strengthening the ability of key players to adapt the agricultural sector to climate change and mitigate its effects, including measures against desertification and drought in LAC.

These regional initiatives have been complemented by the dialogue platform promoted in MERCOSUR countries through the Special Meeting on Family Farming (REAF), whose methodology intended to raise the participation of family farmers and increase dialogue amongst them concerning the generation of policies.[26]

The FAO has taken concrete action, identifying vulnerable groups, key intervention sectors and well-defined objectives and problems, and giving added value to the

26 Information obtained in an interview with Guillermo Betancourt on 17 May 2016, and also during the CEISAL Congress, Session S13.14: Challenges of sustainable and inclusive development in the Latin America of the post commodity consensus, Salamanca, June 2016.

regional initiatives (RI) implemented. For example, the Hunger-Free Latin America and the Caribbean Initiative (HFLACI) sought to help eliminate hunger, food insecurity and malnutrition, lending support to the formulation and application of multi-sectorial public policies and coordinated national programmes. This programme has contributed to improving institutions, legal frameworks, information and the human/financial resources necessary to reach national objectives in Food and Nutrition Security. It has supported other initiatives, for example, "The plan to eradicate poverty in CELAC and Petrocaribe". Priority countries are Antigua and Barbuda, Bolivia, Ecuador, El Salvador, Granada, Guatemala, Honduras, Mexico, Nicaragua, Paraguay, the Dominican Republic and Saint Vincent and the Grenadines. It has an allocation of budgetary funds in line with the size of the problem in each country, which come from the Mexican Agency for International Development Cooperation (AMEXCID), the Brazil-FAO International Cooperation Programme, the Spain-FAO Programme and the Spanish Agency for International Cooperation for Development (FAO 2016).

For its part, the RI on Family agriculture and rural territorial development in Latin America and the Caribbean fought rural poverty and improved FNS through rural development processes in which family farming played a central role. It has helped to create inclusive policies focused on people (taking account of gender, ethnicity and age); achieve the sustainable management of natural resources while respecting culturally diverse food systems; broaden access by small farmers to public services, producer resources and markets; strengthen producer organisations; and reduce high vulnerability to climate risks and environmental threats. Priority countries were Bolivia, Guatemala and Haiti (phase I); El Salvador, Honduras, Nicaragua and Paraguay (phase II) (FAO 2016).

Meanwhile, the RI on Improving food systems in the Caribbean has focused on creating a favourable environment for establishing agricultural and food systems that were integrated and efficient, to cope with two fundamental problems in the countries of the Caribbean: the limited development of the value chains of food and fodder crops, and the scarce use of national agricultural products. The priority countries of this RI were the member States of the Caribbean Community (CARICOM) which had the lowest revenue and suffered the most from food insecurity and vulnerability, especially Belize, Granada, Guyana, Haiti, Jamaica, Saint Vincent and the Grenadines, and Surinam (FAO 2016).

These RIs generally helped to achieve the outputs under the five strategic objectives[27] and reach the goals that had been set. These actions were supported

27 The objectives were: 'To contribute to eradicating hunger, food insecurity and malnutrition; To increase and improve the supply of goods and services from farming, forestry and fishing in a sustainable manner; To reduce rural poverty: To promote more inclusive and efficient farming and food systems: and To increase the resilience of livelihoods faced with threats and crises' (FAO 2016: 11).

by the respective technical teams of the regional and sub-regional headquarters of a country. This strategic alignment of the RIs also allowed the Technical Cooperation Programme (TCP) of FAO to contribute almost 4 million USD of resources to drive the work of the RIs and the Plan for FNS, Nutrition and Hunger Eradication 2025 of CELAC (CELAC FNS Plan), at regional and national level to facilitate the integration of the RIs and the CELAC FNS Plan into the framework schedules and development programmes of the countries. Despite the accomplishment of all these actions, according to the report of the 34th Period of Sessions of the FAO, its regular Budget, and the Technical Cooperation Fund, the many needs demanded as a priority by the countries of the region were not met, making it necessary to develop a regional strategy to mobilise resources in favour of actions in priority countries (FAO 2016).

Finally, the Cuba Country Programme 2015-2018 of the World Food Programme (WFP) focuses on the FNS of vulnerable groups. It works with the Government of Cuba, at national and local level, to support more sustainable and specific social protection systems. It concentrates on the national priorities defined in the process of updating the model, the challenges of the United Nations "Zero Hunger" campaign and strategic objectives. The principal activities are: supporting social protection programmes related to food security and nutrition; strengthening links between social protection systems and agricultural value chains; and reinforcing the resilience of communities, disaster risk management and the ability to adapt to climate change at local level. To carry out these activities, the WFP will contribute a total of 15.4 million USD and benefit 900,000 people.[28]

The world food crisis was a watershed moment for national authorities, organised groups and international organisations. Table 2.4 shows some of the initiatives in countries selected according to the extent to which they achieved objective 1C of the Millennium Development Goals (MDG) concerning the reduction in the prevalence (%) of hunger between 1990 and 2015, which indicates the state of the FNS in these countries.

28 34 municipalities considered the most vulnerable with anaemia rates of over 35% in children between 6 and 23 months; 18 municipalities whose potential to produce beans is good, but whose level of productivity is low; and 26 municipalities that are very vulnerable to climate risks: droughts and hurricanes (PMA 2015).

Table 2.4 LAC: National actions for the stability and sustainability of FNS (selected countries)

Country	Programme	Content	Action Period
Argentina	*Desarrollo de la Agricultura Familiar*	To help increase the income of family farmers in the province of Chaco y Entre Ríos, by increasing their productivity.	Until 11-12-2017
Bolivia	*Subsidio Universal Prenatal*	To improve nutrition throughout maternity, reducing malnutrition during pregnancy and thereby reducing neo-natal mortality.	From October 2015
Costa Rica	*Plan Integral de Alimentos* *Programa Nacional de Alimentos* *Estrategia de Agricultura familiar*	Promotion of the national production of basic grains. Territorial focus on rural development from 2012 with the Agrarian Development Institute (IDA) becoming the Institute of Rural Development (INDER). Central role in the communities of civil society in rural areas where small producers play an essential role in the production of food (IDA-FAO 2008).	From 2007-2008
Cuba	*Desarrollo Integral de la Montaña*	To achieve integral and sustainable development in the hard-to-access mountainous areas of the country, harmoniously linking the requirements of production with social development, nature conservation, and strengthening national defence, and integrating into its actions the organisations and institutions involved in that process.	From 1987
Nicaragua	*Programa especial de granos básicos, cristianos, socialistas y solidarios*	To maintain production of sustainable food for the community. To maintain the price stability of basic grains. To avoid small farmers being exposed to the constant price changes of the market and also to let them have the option of exporting.	From 2012
Ecuador	*Centros Infantiles del Buen Vivir*	To provide refrigeration for children's food. Assistance with children's nutritional health.	2006-2012
Haiti	*Ti ManmanCheri*	To help mothers support their families and invest in their children's education.	From 2012

Source: Compiled by authors with data from the Food Security and Nutritional Platform 2016.

According to FAO et al. (2015a), some of the countries which achieved the objective in 2015 were: Cuba, Argentina, Costa Rica, Bolivia and Nicaragua. Nevertheless, the latter two had a high percentage of undernourishment – 15.9% and 16.6% respectively – during the period 2014-2016, whereas the first three had a prevalence of hunger of less than 5%.

Generally speaking, the behaviour which led to achieving a reduction in the prevalence of hunger in the afore-mentioned countries enables us to evaluate the impact of their policies and programmes aimed at the stability and sustainability of the FNS.

2.2 Agriculture in the European Union[29]

2.2.1 Principal changes in the post-war period

European agriculture was devastated by the conflagration of the Second World War. Production of bread, cereals and potatoes was reduced by 60% after the war, while the scarcity of fats was even more pronounced. Meat and livestock products also decreased.[30]

Between 1947 and 1948, world food production settled at 7% below the pre-war level. In Europe, in particular, the situation deteriorated because of a lack of resources to pay for the import of basic goods. Europe desperately needed imports as there was a serious shortage of basic provisions, and a weakened and undernourished population, but it did not have the means to afford them. After the war, the volume of imports in Western Europe was no higher than 50% of the level in 1937.[31]

Other factors such as high public debt, inflation, the loss of markets, and social and political problems exacerbated the situation in Western Europe, showing that Europe would not be able to recover from the war without help. To this effect, the Marshall Plan, led by the USA between 1948 and 1952, aided the unimpeded economic recovery in Western Europe, contributing 13 billion dollars during the aforementioned period (Suárez 2010). Annual purchase of cereals in Europe grew from 9.5 million to 14 million tonnes from 1946 to 1948 (FAO 2000).

One of the post-war objectives in Europe was to develop industrialisation, but support for agriculture was essential if this process was to advance. In the 50s and 60s of the last century, Western Europe was characterised by economic expansion known as the 'Golden Age of Capitalism' (1950-1973). GDP grew by approximately 4.5% per year. The Federal Republic of Germany, together with Italy, the Netherlands and Austria led this economic growth with annual growth rates in per capita GDP of around 5%. Growth and the 'catching up' phenomenon were accompanied by profound structural changes, including a loss of value of the agricultural sector within

29 Written by Jourdy Victoria James.

30 For more detail see: http://ocw.unican.es (accessed 2 February 2017). 'La Segunda Guerra Mundial y la reconstrucción de la economía europea *(The Second World War and the Reconstruction of the European Economy)'*, Topic 2.2 of the Masters in economics/instruments of economic analysis, Class 1 material, University of Cantabria.

31 Ibidem.

economic activity, from employment to income generation, and a growth in industry. In particular, from 1945 onwards the Welfare State and economic outsourcing became increasingly firmly established (Maddison 2003).

Principal trends in the rural environment of Europe

Increase in rural exodus:
The period after the Second World War saw the greatest rate of rural depopulation in Europe, greater than the decreases of the late twentieth and early twenty-first centuries.

In Western Europe migration to the city from the countryside accelerated between 1950 and 1960, with 20% of farm workers making this move in only ten years. In Italy, in particular, the rural exodus between 1965 and 1972 reached its highest levels; some 2.5 million Italian agricultural workers moved from the rural areas of the south to settle in the industrial part of the north or in the centre (Golini 1977).

In Spain, between 1960 and 1975, 2 million agricultural jobs were lost, as the numbers employed in the sector fell from 5 to 3 million (IOE 1987). The rural exodus affected the younger generation in particular, leading to a general process of population ageing in the countryside (Moreno 2014).

Industrialisation or capitalisation of agriculture:
Although major changes in European agriculture began to be seen from 1870, it was not until after 1945 that these really took off. There were huge innovations in machinery and chemical fertilisers. The great symbol of the mechanisation of European agriculture was the tractor. Similarly, the discovery of new insecticides – such as Dichloro-Diphenyl-Trichloroethane (DDT) – and herbicides, along with a better economic climate for investment, favoured the capitalisation of European agriculture. Also, increased mechanisation was observed in the EU farming sector: average tractor use by owners grew from 44% in 1995 to 56% in 2005 (European Commission 2011).

As the tractor had a relatively high acquisition price, it needed to be used on large farms for full return on the investment. These conditions favoured an increase in the size of farms and in their capitalisation, and also led to great improvements in work productivity and income from agriculture.

This technological change in European agriculture favoured its industrialisation through public investment. From the 1950s investment in Research and Development

(R+D) in the sector increased, as did research programmes in the technologies of the 'Green Revolution'. These transformations led away from an agriculture whose inputs were produced within the sector itself, to one where the materials for agricultural work were obtained on the market from companies specialising in producing everything from improved seeds to chemical products to agricultural machinery.

These innovations in agriculture led to a rapid increase in productivity, increased food production and plot concentration.

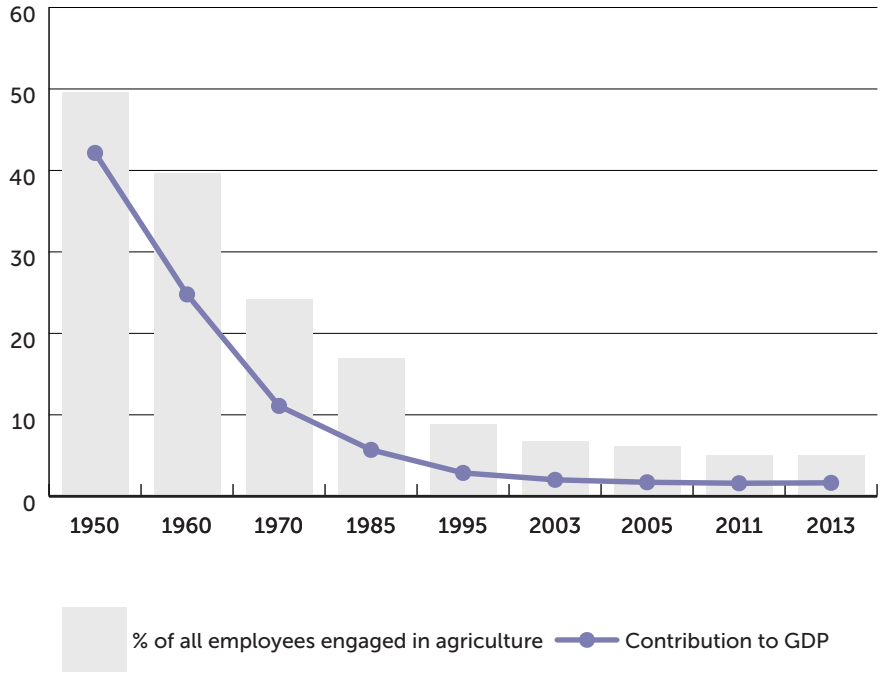
A spread of plots belonging to one single property and farm was not compatible with modern agriculture, because it made mechanisation difficult and caused time to be wasted in travelling.

Agricultural development facilitated the building of infrastructure and the supply with modern services in rural areas and led to greater product diversification. Along with this a strong consumer market for high-quality agro-industrial products and other types of services offered by rural areas – recreational, environmental, cultural, to name a few – was established, thereby strengthening the rural economy.

2.2.2 Composition of the European agricultural sector

The structure of the agricultural territory of the EU is composed of 47% of agricultural land and 30% of forest; around 50% of the population live in this territory, working in agriculture and other activities, according to data from 2013. Agriculture and the agri-food industry together make up 6% of the GDP of the European Community, spanning approximately 13 million businesses and 14 million jobs (European Commission 2013[a] and authors' calculations using FDE 2015).

Figure 2.1 EU: Contribution of the agricultural sector to the economy (%) (1950-2013)

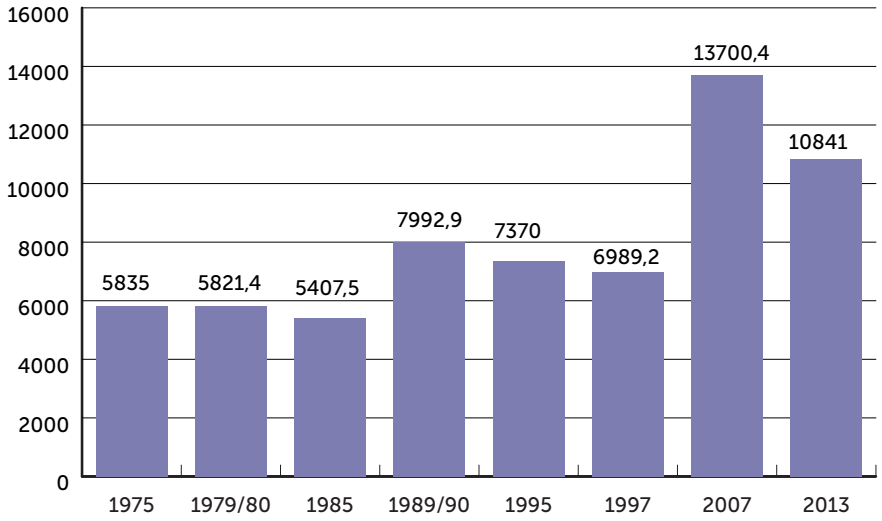


Source: Compiled from data from http://www.indexmundi.com/es/datos/uni%C3%B3n-europea/valor-agregado-por-la-agricultura (date consulted: 27 April 2016).

Arable land constituted almost 60% of Usable Agricultural Area (UAA). In 2013 this stood at some 175 million Ha. of land, and in 2007 it was 172.5 million (62 million in 1975). France and Spain had the largest UAA of all community countries with 15.9% (27.74 million Ha.) and 13.3% (23.3 million Ha.), respectively (Eurostat 2015a).

Since 1970, the number of farms in the EU has declined. In 1975, the EU had 5.8 million farms; after the accession of the States of Central and Eastern Europe, in 2005 and 2007, this increased to 13.7 million farms, but in 2013 there were 10.8 million. Romania had the largest number of farms with 3.6 million – 33.5% of the EU total –, followed by Poland – 13.2% - (European Commission 2011; Eurostat 2015a).

Figure 2.2 EU: Total number of farms (in thousands) (1975-2013)



Source: Compiled by authors with data from Eurostat 2015a.

Farms are of various types, and include intensive, conventional and organic farming. Such heterogeneity has increased with the entry of new member countries in 2005 and 2007. These have had family farms, handed down through the generations. About 97% of the farms in the EU were family farms. Family farming took up 67.4% of the total farmed surface area. Approximately 60% of family farming was located in Romania, Poland and Italy, whereas 30% of non-family farms were found in France and 21% in Spain (Eurostat 2014).

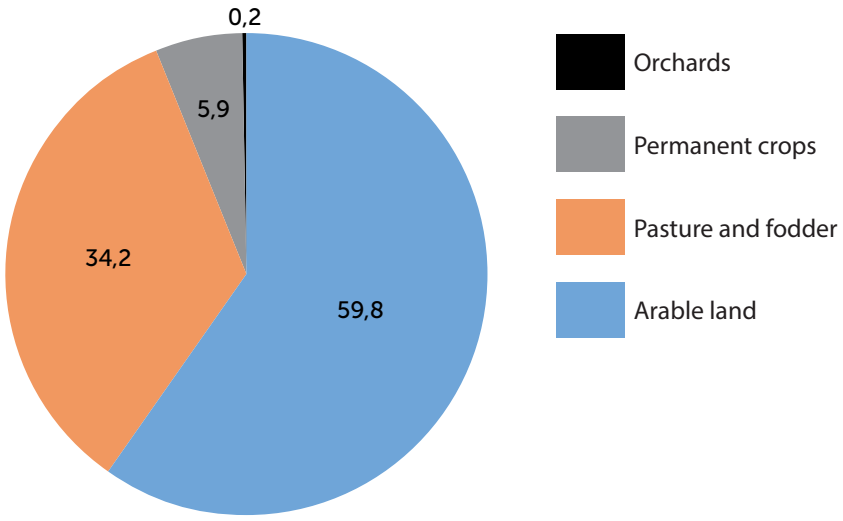
There has been a high level of concentration in the agricultural property of the EU; in 2013 there were 16 Ha. per farm. From 1975 to today a reduction in the proportion of small farms and an increase in large farms has been observed (Eurostat 2015a), in line with the post-war transformations.

At the beginning of the 1990s, 62% of all[32] farms had less than 5 Ha. and 16% had more than 20 Ha., whereas in 2007 the proportions were 56% and 21% of the total, respectively (European Commission 2011). For example, Poland, which had stood out because of its high number of small and prolific private farms, has steadily decreased the number of farms since 1989, reaching 2.5 million in 2007 (Wolek 2009).[33]

32 Germany is excluded from this calculation, as the source used did not include figures for Germany.
33 See https://es.santandertrade.com/analizar-mercados/polonia/politica-y-economia (accessed 2 February 2017).

From the point of view of the distribution of UAA by land use it can be seen that arable land represents almost 60% of the total, followed by pasture and fodder.

Figure 2.3 EU: Distribution of useful agricultural land by use (2013)



Source: Compiled by authors with data from (Eurostat 2015a).

The agricultural workforce in the EU-28 comprised 9.5 million farmers and 8.7 million of them – 92% – were permanent workers. Poland – 20.2% of the total for the UE-28 –, Romania – 16.3% –, Italy and Spain – 8.6% each – reflected the highest percentages of the population employed in agriculture. Between 2007 and 2013 the number of farm workers fell by 2.3 million, which represented a contraction of almost 20%. The sharpest decreases were seen in Slovakia, Italy, Cyprus and Bulgaria (Eurostat 2015a).

Approximately 77% of the agricultural workforce consisted of family and over 75% worked part-time. In Poland, Ireland, Croatia and Slovenia, the family workforce accounted for more than 90% of the volume of agricultural work. Part-time work was similarly very prevalent, especially in the Mediterranean countries. There were around 10.8 million farm managers in the EU and over half of them – 55.8% – were at least 55 years old. In Portugal, almost 74% of all those in charge of running farms were over 55, in Romania the figure was 64.4% and in Italy 63%, to mention but a few countries. On the other hand, those under 35 represented 6% of the total number of all managers; only in Poland – 12.1% – and Austria – 10.9% – had over 10% of young farm managers (Eurostat 2015a).

Another issue is that approximately 75% of workers in the sector were men; women mainly worked on family farms and were essentially employed part-time (Eurostat 2015a).

Among the main agricultural products of the EU there were cereals, sugar and oilseeds. Wheat production represented some 47% of all cereals, maize 21% and barley 20% (Eurostat 2015b).

The main producers of cereals and sugar beet were France and Germany. In these two countries approximately 38% and 52% of the total EU production was concentrated. Italy led in tomato production, Spain produced 45% of European olive oil and 31% of European fresh fruits and Poland was the largest producer of apples, with almost 26% of the total. The principal agricultural producers were France, Italy, Spain and Germany, which together generated almost 70% of the gross added value in the sector (Eurostat 2015b).

The agri-food industry in the European Union

The agri-food industry is considered the most significant industrial sector in the EU and produces food and drink products for marketing and consumption. In addition, it processed over 70% of European agricultural production and its production brought in 1.2 billion euros (FDE 2015).

The food and drink industry employed 4.2 million workers – 15% of the jobs in the industrial sector –, it had 289,000 businesses and contributed 12.8% to the added value of the industrial sector, far above the automotive, metal, machinery and equipment sectors (FDE 2015).

Generally speaking, the fact that the proportion of employment in the agri-food sector over the entire industry is greater than the proportion of its added value shows the intensive nature of the production workforce and explains how work productivity in the agri-food industry is considerably lower than in other manufacturing activities, which are intensive in capital.

Drinks, assorted products – bread, cakes, sweets and chocolate –, meat products and dairy products predominate in the agri-food industry, and the main food producers were Germany, France, Italy, the United Kingdom and Spain, with 66% of the production volume of the business concentrated in these countries (FDE 2015). Family expense on food was close to a billion euros for the whole of the EU, 14% of total expenditure (Eurostat 2015c).

Between 2010 and 2014, world prices rose at a slower pace than agricultural prices. However, prices paid for food by consumers in the EU – retail prices – increased 2% per year above average inflation in the region (Eurostat 2015d).

All in all, the agricultural sector, the food industry, and wholesale and retail distribution of food are the driving forces of the food chain in the EU, as there is no single, uniform and common food supply chain. The extent and complexity of the chains are related to the particular characteristics of the product and the market. The organisation of the market alters at each link according to the products and the member States involved. [34]

Table 2.5 EU: Structure of the food chain

	Unit of measurement	Food industry	Wholesale sales of agricultural and food products	Retail food sales
Volume of business	Billion	1.062	1.255	1.132
Added value	Billion	206	104	160
Number of employees	Million	4.3	2	6.2
Number of businesses	1000	289	338	822

Source: Compiled by authors with data from FDE 2015.

Agri-food market behaviour in Europe

The EU has been the main trading power in agricultural and food products at world level, accounting for 10.1% of the exports and 9.8% of the imports of agricultural products, and 9.9% and 9.6% respectively of food products (WTO 2015).

At the same time, the EU has been the largest world importer of food products. In 2014, it imported around 64,000 million euros of agricultural products from developing countries, principally Brazil, the United States, Argentina, Switzerland and China (WTO 2015). The Food industry made up 8% of total European exports. Sales of food outside the EU doubled in the last decade to reach 91.7 billion euros in

34 In Spain, the Food Information and Inspection Agency has regulated the functioning of the agri-food chain, commercial relationships and payment and collection schedules. There are few other experiences like this one. Interview with Dr José Miguel Herrero Velasco, 12 April 2016.

2014. Exports within and outside of the Union went up to 331 billion euros, with 72% being within the EU and 28% outside of the EU (WTO 2015).

Approximately 25% of food sales went to non EU-members. The principal destinations for agri-food from the EU were the United States, Russia, Switzerland, China and Japan. The main export categories were spirits, wines, flour, pasta, foods and wheat. The major imports into the EU were related to tropical products, including fruits, coffee, soya flour and vegetable and animal fats.

The agri-food trade surplus of the EU was approximately 28 billion euros (WTO 2015). Nevertheless, the EU had a negative agri-food trade balance with Argentina, Brazil, the Association of Southeast Asian Nations (ASEAN), Australia, New Zealand, and the African, Caribbean and Pacific Group of States (ACP).

2.2.3 Evolution of the Common Agricultural Policy in the European Union

The CAP came into being in 1962 and for many years it figured as the genuinely common policy of the EU, as well as the one best achieved, although it was the most complex and disputed policy both inside and outside the community. Only two years after the CAP was implemented, in 1964, 85% of agricultural production was regulated by its own Common Market Organizations (CMOs).[35]

The initial principal objectives of the CAP were: to guarantee self-sufficiency in food, to stabilise agrarian markets, to guarantee reasonable prices for consumers and a fair standard of living for the farming population (López et al. 2013:8).[36]

The fulfilment of these objectives centred around three principles:

– Market unity: this was guaranteed by eliminating tariffs and other non-tariff barriers which hindered the free movement of agricultural products within the European market.
– Community preference: internal production was protected from competition from third countries.
– Financial solidarity: the CAP would be financed through the community Budget, especially by use of the European Agricultural Guidance and Guarantee Fund (EAGGF).

35 The CMOs are a set of measures regulating the production and marketing of a specific agricultural product or group of products.
36 For more detailed information see: http://europa.eu/rapid/press-release_MEMO-13-631_es.htm (accessed 2 February 2017).

Also, the way the CAP works is based on two very unequal policies: prices and market regulation policy, and structural policy. However, the EU made much more frequent use of the prices and market regulation policy in order to achieve the objectives set.

In particular, the prices and market regulation policy was structured on the basis of three pricing systems:

– The target price, basic price or guide price: this is the price, which at the discretion of community authorities, should be applied in transactions. Despite them being artificial, the target prices are relatively close to the estimated prices of products on the community market, and they are profitable for farmers.
– The threshold price is the minimum price at which the imported products can be sold. Its objective is to enable products from third countries to reach the internal market at a level that does not threaten internal production.
– The intervention price is the guaranteed price which, if not reached, obliges the community authorities to intervene by purchasing certain quantities of production and storing them. The objective is to avoid prices declining to a level that is unprofitable for producers.

To this end, use of the CET, which penalises imports by a variable amount calculated on the basis of the difference between entry prices and world market prices, was for many years a 'defensive weapon' of the European Community towards third countries. Specifically, the prices and market regulation policy stimulated internal production by establishing high prices for products and also set up clear border protection to prevent more economical external products from entering (López et al. 2013).

The EAGGF had two sections:

– Guarantee, which covered the prices and market regulation policy;
– Guidance, which dealt with the structural policy.

Until 1992, around 95% of the budget of EAGGF was absorbed by the Guarantee section and only 5% by the Guidance section. The resources which went into the structural policy obviously turned out to be insufficient (Delgado y Grande 2005).

Table 2.6 Distribution of EAGGF expenses

	Guarantee Section		Guidance Section		Total Expenditure of the EAGGF	
Years	Millions of ecus-euros	% of the EAGGF total	Millions of ecus-euros	% of the EAGGF total	Millions of ecus-euros	% of the toal budget
1978	8.673,0	96,4	324,0	3,6	8.997,0	79,2
1980	11.314,9	94,9	603,1	5,1	11.918,0	73,1
1991	33.353,0	93,7	2.235,4	6,3	35.588,4	60,9
1993	35.052,0	92,1	3.003,4	7,9	38.055,4	56,0
2000	37.350,0	89,5	4.390,0	10,5	41.740,4	44,8
2002	40.360,0	90,1	4.420,0	9,9	44.780,0	45,8

Source: Delgado et al. 2005.

Evaluation of the CAP up to 1990

In the 28 years it was operating up to 1990 the CAP achieved the following successes:

- It contributed to an increase in the productivity of the agricultural workforce. During the 1980s, productivity in the agricultural sector was higher than 4%, twice as high as the average rate in the EU across all sectors. This growth was achieved at the cost of a rapid decrease in the workforce, with large differences between countries (Delgado and Grande 2005).
- It decreased price fluctuations of agricultural products within the Union, as a consequence of them being restricted at high levels.
- It improved incomes for farm workers. In 1991, agrarian aid made up around 13% of farmers' income. Although the CAP reduced the gap between the income of a farm worker and that of other workers in comparable categories, in the first decade of the new millennium farm workers' incomes were still between 60% and 70% of workers' incomes in other economic sectors.
- It extended levels of internal self-sufficiency. From the second half of the 80s, levels of internal self-sufficiency rose for specific products. For example, in sugar, wheat and milk, self-sufficiency rose to 130%, 140% and 270%, respectively (Grande 2005). Between 1970 and 1980, the European Community went from being a net importer of the aforementioned products to a net exporter of them, a situation which continues today.

The CAP also faced a set of problems at that stage:

- As the CAP was principally based on the operation of a price policy in favour of European farmers, it encouraged them to increase production without taking into

account demand and market conditions, consequently creating large excesses. At the beginning of the 90s Europe's trade deficit in agriculture had become a surplus.

- It did not guarantee reasonable prices for European consumers. In 1990, the prices paid by European consumers, because of the internal price policy, were the highest at global level (ECLAC 1995).
- It fostered an unequal distribution of resources between countries, farms and productions. Large farms benefited most, as the price policy rewarded farmers in proportion to the volume produced. That is how, between 1960 and 1990, 80% of the resources were absorbed by 20% of the farms (Delgado y Grande 2005).
- France is the country which has received the most resources from the CAP out of the whole community, a position still maintained, according to 2014 figures, followed by Spain, Germany and Italy (Massot 2016). However, the United Kingdom received five times more help per farmer than Spain (Oliveras 2005). There was therefore an imbalance between the contribution of each group of products to the agricultural production of the community and their part in the EAGGF costs. So, crops known as Mediterranean (fruit and vegetables, olive oil, wine, rice, tobacco and cotton) took up 17% of EAGGF – Guarantee costs. At the same time a reduced group of typically continental products – cereals, oilseeds and protein crops –, plus beef and milk, took up 60% of the aid (Vega 2005).
- Similarly, differences between member States have increased. Production structures have been very unequal within the Union. This was caused by inequalities in aid for different types of production and differences in their size and capitalisation.
- Structural change in the sector was relegated to second place.

The CAP favoured an agri-food system that put biological diversity at risk and distanced producers from consumers; structural change in the sector was side-lined. With the successive enlargements of Europe, structural and inter-regional disparities increased; the adaptation of the CAP to this new situation was inadequate (Delgado and Grande 2005).

These problems with the CAP began to be resolved at the end of the 1970s. Measures were taken including freezing agricultural prices, reducing intervention prices, establishing production quotas (sugar and dairy) and stabilisers for the agri-budget (reducing prices and guarantees when production or intervention exceeded set levels), among other things. However, the impact of these measures was not very significant and at the beginning of the 90s, most of the problems caused by the operating of the CAP were still not resolved.

Reforms of the CAP

From the 1990s the CAP has gone through various reforms: the MacSharry Reform of 1992; the Reform of 1999, within the framework of Agenda 2000; the Fischler Reform of 2003 and the Green Agriculture Policy for the period 2014-2020, – all with the objective of promoting more sustainable agriculture and reducing excess production, financial costs and the expenditure of the EAGGF.

The MacSharry Reform of 1992 had among its objectives reducing agricultural surpluses, bringing internal prices closer to international prices and keeping a sufficient number of farmers in the farming sector for the purposes of production and protection of the countryside.

This reform started a new phase in the way European agriculture was regulated. Among the principal changes introduced by the reform were:

– A reduction in institutional prices, and compensation for loss of income by farmers. For example, the price of cereals went down by 30% whereas the reduction in the price of beef was 15%. Lost income from this decrease was restored by direct aid to income and also through a set of support measures or structural actions (Grande 2005).
– Revival of the development policy: aid was granted for developing sustainable agriculture, reforestation, early retirement or annual allowance unrelated to area of land relinquished, ecotourism, among other projects.
– The promotion of more extensive production: farmers received more institutional support for having a cattle farm, sowing some land, or ceasing cultivation and not for increasing their yields.

As a result of applying this reform the following was observed:

– Reduction in surpluses. Cereal surpluses went down from 21.8 million tonnes in 1992 to 1.2 million in 1996. Similarly, excess beef production reduced from 1.2 million tonnes to 0.4 million, in the same period of comparison (Grande 2005).
– Decreased financial cost of the CAP. Whereas in 1991 the CAP absorbed 61% of the community budget, in 1995 the percentage was close to 50% (Grande 2005).
– A cut in the expenditure of the EAGGF-Guarantee. Expenditure aimed at subsidising exports and supporting warehousing was dramatically cut from 91% of the total expenditure of the EAGGF-Guarantee in 1991 to 20% in 1996 (Grande 2005). In particular, the percentage of the CAP budget for export subsidies went down from 33% to 14% during the 1990s, according to the European Commission (Carney 2004).

To sum up, the 1992 reform was not about removing protection for the farming sector, but modifying the way in which it was done. The prices and markets policy was replaced by a direct aid policy for income, thus avoiding the problems it had caused both within Europe and on world markets. The 1999 CAP reform strengthened some of the objectives of the previous reform and established other new goals. It proposed: improving competitiveness in the agricultural sector through a new reduction in institutional prices; producing quality foods more in line with consumer demand; ensuring an adequate standard of living and stable income for the agricultural community; promoting practices which respect the environment and contribute to the preservation of the natural heritage; diversifying activities in the countryside and simplifying the CAP budget.

This reform reinforced the previous 1992 reform. It continued acting upon the budget and the surpluses. In 2001, 70% of the sales made by the European Union were achieved without subsidies (PAUE 2005), 85% of the cost was directed to financing the Guarantee section and 15% to the Guidance section. Altogether, in 1995, the rural development quota did not even represent 10% of agricultural costs (Colino 2005; Delgado and Grande 2005).

The 2003 reform was more extensive than the previous ones, stimulated by the process of deepening and widening the EU – the budgetary restrictions generated by preparation for Monetary Union and enlargement towards Central and Eastern Europe –, as well as by the increasing competitiveness of products from third countries and the new round of World Trade Organization (WTO) negotiations.

The 2003 reform categorically uncoupled aid from production. The key element of the reform was the establishment of a single farm payment irrespective of its production, and consequently uncoupled from this, yet linked to the fulfilment of specific conditional requirements. From then on subsidies were to be allocated to the producer and not for production, and a fixed amount would be received per farm, equal to that obtained in the previous three years. Likewise, there was a reduction in direct farm payments, with the aim of financing new rural development measures (known as modulation).[37] To this end, farm hectares which had received direct aid of over 5,000 euros annually saw their subsidies reduced by 3% in 2005, 4% in 2006 and 5% in 2007 (Grande 2005).

More funds and greater efforts were directed towards the rural development programme. For example, more resources were allocated to helping the installation

37 For more detailed information see Grande 2005.

of young farmers and there was greater support for the application of environmentally friendly measures in agriculture.

The objective of decoupling aid from production was to compensate farmers' income, so that they would produce exclusively according to market options and alternatives. This model tended to produce sectorial and territorial readjustments, some of which were foreseen in the reform and implied specific linking of aid to specific products or activities.

In 2008, the European Commission presented the "CAP Health Check" which established compulsory decoupling for almost all sectors from 2010 and envisaged a reduction in direct aid. In addition, it established the Single Payment Scheme which was comprised of a single aid payment per farm, calculated according to aid received or production delivered during a reference period and not dependent upon the production of any particular product. As a result, almost all the direct payments in 2012 were decoupled (approximately 92%), with only some specific aid payments remaining linked under Article 68 (European Commission 2013b).[38]

The CAP in the period of the European crisis (2014-2020)

In the context of the current global crisis which is severely afflicting the EU, a new CAP reform was agreed in 2010. In this new period one can see a certain continuity with the previous strategies, as well as progress towards better care of the environment and public goods provision.

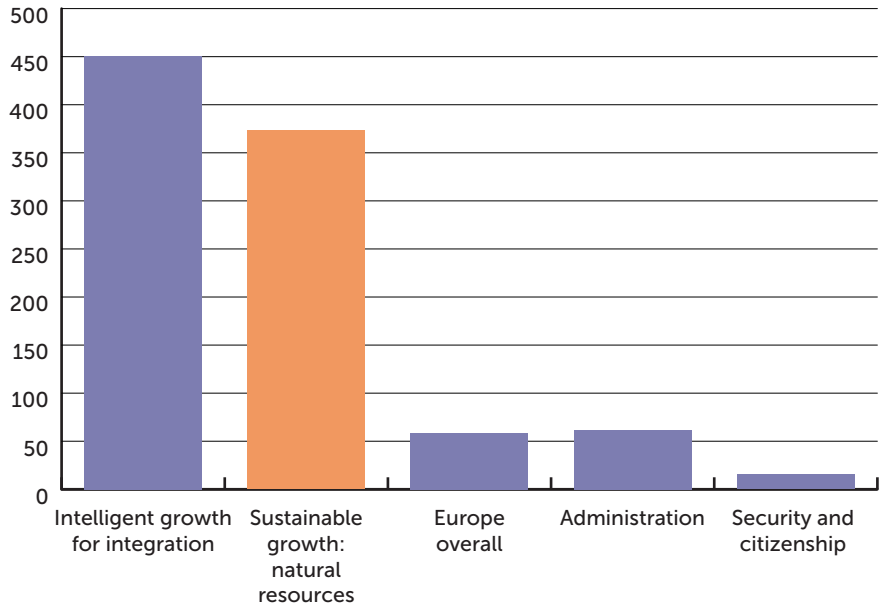
In particular, the transformations of 2013 were established under different rules from the past. Previously, decisions to reform the CAP were taken in the Council of Agriculture Ministers, but the Treaty of Lisbon[39] confined them within a rather complex joint decision process. The European Council and Parliament would therefore decide on proposals from the European Commission. The latter would also act as facilitator for the necessary convergence of the two other institutions on a common text (Crombez et al. 2012).

38 Article 68 of Regulation 73/2009 (title V of Royal Decree 202/2012) envisages specific aid (in some cases linked to production, although limited) to compensate for the disadvantages caused by the decoupling of aid in particularly sensitive sectors and to encourage specific types of agricultural production. For example, linking was authorised for up to 25% of aid per Ha. in cereals, oilseeds, legumes and other arable crops (Blanco and Bardají 2014).

39 The Treaty of Lisbon (2009) introduced two important changes to CAP Reform: a) the co-decision procedure, which meant that the European Parliament became a co-legislator within the Council. In this sense, the Parliament is able to block and change legislation to reform the CAP (Crombez et al. 2012); and b) the Parliament would be able to veto the Multiannual Financial Framework (MFF) agreement (Lovec and Erjavec 2015: 52-53).

For the period 2014-2020, the total of all financial resources allocated to the CAP within the Multiannual Financial Framework (MFF)[40] of the EU-28 rose to almost 408,313 million euros, which represents a reduction, in real terms, by 11.3% compared to the period of 2007-2013.[41] From 1986 to 2012, aid for farmers decreased from 39% of gross agricultural income to 19% and a reduction in taxes for consumers was seen indirectly. The new CAP Regulations approved in 2013[42], and modified in 2015, define the future of a policy which has a decisive influence on the management of at least 80% of European territory, and which, although decreasing in importance, will still take up 40% of the EU budget (Anania and Pupo 2015).

Figure 2.4 EU: Multiannual Financial Framework 2014-2020 (Billion euros)



Source: Compiled by authors with data from the European Commission 2013c.

Approximately 86% of the financial resources of the 2014-2020 MFF are taken up by the sections known as "Intelligent growth for integration" and "Sustainable growth".[43]

40 The Multiannual Financial Framework organises EU expenditure over a period of seven years. This is not the annual budget but it provides the framework within which annual budgets can be negotiated. Annual budgets are negotiated by the European Commission, Council and Parliament on the basis of expenditure limits established in the MFF.

41 From another point of view, the European Budget approved for 2007-2013 was the lowest in the history of European integration. Total planned expenditure was 1.04% of European GNI (COAG 2006).

42 The new model is regulated by Regulation (EU) no. 1307/2013 of the European Parliament and Council of 17 December 2013 on Direct Payments. For more detail: http://www.europarl.europa.eu/atyourservice/es/displayFtu.html?ftuId=FTU_5.2.2.html (accessed 14 February 2017).

43 The first of these includes actions to promote competitiveness for growth and employment and economic, social and territorial cohesion and the second contains the financial resources for the CAP.

The latter is where the financial resources for the CAP are covered; in it can be seen a reduction from 42.3% – in the 2007-2013 MFF – to 38.9% in the 2014-2020 MFF (Anania and Pupo 2015).

The new MFF contains important decisions for the new CAP, including:

- EThe so-called "external convergence" of direct payments[44]: the member States, with direct payments per qualifying Ha.[45] below 90% of the EU average must cover 30% of that difference during 2014-2020 (Blanco and Bardají 2014).
- Internal convergence: the minimum aid to each beneficiary may not be lower than 60% of the qualifying hectares. Support is reduced to those farmers whose payments are above the regional average per qualifying hectare.
- Flexibility between the two pillars of the CAP: Members of the EU may make transfers of funds of up to 15% of the financial resources of direct payments (first pillar) to policies for rural development (second pillar), and vice versa. In particular, nations with an average direct payment per hectare of below 90% of the EU average are allowed to transfer an additional 10% of the resources allocated to direct payments in the EAFRD[46] (Anania and Pupo 2015). France, Germany, the Netherlands, Lithuania and the United Kingdom took up the transfer of funds from the first pillar to the second, to strengthen the rural development policy. Poland, Croatia and Slovakia did the opposite, limiting the rural development policy (Blanco and Bardají 2014).
- Progressive cuts in direct payments: working farmers[47] who receive more than 150,000 euros as basic payment will see their rates reduced by at least 5%. Amounts obtained by this reduction will be safeguarded by the State in which they originated and used for rural development programmes (Blanco and Bardají 2014).
- New system of multifunctional direct payments: some payments are compulsory for members of the EU and others are voluntary, once more reinforcing subsidiarity.

44 Direct payments are those made to the farmer directly, based on the various aid regimes. The new focus of direct payments involves abandoning historical references and implementing payment by hectares (Abelenda 2014).

45 For more detailed information see Art. 32 regulation 1307/2013 http://eur-lex.europa.eu/legal-content/es/TXT/PDF/?uri=CELEX:32013R1307 (accessed 2 February 2017).

46 The EAGGF was divided into two distinct funds in 2007: the European Agriculture Guidance and Guarantee Fund (EAGGF), which financed measures related to the market and aid for income, and the European Agricultural Fund for Rural Development (FEADER), which financed the redirecting of agricultural production towards more sustainable practices and offered substantial subsidies for the environment and life in the countryside.

47 This refers to people who are actively working in agriculture or cattle farming. In the Regulation a negative list was included which reflects those excluded from direct payments, among them: individual persons or corporate entities which manage airports, railway services, water supply installations, property services, permanent sports or recreational facilities, unless they can prove that agriculture contributes a substantial part of their income.

Table 2.7 CAP: New system of direct payments[48]

Compulsory payments	Voluntary payments
Basic payment scheme	Coupled aid
Green payment scheme or greening	Aid for areas with rural disadvantages
Aid for young farmers	Simplified scheme for young farmers

Source: Compiled by authors with data from BOE 2013.

Basic payment scheme: States will direct a proportion of their national envelope to this payment (up to 3% of the national envelopes) for young farmers (up to 2%), for areas with specific limitations (up to 5%), small farmers (up to 10%), green payment (30%), redistributive payments (up to 30%) and coupled payments (up to 15%).[49] With this type of payment decoupled from production, historical preferences on which the single payment scheme is based are eliminated, and not only external but also internal convergence must be achieved, although with exceptions and particularities, given the level of flexibility and subsidiarity established.[50]

Green payment scheme or greening: this is one of the most significant innovations of the CAP reform of 2013. This payment will be requested when practical benefits to the environment and climate are achieved, such as crop diversification, the maintaining of permanent pasture and having areas of ecological interest.

Concerning crop diversification, it was established that farms of over 10 Ha. must cultivate at least two crops, and those over 30 Ha., must grow a minimum of three. In addition, the main crop must not occupy more than 75% of the surface area of the farm and the main two crops must not take up more than 95% of it. Moreover, it was laid down that if the mid-point between permanent pasture and agricultural land decreases by more than 5% in a year, the Member State will oblige farmers to return cultivated land to permanent pasture until they meet this threshold.

In farms of over 15 Ha., at least 5% is declared to be an area of ecological interest. Farmers who meet production conditions and whose products are labelled organic have the benefit of direct aid without the need to fulfil any other requirement. As for small farmers, they are exempt from complying with the new standards included in the ecological payment.

48 Regulation (EU) no. 1307/2013 of the European Parliament and Council of 17 December 2013.
49 Regulations (EU) 1305/2013, 1306/2013 and 1308/2013 (of the EP and Council 17 December 2013).
50 There is a group of nations which achieve convergence at national level, including France and Germany.

Nevertheless, according to experts, the final agreement concerning greening was weak as its proposals were unambitious; the commitment was limited to re-greening, and because of the relative lack of experience of the Commissioner and his Cabinet.[51] In reality, the fact that decisions are taken between such a heterogeneous group of countries can make it much more difficult to reach an agreement.[52]

As for young farmers: an additional 2% is made as a direct payment to farmers who are under 40 years old, who benefit from the single payment, who are starting up a farm for the first time or have done so during the five years prior to the first request for the basic payment. With this measure it was possible to increase the basic payment to young farmers by 25% over a maximum of five years. It involved creating systems to incentivise young people to enter the sector because the agricultural sector is ageing. 14% of farmers in the EU are under 40 and 6% under 35 (Blanco and Bardají 2014).

Coupled aid: it is offered for States to introduce coupled aid in specific sectors. It is destined for specific types of agriculture or agricultural systems which have problems and which are essential from an economic, social or environmental point of view. It is an annual payment, and 8% of a nation's maximum limits may be voluntarily allocated to these payments, or even more, up to 13% in those countries which fulfil certain conditions, among them Spain.

Aid for areas with natural disadvantages: Member States use up to 5% of the national annual ceiling to make additional payments to farms which find themselves in areas with natural limitations between the years of 2015 and 2020.

Simplified schemes for small farmers: this is a payment which replaces other direct payments and exonerates farmers from the obligations related to the ecological payment, conditionality and the fulfilment of internal convergence. The payment is made annually and varies from 500 euros to 1,250 euros.

The agreements omit a large number of matters concerning social impact in the European agri-food sector. Around 70% of the budgetary package for each Member State is directed to supporting whoever owns the land and not to whoever works it; as is the recommended limit for direct payments per farm of 300,000 euros per year. This ceiling will bring with it an imbalance between those receiving support, with greater weight given to transferring funds to the largest farms and the large

51 Agricultural organisations criticised the obligation to withdraw the land; organic organisations declared themselves disappointed by the limited ambition; economists criticised it for proposing ineffective instruments; the Council claimed that the proposals would give rise to more bureaucracy; among other arguments (Swinnen 2015).

52 See Crombez et al. 2014.

landowners in Europe, since, for example, the average paid to the farm-holder in Spain is 5,600 euros per year (López et al. 2013:15).

Summary

Through the CAP reforms, the European pattern of food security has been deployed from productivity to multi-functionality, in line with successive integration into the international markets.

With the new CAP, market regulation policies are vanishing, especially those related to minimum intervention prices, thus facilitating speculation. Some production quotas, which had maintained prices at source over recent decades, will be disappearing over the next years.

To sum up, with the Green Agricultural Policy the basic two-pillar structure has been maintained, - that of direct payments and market measures and that of aid for rural development; the same is true for the gradual cuts in direct payments (continuing the modulation of 2003) and decoupled payments.

Direct payments are continuing, but with substantial modifications to their structure. In this sense, the new reform establishes a new system of two types of multifunctional direct payments: compulsory and voluntary payments. This is one of the most important innovations contributing to greater flexibility on the part of Member States and therefore to different implementation methods. In particular, Green payments and those to young farmers are among the most important innovations and give better definition to direct aid. On the other hand, there is significant redistribution between Member States and within them.

Currently, agriculture in the EU is facing a very competitive environment, because of the greater integration of the world economy and the liberalisation of trade. This tendency will continue over time given the regional and bilateral agreements that are being negotiated and the possible conclusion of the negotiations of the Doha Development Round. In this sense, prospects for agricultural markets are increasingly uncertain and unstable.

Within this context, specific challenges for EU farmers can be observed. One of the challenges is that of how to maintain long-term FNS in the context of economic crisis and a reduction in public policy budgets. Another is that of stimulating the agricultural sector to mitigate climate change and increase its positive contribution by decreasing greenhouse gases, improving energy efficiency, producing biomass

and renewable energy, among other things. Finally, there is the need for territorial and social cohesion over the area of the Community space, by making the most of agricultural potential, integrating young farmers, creating economic activities related to the agri-food industry, trade and tourism, among others.

3. FOOD SECURITY AND SOVEREIGNTY IN CUBA AND SPAIN (2007–2015)

Cuba and Spain are two very different countries from the economic, political and cultural points of view as well as in their natural characteristics. They are two countries which have implemented different agricultural policies within the context of globalisation: Spain with an 'outward-facing' development strategy, yet attached to the protectionist agricultural policy of the CAP, compared to Cuba, with an 'inward-facing' development model, where the decentralisation and internal liberalisation of agrarian structures and the market have attempted to promote an increase in national food production. Looking at those countries from a comparative perspective therefore seems a very worthwhile endeavour.

Comparative case studies, mid-way between qualitative and quantitative analysis, offer greater knowledge and understanding of a specific reality. Selecting two countries from different geographical areas, and going beyond a comparative study of development in LAC, the comparison is feasible because of a set of similar characteristics. They both have strong social institutions (despite having different political and economic regimes), they are of an average size for their region (EU and LAC) and they have high human development indexes (HDI), 0.876 for Spain in 2014 and 0.769 for Cuba; the high level of education in both countries is particularly worthy of note. Also, both Cuba and Spain are urbanised countries where the contribution of the agricultural sector to the GDP ranged from 2.5% in Spain to 3.7% in Cuba in 2014 (INE 2015; ONEI 2015).

An evaluation of FNS, on the basis of some FAO indicators, offers the possibility to identify differences, similarities, advances and setbacks in the sector in the two countries. Likewise, some advances in food sovereignty will prove significant. All the above may contribute to the debate among decision-makers.

3.1 Characteristics of Cuban agriculture[53]

Cuba is a unique case in terms of economic development. Based on a dependent development model, like many other economies in Latin America, the island went from colonial dependence since 1492, to classic dependence from the beginning of the twentieth century, and finally development dependent on the Soviet Union with the triumph of the Revolution in 1959.

With the collapse of the Soviet Union, Cuba felt forced to implement an 'inward-facing' development model (1990-2008) based on structural reforms, import substitution, decentralisation and flexibilisation of productive structures, which particularly impacted the agricultural sector. No other sphere of the Cuban economy has confronted the difficulties in the country with greater thoroughness in order to feed the population over the past 25 years.

Principal indicators

Agriculture is a critical and strategic sector for the Cuban economy, although it also bears much complexity. In 2014 its contribution to the GDP was only 3.7%. Before 1990 the sector directly contributed between 7 and 8% of the GDP (ONEI 2015; Nova 2007). This is not a real indicator of its importance. Of particular relevance are the production chains in the sector with a major group of agri-businesses such as sugar and its derivatives, the food industry, tobacco, drinks and spirits, the leather industry, rope and twine, and timber. These industries represent 6.4% of the GDP and their end products depend partially or totally on raw materials supplied by the primary sector. Other activities, such as transport and the marketing of agricultural and processed products are relevant activities within the sector, contributing approximately 10% of the GDP. Altogether, approximately 20.2% of the country's GDP depends directly or indirectly on agricultural activity, despite the limited conditions of current agricultural production, which is insufficient to feed the population (Nova 2013).[54]

Agriculture is one of the main sources of employment in Cuba. Around 845,500 (19.3% of the EAP) individuals were working in the agricultural sector in 1991. In 2009, the number amounted to 945,600 (ONE 2000, 2008a, 2008b). Approximately 21% of the economically active population worked in the agricultural sector in the period 2014-2015 (Nova 2013). If we take related activities into account, this contribution rises significantly. According to Nova (2007) the family economy of some four million

53 The part of chapter 3 on Cuba was written by Elisa Botella.

54 These limited conditions concern deficiencies in agricultural management, land lying idle, a fall in work productivity, problems in increasing national food production and marketing/distributing primary products.

Cubans is directly dependent on the performance of agricultural activity, showing thereby the major implications of the sector and its multiplier effect on the Cuban economy.

Exports and imports

The export performance of Cuban agriculture experienced a significant collapse when the driving force of the Cuban economy, the sugar agri-business, was dismantled. The value of agricultural product exports in 2015 was less than quarter of that generated in 1989. However, the dynamics of sugar and non-sugar exports are very different. They reveal the recovery of non-sugar exports against the depression affecting those dependent on sugar. The Cuban portfolio of agro-exports is therefore reduced and headed by tobacco, some sugar, drinks, citrus fruits, fish products and smaller quantities of other non-traditional products. The offer needs to be expanded, which will necessarily involve drawing up a policy of export promotion and the quality standards required for the international market (García and Anaya 2015).

Finally, imports of agricultural products doubled between 1989 and 2012. This was the result of the sector's inability to provide food for human and animal consumption, and the upward trend of international food prices, especially from 2001 and in the period 2007-2008. The Cuban agricultural sector supplied approximately 50% of the calories and 35% of the total daily protein consumed by the population. Satisfying the rest of the food requirements depended on imports that represented around 15% on average of total imports between 2007 and 2012, some two billion dollars per year. As we will argue in this chapter, a large part of this food could be replaced by local production and the expense directed towards better provision of inputs and management of the sector (García and Anaya 2015).

3.1.1 Major transformations after the victory of the Revolution (1959-1990)

Díaz-Briquets (2000) points to the existence of two Cubas before 1959: whereas the city of Havana was experiencing considerable growth and urbanisation, in the rural areas the agricultural workers, landless producers and poor farmers were living in conditions of extreme poverty. Unemployment, malnutrition and illiteracy were common features of the rural areas during the pre-revolutionary period; 200,000 families had no access to land, 600,000 individuals were unemployed and there was very limited access to electricity, health services and running water (Álvarez 2004; Nova 2006). On the eve of the 1959 Revolution, 9% of the largest landowners owned

62% of the land and large estates accounted for 4 million hectares of land lying unused (Nova 2006; Rosset and Benjamin 1994).

After the victory of the Revolution on 1 January 1959, the government committed to transforming the rural conditions of the island, handing the land over to small peasant farmers by two consecutive Laws of Agrarian Reform. The first Law of Agrarian Reform was enacted in May 1959 abolishing plantations larger than 402 Ha. and certain types of farming such as sharecropping. The new law guaranteed ownership of the land to those who worked it to ensure better use of resources and more efficient production methods such as cooperatives. However, the law did not divide the vast sugar plantations or cattle ranches expropriated from their American owners, which remained in the hands of the State (Funes 2002; Gaceta Oficial 1959; Rosset and Benjamin 1994).[55] The second Law of Agrarian Reform came into force in October 1963. After its implementation, only 30% of arable land and 30% of the agricultural workforce remained in the private sector whereas 70% of the land became controlled by the State (Zimbalist and Eckstein 1987).

The two Agrarian Reform Laws were in principle devised in line with the commitment by the revolution to transformation, agrarian diversification and industrialisation, in order to decrease Cuba's dependence on sugar exports. However, the new trading relations with the Soviet bloc and their associated subsidies further entrenched Cuba's dependence on sugar exports. Cuba' inclusion in the Council for Mutual Economic Assistance (COMECON) in 1972 encouraged new trading relations through subsidised prices for imports and exports. [56] The Soviet Union sold oil and other raw materials at prices far below market value in exchange for sugar and offered Cuba loans on very favourable conditions. Between 1986 and 1990 Cuba obtained 11.6 billion dollars in Soviet loans (González 2003). Against this background, the revolutionary government became involved in an ambitious plan to modernise Cuban agriculture by developing industrial farms which were very large and capital-intensive, specialising in the production of sugar and cattle. Following the principles of the Green Revolution, these large farms produced and sold sugar (through COMECON) at heavily subsidised prices (51 cents per pound compared with the international market price for sugar of 6 cents in 1986) during the decade from 1970 to 1980 (Álvarez 2004; González 2003; Kost 1998). The government also created hundreds of dairy

55 Two years after the first Law of Agrarian Reform came into force, 58.4% of the land was in private hands, with the remaining 41.6% under state control (Álvarez 2004).

56 COUNCIL FOR MUTUAL ECONOMIC ASSISTANCE, known in the West as COMECON, founded in 1949. Formed by the satellite countries of the Soviet Union after the Second World War: Bulgaria, Czechoslovakia, Hungary, Poland, Romania, Albania and the Soviet Union from 1949; later East Germany (1950), Mongolia (1962), Cuba (1972) and Vietnam (1978). During the 1960s it was the economic integration experiment of the Socialist bloc, characterised more by the bilateralism of its members with the Soviet Union than by the multilateralism between them.

farms, invested in irrigation projects and promoted a massive increase in the use of agro-chemicals and mechanisation (González 2003). In only three decades (from 1959 to 1989), the use of pesticides quadrupled, the use of tractors multiplied by nine, and the application of chemical fertilisers was ten times greater (Saéz 1997). Growth based on export failed when the time came to end the extreme historic dependence of Cuba on sugar exports. Cuba went from its pre-revolutionary exchange that was totally dependent on the United States to a trading dependence on the countries of COMECON. While the United States accounted for 69% of Cuba's foreign trade from 1946 to 1958, the figure for the COMECON countries in the period 1977-1988 was approximately 80% (González 2003). In particular, development dependent on the USSR gave Cuban agriculture a boost that far exceeded the ecological limits to growth. In the mid-1980s, patterns of capital-intensive production ended up causing major deterioration of arable land; this led to wide-ranging production guidelines being imposed which were very dependent on subsidies and trade with the COMECON countries.[57]

3.2 The Special Period in Time of Peace and the situation of the agri-food sector (1993-2007)

With the collapse of the Soviet Union at the beginning of the 1990s, the island's trade exchange fell by 75%, imports by 50% from 1990 to 1993, GDP decreased by 30%, domestic investment fell by 86% and the fiscal deficit rose to 158%. With no access to credit, exports were the only link to international markets. However, these also fell by 67% (Canler 2000; ONE 1996). The situation grew worse with the new and more restrictive sanctions imposed by the United States at the beginning of the 90s. In 1992 the Cuban Democracy Act (CDA) prohibited sales to Cuba from foreign subsidiaries of American companies, which had exported 2.6 billion dollars to Cuba and imported 1.9 billion dollars from Cuba between 1980-1992 (Canler 2000; USCTEC 1998). In 1996 the Cuban Liberty and Democratic Solidarity Act limited direct foreign investment in Cuba. The loss of cheap oil from the Soviet Union then caused an energy crisis (Canler 2000). The worst moment in the crisis occurred during the food crisis of 1993 when the average daily intake of kilocalories fell from 2,908 to 1,863 kcal/person/day.[58] This situation forced the whole island to seek solutions that would guide the new agricultural agenda of the country.

57 In 1988 the COMECON countries represented 63% of Cuba's food imports, 98% of fuel and lubricants, 80% of imported machinery and equipment, 94% of fertilisers, 98% of herbicides and 97% of animal feed (Díaz-Briquets and Pérez-Lopez 1998, 2000).

58 During the food crisis of 1993, the situation of those most dependent on the ration card (the elderly and young children) was dire. Their nutritional levels fell to 1,450Kcal/person/day (Alvarez 2004; Kost 1998).

The Cuban government was forced to declare the 'Special Period in Time of Peace' – a dramatic turn away from dependent development (on the Soviet bloc) to domestic opportunities based on de-monopolisation, deregulation and decentralisation. It was an attempt to diversify the economy and attract foreign investment (and therefore the much-needed currency) into different sectors of the economy (e.g. tourism) (Álvarez 2004; Nova 2006). At the same time, Cuba was forced to seek solutions to feed its people and achieve production without the inputs and oil imported from the socialist bloc (COMECON). The principal changes were in production patterns towards alternative technologies such as biological pest control and organic fertiliser. A large number of small producers, encouraged by researchers and academia (and their previous research into alternative agrarian technology from the beginning of the 1980s), turned towards a type of sustainable farming based on two fundamental pillars: a) the substitution of imported chemical inputs by local alternatives which were much cheaper; and b) a return to using animal traction (Rosset and Benjamin 1994; Wright 2005).[59]

At the same time, the State encouraged structural land changes, towards cooperatives and family farming. One of the main measures to stimulate internal food production was Decree No.142 in 1993 to convert the former state farms to new cooperatives for agricultural production called Basic Units of Cooperative Production (UBPCs) along with the handing over of small plots in usufruct for the cultivation of specific products (such as tobacco). The UBPCs gave the land in usufruct to the cooperative and were similar to the size and type of production developed by the Agricultural Production Cooperatives, CPAs, and associations of small producers who gave the land to the cooperative and worked on it jointly. This process of handing over land was not at all efficient as many UBPCs inherited the characteristics, debt, size and workers of the former state farms (especially in the cattle sector with very inefficient results). However, these new cooperatives, along with a series of additional measures to liberalise the internal food market (for example, the creation of free supply and demand markets in 1994), opened up space for small producers and increased their capacity to produce food for national consumption during the 1990s (Botella-Rodríguez 2012).

As a result, land structure in Cuba underwent huge transformations. While the state sector fell from 75% in 1992 to 23.2% in 2008, the non-state sector (made up of the UBPCs, CPAs and Credit and Service Cooperatives, CCSs) increased by 50% over

59 For example, the benefits of various organic fertilisers such as Rhizobium, which in 1995 replaced 75-80% of the nitrogen fertilisers used on beans and Bradyrhizobium which replaced 80% of such chemical fertilisers in soya and fodder legumes (Martínez-Viera 1997; Martínez-Viera and Hernández 1995). Teams of oxen were much cheaper, they did not compact the earth and they could be used in the rainy season long before tractors, and they also provided organic fertiliser (Funes-Monzote 2008). Between 1989 and 1997 the use of oxen went up from 163,000 to 400,000 (Funes 2002; Ríos and Aguerrebere 1998).

the same period (ONE 2007). The UBPCs in particular occupied 39.8% of the total land in Cuba in 2008. While the CPAs showed a slight increase, from 10% in 1992 to 10.2% in 2008, private forms of land-holding such as CCSs and other land in usufruct almost doubled in the same period. From 1992 to 2008 the most important change seen in land-holding was not only the creation of the UBPCs but the gradual increase in the amount of land in the hands of small private producers (especially in usufruct) (see Table 3.1).

Table 3.1 Sector no estatal en Cuba (1993-2008)

	Type	Characteristics	Type of land-holding
Large, medium or small collective farms (depending on the sector/ activity)	UBPCs	Former state farms Much smaller than state farms Imitate the size and production patterns of the family farms of the CPAs in the 90s. Buy tools, animals etc.	Collective usufruct of the land
Collective family farms	CPAs	Voluntary associations of small producers in cooperatives to share production and technology	Voluntary association and handing over of the land to the cooperative
Private family farms	CCSs and small individual/ scattered producers	Tenants, farm workers, sharecroppers and owners who form a cooperative to organise agricultural work and obtain State credit and services (e.g. plots for the cultivation of coffee, cocoa and tobacco)	Families own the land (private equity) in usufruct for a determined period and under specific conditions (at least 10 years, until decrees 259 and 300 come into force, specifying conditions in greater detail)

Sources: Funes 2008 and Martin 2002.

3.3 Recent changes in the Cuban economy and their impact on the agri-food sector (2007-2015)

From 2007 the Cuban government put into practice a series of reforms aimed at increasing the self-sufficiency in food of the country and reducing dependence on imports. These reforms included the transfer of state lands to private producers (CCSs and scattered farm workers) in usufruct, moderating price reforms, greater decentralisation of decision-making and gradually increasing flexibility in forms of marketing (Nova and González Corzo 2015).

The handover of land in usufruct approved by Decree 259 in 2008 further developed the process of decentralisation and the promotion of peasant agriculture for food production initiated in 1993 with the creation of the UBPCs and the plots in usufruct. More than 170,000 peasant farmers from all over the country benefited from Decree-Law 259 (MINAGRI 2011). The programme of peri-urban agriculture set up on the island from 2010-2011 to improve access to food in rural areas is another example of continuity in the process of decentralising the land and promoting food production.

From 2011 the Cuban economy was immersed in a major process of economic, political and social transformation known as "Updating the economic and social model". This transformation was enshrined in the "Economic and Social Policy Guidelines of the Party and of the Revolution", approved at the VI Congress of the PCC, in April 2011 and ratified at the PCC Conference held in January 2012. The Guidelines constituted an in-depth reform with short- and long-term objectives. Among its short-term objectives may be highlighted control of the balance of payment deficit, generation of external income and import substitution. Among its long-term objectives were sustainable development based on self-sufficiency in food and energy, efficient use of human potential, competitiveness of traditional production, new production of goods and services of high added value (PCC 2011).

Indeed, the most extensive changes have been adopted in the agricultural sector, an economically crucial and strategic sector for the progressive substitution of imported food. Of the 313 directives contained in the Guidelines, a total of 38 were directly dedicated to Agro-industrial Policy, while another 138 further chapters were related to the sector.

To this effect, Decree-Law No. 259 was modified by No. 300 of 2012[60], with the aim of bringing into use, under a regime of free usufruct, an area of unproductive land which initially approximated to 18.6% of all arable land. Its objective was to extend the size of the areas for people who had a working relationship with CPAs and CCSs. The measure was accompanied by a favourable credit and tax policy, and encouraged new producers to settle in rural areas to boost food production. Up to 2015, over 1,700,000 Ha. of idle land was given in usufruct to over 200,000 people, both by the now derogated Decree-Law 259 and by its successor, Decree-Law 282 of 2011 and Decree-Law 300 of 2012 (Nova 2013).

60 This decree offers a solution to two of the four aspects not resolved in decree laws 259 and 282: the right to housing and the hereditary factor.

Land is now distributed in the following manner in the four ways production is organised: the UBPCs (23%), CPAs (9%), CCSs (51%) and the state farms which in 1988 had 82%, and now have 17%. Table 3.2 shows the major increase in private farms (including the new usufructuary system) (Nova 2013; ONEI 2015).

Table 3.2 Land structure (%) (2007-2013)

Year	Total	State	Non-state	UBPC	CPA	CCS and private sector**
2007	100	35.8	64.2	36.9	8,8	18,5
2011-2013*	100	17.0	83.0	23.0	9,0	51,0

* Estimated
** Includes beneficiaries from Decree Laws 259, 282 and 300.

Source: Based on Nova 2013

In 2015 the decentralisation and restructuring of the state agricultural sector continued with the merging of 23 companies which showed continuous losses, the abolition of subsidies for a group of inputs and price reductions of between 30% and 60% (Rodríguez 2016). Tax exemptions and credits were also used in the cooperative agriculture sector with the aim of reducing production and distribution costs.

Despite the negative impact of the 2015 drought, agriculture maintained a growth rate of 3.1% (Rodríguez 2016). The area under cultivation, total production, and productivity (in selected groups of the non-sugar sector) showed mixed results, below the levels expected to substitute a much greater amount of food imported into the island (Nova and González Corzo 2015). Increased production levels were seen in the period 2007-2013 for a group of products (although they are far from those in 1989), such as fruit, beans, maize and rice, the latter being the best performing. There was growth in all livestock products except pork and poultry (Álvarez and Anaya 2015).

Nova and González Corzo (2015) point to three fundamental problems in the agricultural sector, still unresolved, affecting increased production and productivity. In the first place, the need to better define ownership of the usufructuaries; secondly, recognition and acceptance of the market as a complementary mechanism of economic coordination and finally, the lack of a systemic approach to successfully achieve the full cycle of agricultural production. Some of their recommendations for resolving these problems are: the consolidation of markets for inputs where producers could obtain essential inputs at prices corresponding to those they could obtain from their products; greater autonomy, allowing producers to decide freely where and to whom they will sell their produce after fulfilling the agreed social contracts;

diversification of the means of agricultural marketing to enable greater participation by non-state players; allowing producers to freely employ workers to increase production; and finally, offering the necessary credit and technical assistance (Nova and González Corzo 2015).

From December 2014 the process of updating the model has been influenced by the re-establishment of relations between the island and the United States. Although this situation has not led to the immediate lifting of the economic and financial blockade in place since 1962, the new internal and external scene in Cuba presents opportunities and challenges for the agricultural sector. The new external finance policy with debt renegotiation and payment, new employment opportunities, a very slow improvement in actual salaries (despite the continuation of dual currency), the persistence of processes to decentralise production structures and make them more flexible (expansion of the private sector) and the expansion of the tourism sector and its numbers of annual visitors, are key aspects for the future agricultural performance of the island.[61]

3.4 Evaluation of agri-food policies and their impact on the FNS and food sovereignty of Cuba (1990-2014)

Cuba, similarly to other developing countries, has not managed to feed its population with its own resources since the 1950s. It is estimated that in order to achieve 1% growth in GDP an increase in imports of between 2% and 3% is needed (Rodríguez 2016). Of these imports, those of food went from 2.2 billion dollars in 2008 to 1.965 billion dollars in 2015, a figure 4.5% below that of 2014 (Chan and Freyre 2012; Economist Intelligence Unit 2015). Although there was no increase in the amount of imported food, the cost of the imports in currency did go up, especially in 2007-2008 with the world food crisis and both transport costs and the prices of basic products becoming more expensive.

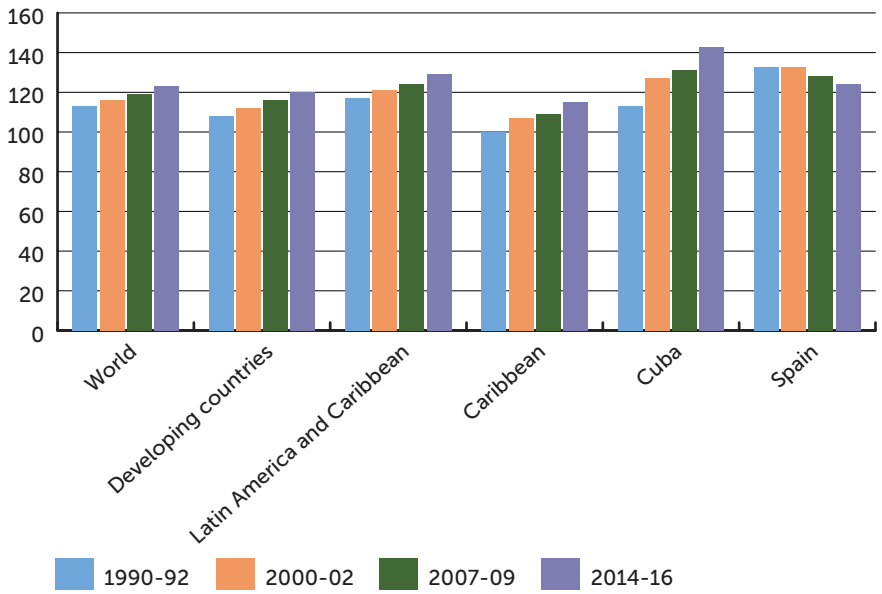
This section analyses the results of the policies previously described on the FNS and food sovereignty of Cuba (1990-2015). It considers the four dimensions and indicators of FNS described in chapter 1 as applied to the case of Cuba in order to understand the state of FNS in the island, with a special interest in both security and stability.

61 The deregulation measures of the Special Period in Time of Peace led to a new internal economic policy based on liberalisation of foreign investment, rules for Cubans about owning American dollars, the creation of licences for private work or self-employment in different economic spheres, the creation of the CADECA currency Exchange houses and the establishment of a network of retail traders in dollars, whose function was to collect currency (Fernández-Domínguez 2005). Partial dollarization of the economy became inevitable in this situation with the introduction in 1994 of the Cuban Convertible Peso (CUC) equivalent to 1 American dollar. Since then two currencies have been in circulation on the island and neither of them is in fact foreign currency like in other countries in the region. They are the Cuban peso (CUP) and the CUC which is worth 1 dollar or 24 CUP.

Dimension 1: availability

To measure the availability of food in Cuba, two relevant indicators are analysed: the adequacy of the supply of average energy requirements and the average value of food production. As shown in Figure 3.1, the adequacy of the supply of average energy requirements[62] for Cuba went from 113% in 1990-92 to 143% in 2014-16, above the average for developing countries (120%), LAC (129%) and the Caribbean (115%), and even above the Spanish average for the two years 2014-16 (124%).

Figure 3.1 Cuba: Adequacy of the supply of average energy requirements (%)

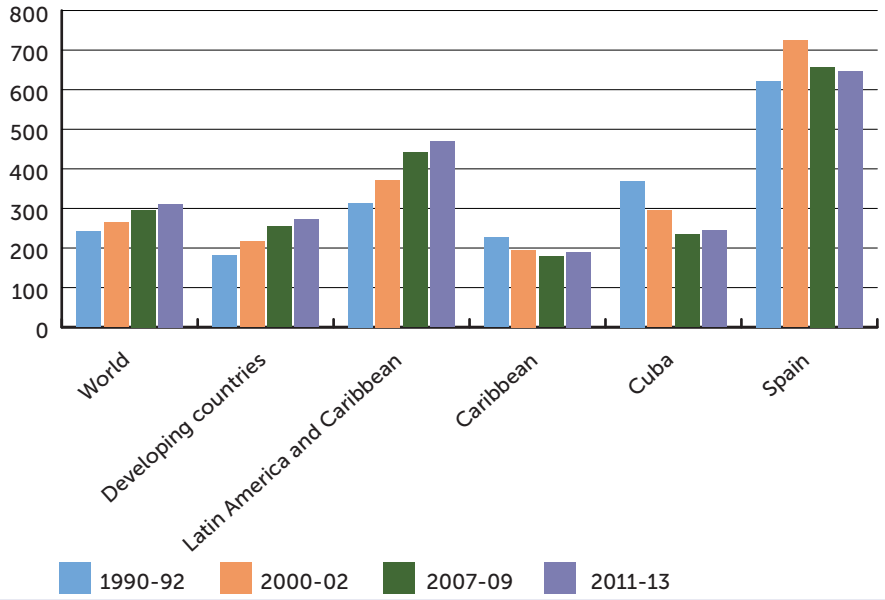


Source: Compiled by authors from FAOSTAT 2016.

The average value of food production (in constant international dollars from 2004-2006) estimated by the FAO in per capita terms, offers a comparable measure between countries of the relative economic size of the food production sector of a country (FAOSTAT 2016). For Cuba this measure went from 369 dollars in 1990-92 to 234 dollars in 2007-09 and 245 dollars in 2011-13, always above the average for the Caribbean countries which went from 225 dollars in 1990-92 to 190 dollars in 2011-13, although it remains below the LAC average of 469 dollars per capita and that of Spain with 647 dollars per capita over the same period (see Figure 3.2).

62 The "adequacy of the supply of average energy requirements" indicator expresses the energy supply for the diet as a percentage of the energy required for the average diet. The average Kcal supply available for consumption in each country or region is standardised with the average energy requirements for the estimated diet for its population, obtaining a rate of adequacy of the supply of food in terms of Kcal.

Figure 3.2 Cuba: Average value of food production (US$ constants of 2004-2006, per capita)



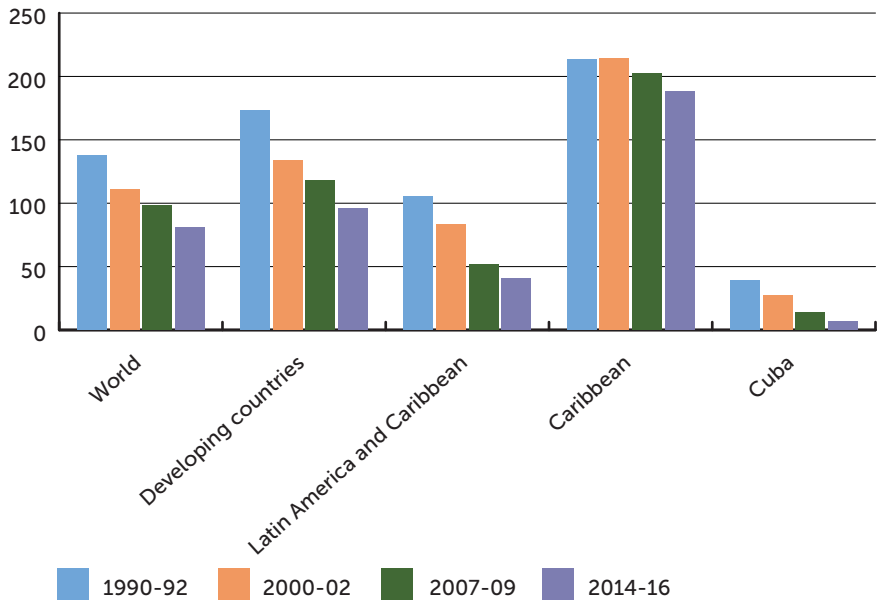
Source: Compiled by authors from FAOSTAT 2016.

For the three other indicators of availability in the period 2009-2011, Cuba shows better results than the Caribbean. The proportion of the food energy supply derived from cereals, roots and tubers according to the latest data from the FAO (2016) is 44% for Cuba, over 40% for LAC and 42% for the Caribbean. The average protein supply in Cuba was 83gr/person/day, more than LAC (82) and the Caribbean (with 66 gr/person/day) in 2009-2011. Finally, the protein supply of animal origin in Cuba was 30 gr/person/day compared to 26 in the Caribbean, but lower than the figure for LAC of 41 gr/person/day for the same period (FAOSTAT 2016).

Dimension 2: access

From the year 2000 up to 2016 the prevalence of malnutrition in Cuba has been lower than 5%, – lower than the levels in Latin America and the Caribbean (5.5% and 19.8%, respectively) in 2016 (FAO 2016). The level of the food deficit went from 39 Kcal/person/day in 1990 to 122 in 1996-98 during the Special Period in Time of Peace, and then reduced significantly from 2000-02 (27Kcal/person/day) right up to 2014-2016 (7 Kcal/person/day). These values are far below the average for Latin America and the Caribbean (see Figure 3.3).

Figure 3.3 Cuba: Intensity of the food deficit (Kcal/person/day)



Source: Compiled by authors from FAOSTAT 2016.

If we look at other access indicators for Cuba, the percentage of tarmac roads as a percentage of the total of all roads in 2010 was 81.9% in Cuba compared with 21.4% for LAC. In respect of the density of railway lines, the latest data from 2009 show 4.6% per 100m2 of available surface area in Cuba compared with 0.5% in LAC in the same year (FAO 2016).[63]

Finally, the GDP per capita (in terms of purchasing power equivalent) for Cuba was 19,950.30 (constant international US$ in 2011 – although $6,789 in current dollars) in 2013 compared with 14,288.5 in LAC and 14,007.1 in the Caribbean (FAO 2016).

Dimension 3: use

To understand this dimension in Cuba, access to improved sanitation services is analysed (among the available indicators) for the biological use of food where the island shows a level of access greater than the LAC average. Other indicators of use do not offer any data and are therefore not representative for Cuba. The percentage of children under five suffering growth retardation was only 7% in 2000, the percentage of adults who were underweight or the vitamin A deficiency in the population of 3.6%

63 There are no data available for the density of roads, the national food price index, or the percentage of money spent on food by the poor.

in 2000, showed that FNS is in a healthy state when the use dimension in Cuba is analysed.

Table 3.3 Access to improved sanitation services (% of the population with access)

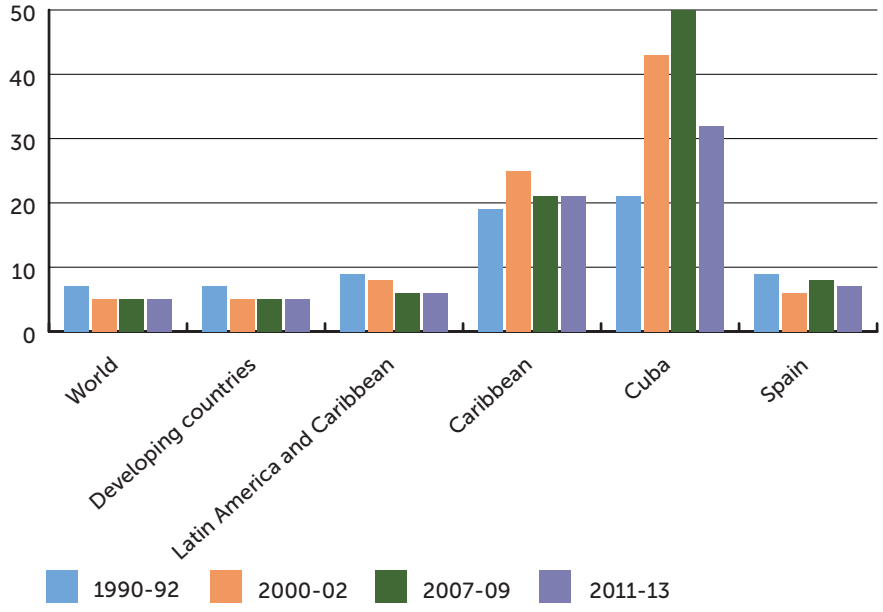
Regions/Sub-regions/Countries	1990	2000	2014
World	54,4	58,8	65,2
Developing countries	39,8	47,0	56,7
Latin America and Caribbean	67,3	74,6	83,0
Caribbean	68,0	70,5	73,8
Cuba	81,5	86,7	93,2
Spain	99,9	99,9	99,9

Source: Compiled by authors based on FAO 2006.

Dimension 4: stability (includes both availability and access)

More current data from the FAO (2016) on food and nutrition security such as the value of food imports compared to total merchandise exported show a fall of 50% in the period 2003-2005 to 32% in 2011-2013 (see Figure 3.4).[64]

Figure 3.4 Cuba: Value of food imports in total exports of merchandise (excluding fish) (%)

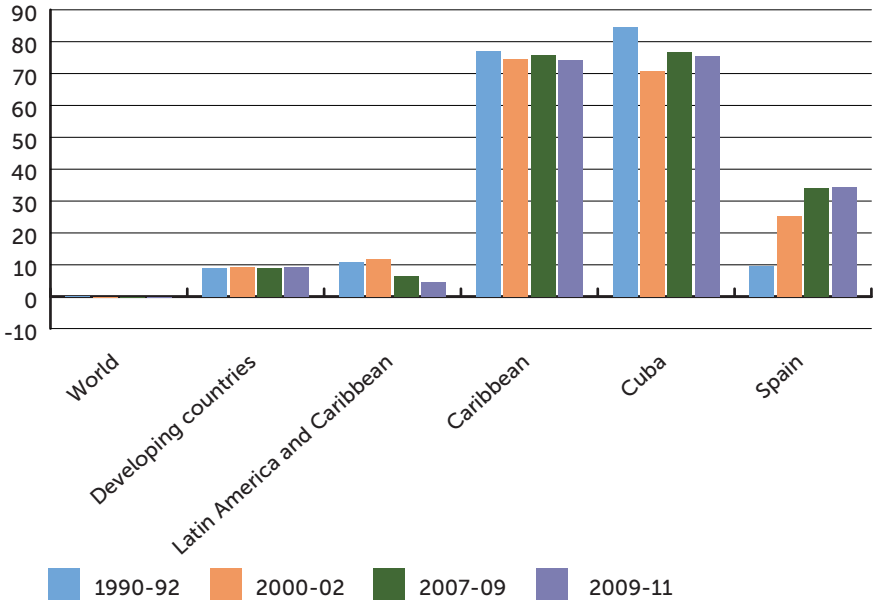


Source: Compiled by authors from FAO 2016.

64 This is an indicator of vulnerability and captures the ability of currency reserves to pay for food imports, with implications for the food security of a country dependent on its patterns of production and exchange.

Concerning basic grains, the indicator of the level of dependence on cereal imports in Cuba fell slightly over recent years, from 77.5% in 2005-2007 to 75.5% in 2009-2011, although it has remained high (see Figure 3.5) (FAO 2016).

Figure 3.5 Cuba: Ratio of dependence on cereal imports (%)[66]



Source: Compiled by authors from FAO 2016.

Other indicators of stability are the percentage of arable land which has irrigation systems: for the period 2011-2013 Cuba had 17.2% compared to 19.5% in the Caribbean and 14.2% in LAC in the same period.[65] Variability in food production per capita (in constant US$ from 2004-2006 per capita) for 2013 was 9.1 in Cuba compared to 4.5 in the Caribbean and 10.1 in LAC in the same year. Finally, the volatility of food supply per capita in 2001 was 91 (Kcal/per capita/day) in Cuba compared to 10 in LAC and 34 in the Caribbean (FAOSTAT 2016).

Relationship between availability, access and stability

It seems that improvements in nutritional levels after the food crisis in 1993 were not exclusively due to a direct increase in the quantity of imported food as this fell sharply to 60.2% in 1989 and 42% in 1997 (FAO 1997). A more specific analysis of

65 Indicators for political stability and the lack of violence or terrorism and for the volatility of national food prices are not available for Cuba.

the ratio of food imported by product groups for the period 1990-92 and 2005-07 based on data from the FAO (2009) shows how cereals (-6.7%), vegetables (-0.66%), meat (-19.04%), legumes (-20.6%) and vegetable oils (-21.3%), key to covering the food needs of the island, reduced the import rates by percentage points (Botella-Rodríguez, 2012 based on FAOSTAT 2009).

Table 3.4 Evolution of ratios of imported foods (Kg/person/year) (1990-2007)

Product groups	Difference in percentage points
Animal fats	53.65
Cereals – Excluding barley	-6.7
Fruit – Excluding vine fruits	0.28
Legumes (e.g. peas, beans, lentils)	-20.6
Meat	-19.04
Milk – Excluding butter	24.2
Offal	9.09
Oilseeds	58.2
Roots/tubers	-1.28
Sugar and sweeteners	14.06
Vegetables	-0.66
Vegetable oils	-21.3

Source: Calculated by authors from FAOSTAT 2009.

These data show mixed results and a continuing dependence on food imports in Cuba. However, it is essential to analyse the contribution and production levels of the non-state sector, especially private producers (CCSs and usufructuaries), and their contribution to national food production in order to understand possible reductions in the island's food imports from 1990 to 2015. In the year 2000, the non-state sector produced 77.8% of the rice, 87.1% of the maize and 91.5% of the beans available for national consumption (ONE 2000). In 2008, small private producers supplied 82% of the maize, 81% of the beans and 36% of the rice available for national consumption. From January to December 2015 CCSs and private producers produced 77.9% of the roots and vegetables, 60.9% of the wet paddy rice, 85.6% of the maize, 78.5% of the beans and 85.6% of the fruit (ONEI 2016).

Table 3.5 Non-sugar production of the non-state sector (%) January-December 2008-2015 (1,000 tonnes)*

Crops	% Private of the total ** 2008	% Private of the total** 2015
Beans	51.1%	70.7%
Bananas	15.0%	29.5%
Citrus fruits	82.0%	86.1%
Maize	36.0%	64.1%
Potatoes	50.0%	74.6%
Rice	81.0%	79.6%
Root vegetables	68.0%	83.6%
Tomatoes	74.0%	81.2%
Tropical fruits	6.1%	6.3%
Vegetables	64.1%	72.1%

*Excluding sugar, small plots and backyards.
** Includes CCSs and small individual producers.

Sources: ONEI 2009, ONEI 2016.

To sum up, the insufficiency of national food production has been a problem in Cuba over the last fifty years, making the country vulnerable to external shocks. This dependence requires high levels of currency for importing food, despite the fact that most products could be produced nationally and competitively. Nova (2013) points out the productive potential of the Cuban agricultural sector which, however, has a large number of agricultural areas which could be cultivated lying idle (over 2 million Ha.). This potential is shown in the significant scientific results of various scientific and technical institutions such as organic farming with the Cuban Association for Organic Farming since 1993 and the Cuban Association of Agricultural and Forestry Technicians (ACTAF) from 1999, the "Farmer-to-Farmer Movement" of the National Association of Small Farmers (ANAP), the "Participative Plant Breeding Programme and the "Local Agrarian Innovation Programme" of the National Institute of Agricultural Science (INCA), University of Havana, and urban and peri-urban agriculture. In the end, Cuba has a material base which, although severely under-capitalised during the 'Special Period in Time of Peace', could be improved and used, and in addition it has major human capital which other countries of the region do not have.

An approach to food sovereignty: urban and peri-urban agriculture in Cuba

Urban agriculture began in Havana as a pure survival strategy after the 1993 food crisis. At the end of the 1990s the urban agriculture programme became a key official policy of the new model of domestic development and import substitution in the island. It allowed small producers to participate in national food production more directly with consumers in urban and peri-urban areas. In the year 2000 urban agriculture produced 50% of rice that was consumed nationally, 70% of vegetables and 39% of fruits (not citrus fruits) (GNAU 2001; Granma 30 January 2001; Pagés 2006). In 2008, urban agriculture occupied 12,588 km2, 14.6% of the total area of Cuba (Companioni, Ojeda and Páez 2002; Rodríguez Nodals 2008). Small producers and people growing food for personal use achieved better results than other structures within the programme. In 1997, peasant farmers produced 27.8% of the total production of food as well as food for self consumption (mainly small market gardeners and producers) and contributed 29.8% of the total food production of the city of Havana (Grupo Provincial Agropecuario 1998). To demonstrate the impact of the programme on national food production Rodríguez Nodals (2008) points to the achievement of the production objective of 300 grams/person/day in 169 municipalities over the 15 provinces with low input practices.

The successful results of urban agriculture encouraged the government to extend the programme to rural and peri-urban areas via the Peri-Urban Agriculture Programme in 2008. Its objectives were to 'produce more with less', to create closer connections between small producers and available land in areas covered with the invasive marabou weed, to promote more sustainable use of transport and of the workforce and to strengthen marketing and distribution channels. The initiative was adopted as part of the afore-mentioned Decree Law 59 of 2008. Bearing in mind that the basic structure model of Peri-Urban Agriculture is the farm, a small operation, closer to private production (CCSs and scattered peasant farmers), this programme increased opportunities for small producers located within a radius of 8 km around urban areas (between 2 and 10 km) to produce food for national consumption (Carrobello 2010a, 2010b). The programme became an example of low-input family farming and an autonomous model of fruit and vegetable production at urban and peri-urban level throughout the island. This experience thus offers an interesting approach to the concept of food sovereignty within the framework of the right to food, as indicated in chapter 1 where approaches to the concepts of FNS and food sovereignty were described.[66]

66 See appendix I with other interesting approaches to food sovereignty in the Cuban case.

3.5 The agricultural sector in Spain[67]

3.5.1 Structure of the agricultural sector

Although Spain had traditionally been an essentially agricultural country, the economic modernisation of the country from 1960 and Spain's accession to the European Union in 1986, together with technological advances, profoundly transformed the agricultural sector.

Whereas the value of agricultural production was 30% of the Spanish GDP in 1950 and it represented over 50% of the economically active population, currently these proportions are below 2.5% and 4% respectively.[68] The importance of agriculture has reduced in relative terms compared to the industrial sector and services; nevertheless, the sector has modernised and its productivity has improved (INE 2015).

Agricultural production and revenue

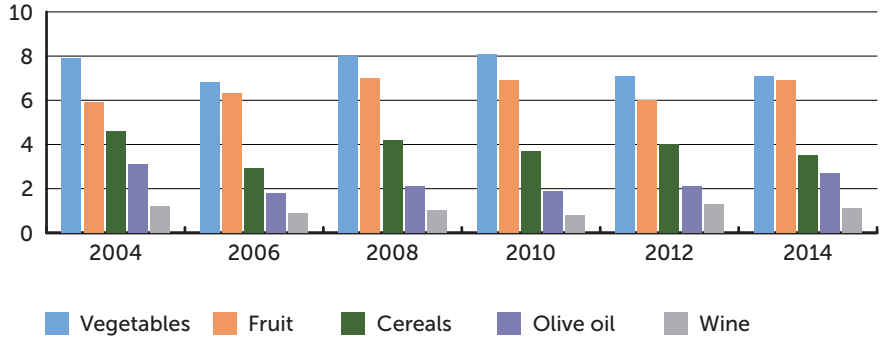
Agricultural production has gradually increased. Between 1990-92 and 2002-2004 this increase was the third largest of the OECD countries, behind New Zealand and Mexico, and ahead of the United States and France (OECD 2008).

Agricultural production reached a value of 42.3 billion euros in 2014. Plant production represented 58% while animal production represented 38%. Among the main crops produced by Spanish agriculture were vegetables, fruit, cereals, olive oil and wine, reaching almost 90% of the value of Final Agricultural Production (MAGRAMA 2015a).

Spain is in third place as an agricultural producer in the EU, after France and Italy, and contributes more than 12.5% of all the fruit and vegetable production in the community market, while French and Italian production contributes 19% and 13% respectively (European Commission 2011). In 2015, the production of the fruit and vegetable sector amounted to 17 billion euros and represented 65% of final plant production, whereas in 2002 it had been 55% (MAGRAMA 2016). Moreover, one can foresee a growing trend in the sector's contribution to agricultural production due to the sustained increase in exports. Nevertheless, one can see that internal sales have decreased in certain varieties of fruit; this is the case with apples, where 50% of supermarket sales are from imports (FEPEX 2016).

67 The part of chapter 3 corresponding to Spain was written by Jourdy Victoria James.
68 For more information see: http://webs.ono.com/2geografia/temas/agricultura_caracteristicas.pdf (accessed 2 February 2017).

Figure 3.6 Spain: Principal agricultural crops (2004-2014, in billions of euros)



Source: Compiled by authors with data from MAGRAMA 2015a.

The Autonomous Communities that are most prominent in fruit and vegetables are Andalusia, Aragon, Catalonia, Castilla-La Mancha, Valencia, Extremadura and Murcia.

On the other hand, cereal production has decreased. In 2014, cereals made up 14% of agricultural production when they had been around 24% in 1952 (Molinero 2006; MAGRAMA 2015a).

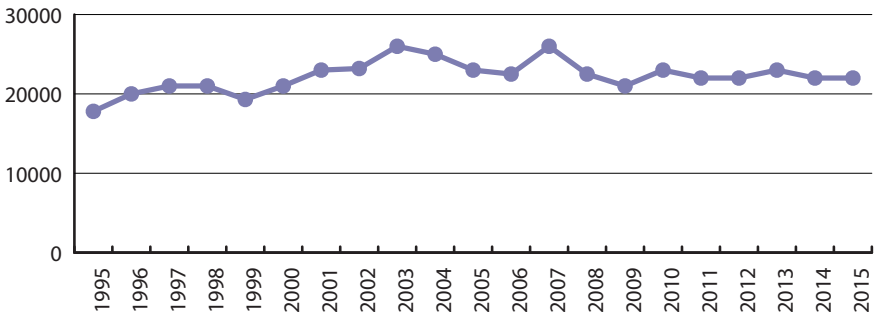
In addition, agriculture has become specialised at regional level and by function. There are two types of cultivation: dry and irrigated. In dry cultivation, the value of the production represents 45% of the total, while irrigated accounts for 55% (Molinero 2006). In Spain 3.54 million Ha. are irrigated (7% of the surface area of the country and 14% of the useful agricultural area, SAU) (MAGRAMA 2013b). Irrigation in Spain is more prevalent (19%) than in the EU as a whole (9.4%) (Compés and García 2009).

Both intensive and extensive irrigation have become more widespread.[69] There is minimal irrigation in the north of the country, and more in the area with a Mediterranean climate. Water shortages and more environmental regulations concerning its use will encourage a trend towards less use of water, which is why the current Spanish policy on irrigation has focused on modernising those that already exist.

69 Intensive irrigation is in the open air or in greenhouses, and is used for fruit and vegetables; extensive is that used to supply one single harvest, of the same type as the neighbouring dry cultivation but with a much greater yield.

Between 1995 and 2015 agricultural revenue[70] has maintained a value below 30 billion euros per year on average, and above 20 billion. Subsidies accounted for 25.7% in 2008 compared with 2.1% in 1990 (Marzetti 2009). Ten years before Spain entered the EU, increased agricultural revenue was mainly achieved through the evolution of the agricultural prices system (received and paid). When it was incorporated into the EU the opposite occurred; the determining factors in agricultural revenue were farm subsidies and work productivity.

Figure 3.7 Spain: Agricultural Revenue (1995-2015, in millions of euros)



Source: Compiled by authors with data from MAGRAMA 2015a

From 2007 to 2014, agricultural revenue fell by almost 17%. In 2015 there was a slight upturn of 1.7%; nevertheless, production costs reflected an increase of 46%, while the level of debt in the sector was 74% (INE 2015). The evolution of agricultural revenue has been in line with weather conditions, agricultural production and the increase in intermediate production costs.[71]

Employment and salaries

In Spain, similarly to the EU as a whole, the fall in numbers in the active agricultural population has been considerable, declining from 50% of the active population in 1950 (over five million) to 4% today (one million workers). Even so, this level of active agricultural population is higher than the average for Western Europe.[72]

70 This macro-magnitude is different from the "Farmers' revenue", which could be defined as the income available to people whose main activity is agriculture or to homes whose main provider is working in farming (Marzetti 2009).

71 See the newspaper El País – Online edition, 29 December 2015. Available at https://www.elpais.com (accessed 2 February 2017).

72 For more information see: http://webs.ono.com/2geografia/temas/agricultura_caracteristicas.pdf (accessed 2 February 2017) and Farm Structure Survey 2013-Main Results, Eurostat, November 2015. Available at http://ec.europa.eu/eurostat (accessed 2 February 2017).

In the Spanish interior there is great heterogeneity; for example, the active population varies from 1% in Madrid, Catalonia and the Basque Country to 10% in Galicia and Extremadura. This difference depends on the greater or lesser degree of modernisation of the regions and the climate conditions, on nature and the soil, as well as the type of farming and the crop, among other things.

Around 40% of agricultural workers are over 50 years of age. Farm owners mainly belong to the oldest sector, with 59% being over 55. Family farms predominate and account for 73% of agricultural work (performed by the farm owner and their family). In three out of every four farms, the owner and their family carry out the work (Eurostat 2016).

Around 13% of agricultural work is wage labour and permanent, whereas 14% is comprised of part-time or temporary farm workers. Young farmers under 35 years old, make up 4% of the total farms and have just over 6% of the land (INE 2015).

The index reflecting the level of wages has increased. Between 2006 and 2007, this index increased three times compared to 1985 (the base year), going from 319.4 to 374.3 for the stated period (INE 2015). An increase was observed in the temporary work index to the detriment of permanent salaried work (see Figure 3.8).

Figure 3.8 Spain: Wages in the agricultural workforce

Source: Compiled by authors with data from INE 2015

Salaried work across all farms has incremented. Between 1987 and 2007 it increased from 21% to 33%. The increase in salaried workers in Spanish agriculture is in line with structural adjustments in agriculture ("that is, the gradual disappearance of farms and the increased average size of those that remain", translated from Spanish, Moreno 2014:51), a process which has been gaining pace in Spain since the 1990s.

Changes in the structure of agricultural holdings

Spain is one of the nations that use a considerable percentage of their territory for agriculture, and it is classified as the driest country in Europe and the most vulnerable to desertification. Between 40% and 50% of arable soils have medium or high rates of erosion.[73] The total surface area is 50.5 billion Ha. Of these 38% is wooded with trees, bushes or scrubland, 34% is land under cultivation, 19% is given over to pasture and the remaining 9% relates to other uses (neither agricultural nor forestry). The average surface area per farm of all types is almost 32 Ha. (MAGRAMA 2015a). Those owning their own farm, with 60% of cultivated land being a direct holding, dominate Spanish agriculture, although in recent decades tenancies have increased. Around 61% of owners of agricultural land are over 55 years old and they control 51% of the total agricultural area, 33% on farms smaller than 5 Ha., and 22.4% larger than 500 Ha. (Soler 2015). As for the national average, women own 23% of the land, but in the Community of Galicia this rises to 47%. More specifically, on farms of under 5 Ha., 60% of owners are women; among the young the figure is only 6.6% and for those over 55 it amounts to 51% (Soler 2015).

On the other hand, land prices went up from 1994 to 2007 – an increase that has slowed down in recent years. In 2007 its value was 11,070 euros per hectare, but in 2012 it went down to 9,705 euros. The average price of dry farmed land is approximately 7,364 euros, and that of irrigated land is 24,097 euros (Cebrián 2014).

In particular, the number of farms went down to 965,000 in 2013 after having been at almost 3 million in 1962. Farms concentrated in numbers and increased in their average size (MAGRAMA 2015a). Between 2000 and 2010, the number of farms decreased by 23.2%.[74] Farms were extended and nowadays they occupy most of the arable land while the small ones are disappearing. Lately around 60,000 farms have controlled 30% of the UAA of Spain (Moreno 2014).

Spain makes up 13.9% of the UAA of the EU and contributes 11.4% of the Final Agricultural Production, the lowest ratio in the EU (Compés and García 2009). The average UAA per farm is 25Ha. and it has reduced by 9.2% over the first ten years of this century, that is, 659Ha. have disappeared per day (MAGRAMA 2015a).

73 Calculations made by the National Action Programme to Fight against Desertification (PAND) of the Ministry of Environment, Rural and Marine Affairs; OECD; European atlas of soils and Atlas of Agrochemical contamination.

74 For more detailed information see Agronegocio 2016.

Table 3.6 Spain: Number and surface area of farms

	Units	1962	1972	1982	1989	1999	2013
Total no. of farms	Thousands	2.935,0	2.571,1	2.375,3	2.284,9	1.790,2	965,0
Usable Agricultural Area (UAA)	Thousands of Ha.	21.210,0	21.885,8	19.626,4	18.380,9	26.316,8	23.300,2
Total surface area	Thousands of Ha.	44.647,9	45.702,7	44.311,8	42.939,2	42.181,0	30.042,2

Source: Compiled by authors with data from INE 2003 and MAGRAMA 2015a.

Smaller farms, known as 'minifundios', which have fewer than 10 Ha., make up 68.2% of properties, yet they occupy only 10.5% of the land. They also present problems of economic yield except for Mediterranean market gardens where intensive high-yield agriculture is practised (Sánchez 2016).

Large farms (over 100 Ha., known as 'latifundios') account for 5% of properties and take up 56.8% of the agricultural surface area. They are mainly concentrated in Extremadura, Andalusia, La Mancha and Salamanca. Medium-sized farms (between 10 and 100 Ha.) are found in Catalonia, Navarre, the Basque Country and some parts of Castile and León (Sánchez 2016).

Modernisation and agricultural yields

From the 1960s agricultural activities became increasingly mechanised and there was notably greater use of fertilisers and plant protection products, as well as technological advances (greenhouses, sanding, drip irrigation, seed selection, among others).

Intermediate agricultural production has increased to the detriment of final agriculture. That is, agriculture has become highly dependent on the supply of those intermediate goods or the usual methods supplied by the rest of the production apparatus. Mechanisation has increased and sometimes goes beyond what is necessary, bearing in mind the size of the farms. In general each family owns its own machinery and the agricultural cooperative is not very developed, with a greater presence in the agri-food sector.

Around 18% of the agri-food cooperatives in the EU belong to Spain. The Spanish cooperative regime in this sector includes approximately 1.2 million members, and 96,000 direct jobs, and contributes 60% of the final agricultural production (Arcas

et al. 2016). Spanish agri-food cooperatives, as in the rest of the EU, have been through a process of business consolidation, yet this is insufficient if one compares it to countries like Denmark and Holland. Between 2009 and 2013 in particular, the number of cooperatives decreased by 2.6%. Moreover, some 73% of them contribute 13% of total turnover, while the remaining 27% contribute 87% (Arcas et al. 2016).

Similarly, the use of fertilisers has increased, mainly in irrigated farming. In 2013, the index of prices paid[75] for fertilisers was 163.7, when the average total of intermediate consumer goods and services was 139.5, and that for machinery and equipment was 124.6 (MAGRAMA 2015a).

The use of improved seeds and genetically modified crops has been introduced with the aim of greater resistance to climate phenomena (droughts, freezing, etc.) as well as to pests. Similarly, new techniques are being used, such as mulching, sanding, the use of greenhouses and hydroponic cultivation.[76]

On the other hand, since 1986, when Spain entered the EU, it has become significantly more open to the outside and fully integrated into the internal market of the community. As a consequence, trade quotas have increased. Today Spain is the main exporter of fruit and vegetables in the EU. 47% of this type of produce goes to export (MAGRAMA 2015a). Subsequently, the sale of meat and oils has also featured. In 2015, exports reached a record 13 million tonnes, with a value of almost 12 billion euros (FEPEX 2015). Among the principal products sold in this sub-sector those that stand out are greenhouse crops (tomatoes, peppers and cucumbers), citrus fruits and peaches and nectarines. As far as vegetables are concerned, Spain heads global sales of broccoli and produces 35% of all exported broccoli in the world, worth more than 200 million euros.[77]

75 These are the prices paid by arable and cattle farmers for the means of production when they begin farming, and include transport, but not grants or subsidies. It is calculated using the Laspeyres formula, with fixed weightings for the base year, with prices for the current period and in the base year. These indices enable us to know how the evolution of prices has influenced the economic results of the agricultural sector (MAGRAMA 2015a).

76 Mulching involves covering the ground with strips of plastic. Sanding involves covering it with a layer of manure and another of sand on top. Greenhouses are fixed structures covered with plastic, which produce a warm, humid micro-climate, accelerate the ripening of products and make several harvests per year possible. Hydroponic cultivation, or cultivation without soil, holds down the plants' roots with gravel, sand or ash, and feeds them with solutions of inorganic salts. It is particularly used in growing flowers. For more detailed information, see: http://geohisto-g.blogspot.com/2011/09/tema-5-los-espacios-del-sector-primario.html (accessed 2 February 2017).

77 For a more detailed account see: http://www.redagricola.com (accessed 25 May 2016).

Agri-food industry

In Spain the agri-food industry[78] performs a key role among all economic sectors, occupying first place within the industrial sector. Moreover, it accounts for over 8% of GDP and employs over 2 million people (MAGRAMA 2015b).

The agri-food industry is made up of more than 28,000 businesses, mainly small and medium size (SMEs). Of these businesses, 96.3% have fewer than 50 employees and 79.6% have fewer than ten workers.[79] Their sales amount to 93.3 billion euros (MAGRAMA 2015b). This sector has a high level of administrative intervention, and it is very constrained by the CAP, which not only delineates the institutional context of agriculture, but also of the whole food industry (Jordana 2009; Hyvönen and Kola 1998; Forsman 2004).

Spain is in fifth place as a net exporter in the industrial sector of the EU, after Germany, France, Italy and the United Kingdom. Agri-foods exports represent 17% of Spanish foreign trade.[80]

Among the main agri-food products exported are olive oil, preserved vegetables, pork and wine. The most typical imported products are oils (other than olive), various prepared foods, vegetables, cheese, sugars and confectionery.

3.5.2 Evaluation of the CAP reforms and their effect on the Spanish agri-food sector (2007-2014)

With Spain's accession to the EU in 1986, Spanish agriculture obtained access to a large market of almost 500 million consumers and was subject to a set of market regulations, prices, assistance and subsidies from the CAP – a new scenario with opportunities and challenges for the Spanish agricultural sector.

The CAP contributes more than 5,100 million euros to Spanish agriculture (45 billion euros to the EU as a whole) (MAGRAMA 2008). Spain is in second place after France as the country that benefits the most from the EU's aid to agriculture. European CAP subsidies provide, on average, 27% of the revenue of the agricultural sector. Andalusia, Castile and León, Castilla La Mancha, and Extremadura are the regions that receive most aid from the CAP (Extremadura21 2016).

78 This is the industry that processes food for human and animal consumption (Lienhardt 2004), and is responsible for transforming agricultural products into foods ready for consumption (Albisu and Gracia 2008).

79 Only 3.6% of businesses have more than 50 employees (MAGRAMA 2015b).

80 For more information see: http://www.mapama.gob.es/es/prensa/noticias/, published 30 March 2015 (accessed15 February 2017).

Spain has enjoyed guaranteed trade in the face of competitors from outside the EU, thanks to the principle of Community preference. Economic subsidies for rural tourism and improving infrastructure have also played a significant part. Through the CAP, change towards a more intensive production model was intensified. In particular, between 1985 and 1996, consumption of intermediate products per unit of surface area increased by 30% (Compés and García 2009).

The various subsidies reinforced imbalances in the Spanish territory, benefiting the best intensive farms with high yields as against the more depressed and uninhabited areas of the interior; the 'minifundio' co-existed in terms of farm ownership.

However, when the McSharry reform was applied in 1992, the intensification of Spanish agriculture decreased, resulting in annual growth of work productivity, measured in terms of gross added value per Annual Work Unit (AWU)[81] in real terms, of only 0.3% for this period (Compés and García 2009). With the 2003 reform, subsidies linked to production in Spain reduced by 20% during the period 2004-2007.[82] Direct payments per hectare decreased and in 2007 they were at 15%, below the European average. In 2007, the single payment accounted for 30% of the total subsidy (MAGRAMA 2008).

The Spanish Agricultural Guarantee Fund (FEGA), responsible for managing and coordinating the Single Payment Scheme with the autonomous communities, stated that 74% of farmers received only 15% of the total payments in 2011, which gives evidence for the heavily concentrated aid (Blanco and Bardají 2014).

As regards the Single Payment Entitlement per hectare, the average value was lower than 200 euros per hectare in Madrid, Asturias, Cantabria and La Rioja; however it amounted to more than 400 euros in Murcia and Andalusia (Blanco and Bardají 2014). This implies that Spain has a significant amount of surface area that does not attract the single payment; for example fallow land,[83] fruit and much of the vineyards. Inequalities between payments per hectare of UAA and actual payments are greater in Spain than in other European countries. They amount to 202 euros and 285 euros respectively, whereas in France the figures are 294 euros and 300 euros and in the United Kingdom they are 212 euros and 229 euros respectively. Such differences

81 An AWU equals the equivalent work performed by a full-time worker over one year (228 days or 1826 hours according to the 1999 Census).

82 Nevertheless, they still accounted for approximately 45% of aid to the farmer, and were 7% above the European average (OECD 2008).

83 Fallow land involves allowing the land to rest for a time, during which time it is ploughed so that it takes up moisture better and weeds are removed, as a way of improving the soil. For more detailed information, see: http://geohisto-g.blogspot.com/2011/09/tema-5-los-espacios-del-sector-primario.html (accessed 2 February 2017).

stem from productive diversity and the existence of large surface areas with no historical entitlement to payment (Blanco and Bardají 2014).

Spain and the CAP Reform of 2013

The new structure of direct aid involved giving up historical rights and introducing a regional model and it proposed gradual convergence up to 2019.

Against the background of budgetary cutbacks, Spain obtains 47.5 billion euros throughout the period 2014-2020, a sum greater than that of 2007-2013. Of this amount, 35.7 billion euros are for direct payments, 8.3 billion euros are for rural development and 3.5 billion euros are for market measures (MAGRAMA 2014b).

In Spain, for the basic payment the regionalisation model is used which is established in agricultural areas by considering four types of surface area: dry, irrigated, permanent cultivation and pasture. The purpose is to maintain the current situation and avoid increasing imports. The regionalisation method is effective in reducing transfers of direct payments between producers; however, there are regions where such handovers are inevitably considerable, for example, areas with land under permanent cultivation. Moreover, the regionalisation model is made up of 24 regions, drawn up according to their level of aid, and they contain different types of surface area. It is a matter of reducing convergence in amounts of aid and facilitating the transfer of rights between beneficiaries.

Transfers of funds between the two pillars of the CAP have been stopped. From 2015, the surface area to which direct aid is allocated has been reduced to 22.3 million Ha. (around 40% of the total surface area) and the minimum limit was set at 300 euros for 2017 (100 euros in 2015 and 200 euros in 2016) (Caja Rural Burgos 2015). The active farmer in Spain is the one who obtains 20% of his agricultural income (agricultural activity plus direct aid) from the sale of his agricultural production and the provision of services and related work.

Green payments or greening is set out in Spain as a percentage of the basic payment per farmer. The objective is that the sum of the basic payment plus the green payment should be similar to the amount received by farmers under the single payment scheme. This payment is made directly to farms growing rice, citrus and other fruits. It also goes to farms with areas dedicated to woody crops such olive trees and dried fruits (COAG 2015).

In 2015, the green payment budget reached 1,453 million euros, and it will increase to 1,468 million euros in 2019.[84] According to FEGA, in 2015, the first year it was applied, the results of the green payment were satisfactory in terms of the environment and the increase in biodiversity. Despite the fact that the surface area did not change, the number of crops increased compared to 2014, especially protein crops and grain legumes (beans, vetches, sainfoin, among others), as did the amount of fallow land.

The subsidy for young farmers at the start of their career is important to the development and competitiveness of the sector in Spain. With the objective of encouraging participation, Spain devotes up to 98 million euros per year to grant additional payment (25% of the basic payment) to young farmers under 40 years old.[85]

Moreover, for young people it is not necessary to be a beneficiary of aid from the second pillar in order to obtain this extra payment. Generally speaking, young people are entitled to receive aid by being incorporated into the framework of Rural Development and Basic Payment of the National Reserve, a complementary subsidy for five years, given as direct aid and as tax relief when they declare their income.

For coupled payments, 12.08% of the total amount of direct payments is allocated to coupled aid. 84% of voluntary aid goes to the beef cattle, sheep meat, dairy cattle and goat sectors (COAG 2015).

In addition, the number of Ha. receiving payments is equivalent to the surface area that received subsidies in 2011. In this sense the average of direct payments is similar to that of the previous period 2007-2013, around 229 euros per Ha. per year (López et al. 2013).

Generally speaking, the limits introduced have had less impact on the budget, taking account of the criterion that direct payments may not increase the imbalance in income distribution between farms. Spain is therefore situated in the group of countries with specific, systematic knowledge of the risks and challenges the agricultural sector has faced for over 25 years (Garrido and Bielza 2008).

84 For more details see http://www.agromarketing30.com/pago-verde-greening-pac (accessed 2 February 2017).
85 For more details see http://www.asajacyl.com/extras/leon/.../INFORME_NUEVA_PAC.pdf (accessed 6 June 2016).

Table 3.7 Spain: Sectors which will receive coupled payments (2015-2020)

Sectors	Amounts (thousands of euros)
Cattle for fattening	40.1
Dairy cattle	93.5
Goats	13.6
Industrial tomatoes	6.4
Nuts and locust beans	14.0
Protein crops	44.5
Quality vegetables	1
Rice	12.2
Sheep	154.8
Suckler cows	187.7
Sugar beet	16.8
Total	584,9
Porcentaje de pagos acoplados	12.08 %

Source: COAG 2015

Spain, rural development policy 2014-2020

For the period 2014-2020, Spain allocated community funds amounting to 8,291 million euros for rural development, of which the same amount as the EAFRD grant to Spain for the period (8,053 million euros) was shared among the autonomous communities, with 238 million euros reserved for a national programme of rural development.[86] The national rural development programme will include the National Rural Network, the European Alliance for Innovation and promoting cooperative integration and support for priority associate bodies. They will study the possible inclusion of other measures (COAG 2015). Spain introduced a stabiliser of maximum losses of 10% compared to the situation in the previous period (2007-2013) with the objective of ensuring that funds intended for the autonomous communities which demonstrate adequate implementation of their financial path do not diminish. A further aim is to guard against the possible disadvantages which could be inherent in the community indicator for the rural population, by taking account of the reality of some of the autonomous communities (Gallardo 2014).

86 Rural development programmes are co-financed. The General State Administration of Spain will co-finance 30% of the relevant national cost, some 13,100 million euros for the period. In addition, methods have been drawn up to transfer funds between programmes of rural development if there is a risk of non-implementation of the EAFRD funds allocated to each programme (Blanco and Bardají 2014).

Table 3.8 Spain: Funds for rural development 2014-2020

Autonomous communities	Allocation (in millions of euros)	% of the total
Andalusia	1.906,0	23,7
Aragon	466,8	5,8
Asturias	325	4
Balearic Islands	61	0,8
Basque Country	87,1	1,1
Canary Islands	157,5	2
Cantabria	98,8	1,2
Castile and León	969	12
Castilla La Mancha	1.147,1	14,2
Catalonia	348,5	4,3
Valencia	204	2,5
Extremadura	890,2	11,1
Galicia	889,8	11
Madrid	76,5	0,9
Murcia	219,2	2,7
Navarre	136,5	1,7
La Rioja	70	0,9
All Autonomous Communities	8.053,0	100

Source: COAG 2015

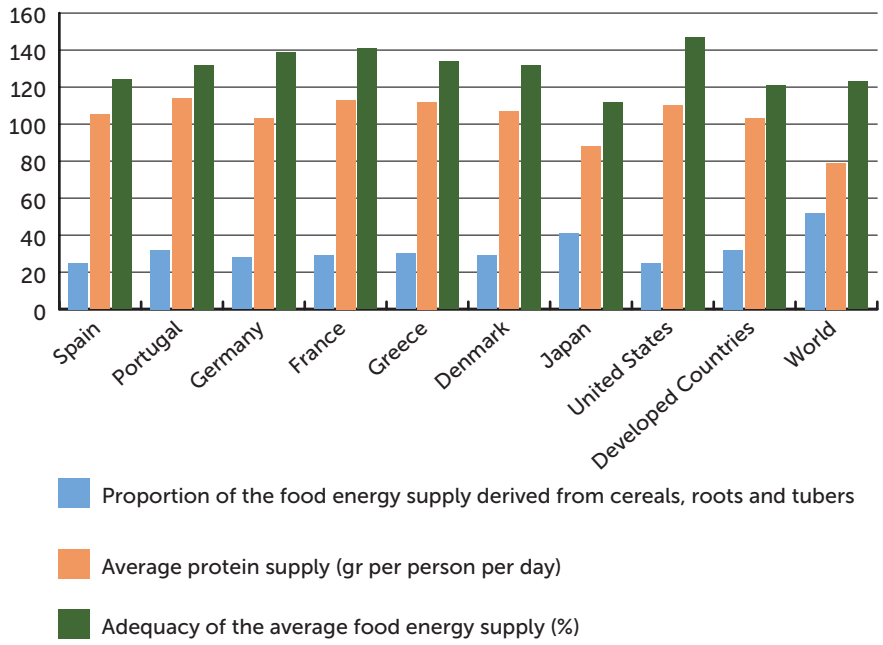
3.6 Evaluation of agri-food policies in Spain (2007-2014): the debate on Spanish food security and sovereignty

The evaluation of the impact of FNS on Spain showed the following results:

Dimension 1: availability

Spain enjoys a favourable position in terms of the availability of food. The three indicators seen in Figure 3.9 show that this country is positioned above both the average for developed countries and the world average; moreover, in other indicators such as the supply of protein of animal origin the situation is similar.

Figure 3.9 Spain: Some indicators of food availability

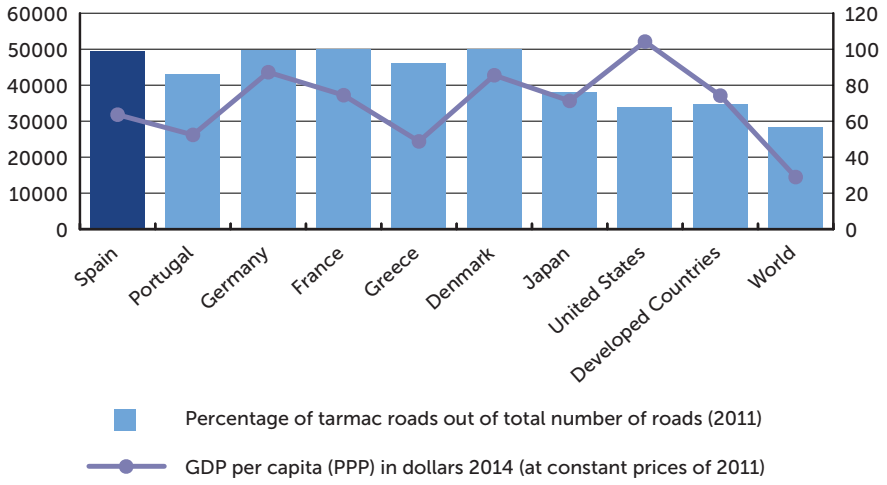


Source: Compiled by authors with data from FAOSTAT 2016

Dimension 2: Access

There is guaranteed access to food in Spain. Lack of access for economic or physical reasons is almost non-existent. The country is neither affected by food insufficiency nor by a food deficit; hunger is practically non-existent, and as far as infrastructure is concerned, 99% of the roads are tarmac and the density of railway lines is above average for developed countries (FAOSTAT 2016).

Figure 3.10 Spain and other developed countries: some indicators of access to food



The right axis refers to the percentage of tarmac roads.
The left axis refers to the value of GDP per capita in dollars

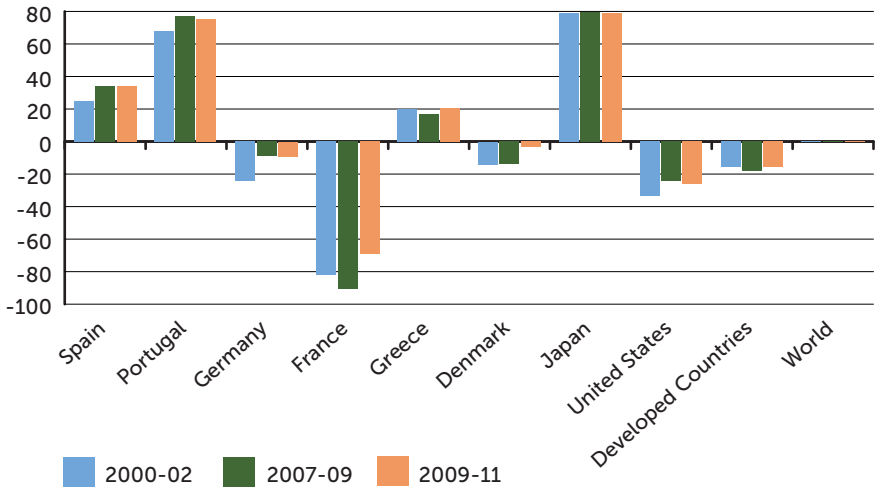
Source: Compiled by authors with data from FAOSTAT 2016.

Although the Spanish economy showed excellent growth in 2015, with a rate of increase in GDP of 3.5%, some indicators continued to behave in a negative way: in 2015, the debt level of Spanish households was 72.4% of GDP – compared with 62% of GDP for the Eurozone –, and Spanish public debt was 99% of GDP. The employment rate was almost 20% (May 2016) as against an average of 10% in the EU; employment levels fell by 3.3% between and 2009 and 2015. The deterioration in these economic indicators has signalled a certain vulnerability in the access dimension over recent years (BCE 2016; Eurostat 2016b, 2016c, 2016d).

Dimension 3: stability

In this dimension the position of Spain does not seem as favourable as in the two previous ones. Greater dependence was ascertained on cereal imports compared to other relatively more developed countries in the EU such as Germany and France, which was very much in line with the changes in Spanish agriculture described earlier, when Spain acceded to the EU and as a consequence reduced its cultivation of cereals. On the other hand, fruit and vegetables, although receiving little or no aid from the CAP, contribute the most to the Spanish FAP. Specifically, between 1990 and 2008, the total land area used for growing vegetables reduced (-29%), yet the volume of their production increased (Lamo 2013).

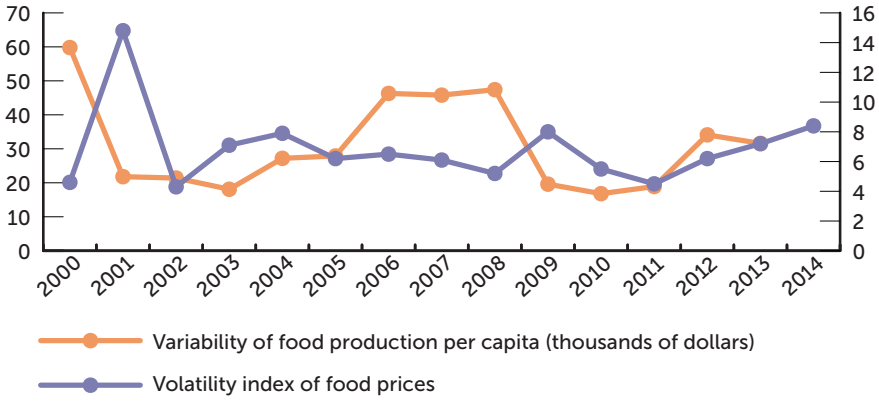
Figure 3.11 Spain: Proportion of dependence on cereal imports (compared with developed countries and the world)



Source: Compiled by authors with data from FAOSTAT 2016.

Food imports have also increased ever since the beginning of this millennium, along with the index of volatility for internal food prices.

Figure 3.12 Spain: Some indicators of FNS stability



The right axis shows the percentages corresponding to the volatility of food prices.
The left axis shows the variability of food production per capita.

Source: Compiled by authors with data from FAOSTAT 2016

In 2015, the total amount spent on the food consumption of Spanish homes was around 67 billion euros, up by 0.9% as compared to 2014, as a result of the average price increase of 2.2% (MAGRAMA 2016). Similarly, the volume of food consumed per person in households decreased by 2.2% in 2013, whereas in 2008 it had increased by 6.8%. In this sense, consumption of cereals and vegetables is below recommended levels, while fish, meat and eggs, among other things, are above the recommended level (Antesana and Vivas 2014).

Dimension 4: use

In Spain there is 100% access to sources of treated water and sanitation services. Indicators such as the percentage of children under five suffering wasting, stunted growth or being underweight have not been seen at all in the statistics. A similarly favourable situation could be ascertained in the non-existence of anaemia among pregnant women and children under five, among other indicators (FAOSTAT 2016).

The crisis has implied an increase in the consumption of products of poor nutritional value, with a high level of processing and a high calorie content, which encourages unhealthy eating habits. For example, between 2012 and 2013 there was a 3.8% increase in the purchase of wrapped sweets (biscuits, chocolates and chocolate substitutes, and cakes). In line with this, 39% of the population in Spain was overweight and 23% had problems of obesity (Antesana and Vivas 2014).[87]

The evaluation of the four dimensions of FNS in Spain consequently reflects the need to propose other formulae which will help extend rural work, improve distribution channels and make them more equitable, and aim for food sustainability. This is in line with the rather poor results of the stability dimension. Spain has the capacity to produce all the food for its population, as it has sufficient arable land and coasts, it has diversified agriculture and the ability to change in order to feed the whole population, but it needs significant public support.

To sum up, according to FAO statistics, availability of food and access to it are not a problem in Spain. However, there is a need to protect small producers and consumers against the emergence of large marketing and distribution chains, as well as from the production of foods which are not environmentally friendly.

87 According to the World Health Organization, most of the world's population lives in nations where overweight and obesity cause more deaths than being underweight. Over 1.9 billion adults are overweight, and more than 600 million are obese, according to 2014 data. Similarly, 41 million children under five are obese or overweight. For more details see: http://www.who.int/mediacentre/factsheets/fs311/es/ (accessed 20 February 2017).

Food sovereignty in Spain

Investing in food sovereignty is becoming an essential component of Spanish agriculture; the development of a family and organic type of agriculture is an important model in maintaining the rural world and guaranteeing a social agricultural model based on sustainable farms.

Spanish agricultural organisations contribute to food sovereignty from a local perspective. They also control production, local markets and short marketing circuits, where a relationship is established between groups of producers and consumers. Nevertheless, local markets work better for perishable products (fruit, pulses and vegetables), and operate in a different manner and with greater difficulty for other products such as cereals which are produced in huge quantities (Vía Campesina 2012).

Family agriculture accounts for 70% of Spanish UAA; it is a model of socio-economic farming related to the land which facilitates its sustainable management. This characteristic differentiates it from large-scale agricultural models which are specialised and business-based (Ramos 2014).

Family farms in Spain are mainly found in the lower strata. In approximately 50% of them production is below 4,000 euros, and 75% do not exceed 15,000 euros (Moreno 2014).

Increases in international food prices and their volatility within Spain make it necessary to reinforce family farming. In particular, public policies are necessary to achieve efficient access to resources and production inputs at viable prices and with better support services.

In Spain, the 'minifundio' may become sustainable if it is modernised under a cooperative scheme. For Ferrás et al. (2004) the 'minifundio', understood as a farming system of small owners, is a way of life with its own cultural characteristics, which should be respected in the face of the growing homogenisation promoted by the process of globalisation.

In Galicia, in particular, interesting experiences with associative bodies of small family producers or family farms have been made. The "Granxa Familiar" project, for instance, has worked towards the marketing of agricultural products of family origin though the Internet. The Internet was used to link customers in urban areas with family producers in the rural areas of Galicia. In so doing, intermediaries were eliminated, income went directly to the family producers, and self-reliance was increased (Ferrás et al. 2014:273-274).

Spain has been the first country in Europe and the eighth at world level in terms of surface area of organic cultivation. The consumption of organic products is a necessity within the EU and in Spain in particular. For Spain, the integration of its agriculture into the world market and its accession to the EU led to increased production for export and to the importing of basic products for the internal market. Consequently, over 60% of Spain's soya and chickpeas have been imported and around 80% of Europe's genetically modified crops were concentrated in Spain (Miramón 2013).[88]

Around 80% of Spanish production of this type of product was sold to EU countries, including Germany, the Netherlands, France and the United Kingdom. However, the national consumption of organic products was less than 1% of the amount spent on food by the Spanish.[89] Moreover, organic agriculture displayed a lower and more scattered percentage of farmers compared to total agricultural activity and was situated in areas of low productivity.

At national level, Andalusia was the leading Autonomous Community in terms of agro-ecology, followed by Castilla La Mancha and Catalonia. The organic surface area of Spain was made up of 1.7 million hectares. Fruit, citrus fruit, vineyards and olive groves constituted 29% of organic farming while cereals, legumes, oilseeds, industrial crops and fodder represent 14%.[90]

Control of organic agriculture has been heterogeneous because it is decentralised and each Autonomous Community holds competency for this area, respectively. It has also suffered from a lack of information and training for farmers to enable them to convert their farming systems to organic farming, as well as a shortage of sufficient inputs for its development (scarcity of organic material in some regions, lack of certain types of fodder for cattle farming, problems accessing reproductive vegetable material, among other things).[91] In this sense, Spanish organic farming has required greater support, beyond the current agro-environmental assistance which only reached a small number of farmers, largely because of a lack of funds in the Autonomous Communities to be used on alternative methods of rural development. Indeed, in 2012, in the conference on the CAP and Food Sovereignty at the Committee of the Regions, as part of the European movement following the Nyéléni Europe Forum (2008), the objective was set of continuing to work to achieve Food Sovereignty in Europe. To this end a set of initiatives were developed in Spain including the Alliances for the People's Food Sovereignty (ASAP), GMO Free Zones and Shared Responsibility Agriculture (ARCo).

88 For more details see: https://www.fundaciontriodos.es/ (accessed 13 June 2016).
89 For more information see: http://www.ecoticias.com/, published 22 February 2012 (accessed 2 February 2017).
90 For more detail see: http://www.mapama.gob.es/ (accessed 17 February 2017).
91 For more information see: http://www.ecoticias.com/, published 22 February 2012 (accessed 2 February 2017).

The objective of the ASAPs has been to recover the rural world through the interaction of a movement of societies in defence of Food Sovereignty as well as the construction of an agri-food system focused on local and agro-ecological principles (García Faure and Gago Menor 2011). The intention of this initiative has been the drafting of proposals for policy action.

The number of GMO Free Zones in Spain has increased; in 2006, over 30 municipalities were declared GMO Free Zones, in 2014 this number rose to 180, mainly found in Navarre, the Basque Country, Galicia, Andalusia, Catalonia, and Madrid, as well as in other regions. Altogether in 2014, 400 municipalities authorised genetically modified organisms – mainly in Aragon, Catalonia, Extremadura and Andalusia (García Faure and Gago Menor 2011, Greenpeace 2015).

However, growing genetically modified crops in Spain has caused acrimonious debate, among other reasons because no coherence existed between data offered by the municipalities and the government. Moreover, there were regions with undeclared genetically modified crops; so many crops became contaminated because it was impossible to determine their origin. For example, in Catalonia, the community with the second largest amount of GM farming, many municipalities have declared themselves to be a GMO Free Zone, but given their geographical proximity to areas of Monsanto Maize, they have run the risk of becoming contaminated (Gubin 2015).

ARCo, in turn, has been a COAG project aimed at strengthening direct relations between producers and consumers, thereby reducing the costs of transport and refrigeration, among other expenses (García Faure and Gago Menor 2011; Paz con Dignidad 2011). It's core issue has been to not becoming dependent on large marketing and distribution chains. In Spain there have been tens of thousands of producers across nine communities involved in this initiative. For example, in Almeria some local supermarkets have been opened that were directly managed by farmers. Similarly, in Huelva markets and small shops for direct sales have been set up in several municipalities with the aim of bringing consumers closer to the organic produce of the area (Manetto 2009).

In 2012, COAG launched the online sales platform for local, sustainable products to promote products with high added value from family farms.[92]

All in all, in Spain the specific requirements of organic production should be taken into account, whether through CAP grants or some other type of public policy, to favour the strengthening of the rural environment, the decentralisation of the the food distribution system and democratic decision-making concerning the rural heritage.

92 For more detailed information see www.arcocoag.org (accessed: 2 February 2017).

4. CONCLUSIONS AND RECOMMENDATIONS

The current world agri-food system is asymmetrical and a result of the logic of expansion and accumulation of large trans-national companies in the sector, it relegates problems of access, availability, stability and use of FNS to second place. International trade presents the double standard of protectionism in developed countries as against trade liberalisation in developing countries. It is a system that excludes traditional farming knowledge and resources, and so could lead to problems of sustainability and recurrent food crises. In this sense, food security and sovereignty are effective to the extent that there is real autonomy on the part of governments allowing them to design their own food policies. In the context of openness and globalisation, the reformulation of public policies is forging ahead via the reinforcing of local/regional capacity in terms of food stability. However, the concepts of food and nutrition security and food sovereignty are in need of a closer articulation, and a better definition of local matters in the face of the international dimension.

This study points to three fundamental conclusions for reflection on possible reforms of public policies concerning agricultural and rural development, and as a basis for future research into FNS in both regions:

Firstly, in Latin America and the Caribbean, the food crisis (2007-2008) unleashed a set of concerns and decisions targeted at overcoming it. As a result, the region made progress in reducing malnutrition over recent years, focussing its efforts on the design of new agri-food policies. Nevertheless, this result is not uniform and agriculture continues to be relegated to second place as against the promotion of exports, industrial and technological development and services in LAC. In the Caribbean, food insecurity prevails whereas other countries in Latin America face malnutrition. Structural problems of access to resources (water, land, education, health, basic infrastructure and markets) in LAC make up one of the main barriers to achieving FNS, especially in respect of the dimension of economic and physical access and that of availability. Regional experiments in the area of food sovereignty

offer some local responses to these problems. Other strategies capable of linking the national production of traditional products and non-traditional products for export show the States' ability to act whilst dealing with trade liberalisation, based on an understanding of its threats and opportunities.

Secondly, the CAP in the EU initially transformed food shortage into abundance, but it favoured an agri-food system that increasingly distanced producers and consumers and consumed huge quantities of fossil fuel and water, which depended on a growing amount of agrochemicals. Successive reforms reduced support for agriculture more and more and broadened the role of farmers in rural development, beyond the mere production of food. To this end, aid is given for the development of sustainable agriculture, reforestation, early retirement or an annual allowance not linked to the surface area assigned, ecotourism, and more. Still, it continues being a protectionist policy for specific European agricultural products (cereals, sugar beet, etc.). Currently, for Spanish farmers, the CAP does not have the same importance as it did at the time of accession to the EU. The decrease in subsidies, together with the incorporation of the Eastern countries into the community, affected the performance of Spanish agriculture and that of other countries with similar agricultural sectors. Strictly speaking, the Spanish agricultural system depends on European decisions in respect of the CAP. Some aspects of its reform do not favour small and medium producers, as is the case with uncoupled aid. Marketing and distribution channels continue causing problems for small producers in the EU, and they present one of the principal arguments for supporting food sovereignty in the region. Similarly, the integration of Spanish agriculture into the world market, since its accession to the EU, has encouraged an increase in production for export and the importing of basic products for the internal market where environmental sustainability and access to land have turned increasingly difficult for smaller producers.

Thirdly, the comparative study of Cuba and Spain presented in chapter 3 points to very similar FNS indicators, – despite profound differences in their economic and political systems. In particular, although Cuba experienced a severe crisis because of the fall of the Socialist bloc from 1989, exacerbated by the North American blockade, it displays very similar FNS indicators to developed countries, largely thanks to public policies concerning the primary sector. Since the 'Special Period in Time of Peace' which began in 1990, Cuba has felt obliged to develop a set of initiatives to achieve food security and sovereignty promoted by academia and the State. To this end, urban and peri-urban agriculture, the farmer-to-farmer movement, and the gradual process of handing over land in usufruct, have enabled small producers to participate in the national production of food by interacting more directly with consumers in urban and rural areas. However, insufficient national food production

continues to render the country vulnerable to external shocks and requires large amounts of currency for imported food despite the fact that around 40% of products could be produced nationally and competitively.

Spain has the capacity to produce all the food required for its population as it disposes of sufficient arable land and coasts and a diversified agriculture. However, the CAP and its reforms have created the need to propose other formulae which may in practice serve to extend rural work, and some better and more equitable distribution channels. A set of initiatives is currently being developed for food sustainability; even so, family and organic farming need greater public support and the country has gradually increased its dependence on imported cereals.

The study and evidence presented lead us to formulate a series of recommendations for the design of agrarian and rural policies in Cuba, Spain and other developed and developing countries.

– This study points up the need to reassert and highlight the importance of agri-food policies on the development agendas of both regions. Can 'inward-facing' development based on the local dimension and sustainable family farming become an internal policy of rural development and food production linked to regional agrarian policy at European and Latin American level? The governments of both regions must examine the possibilities of combining local food production with the promotion of traditional and non-traditional exports. Access to land, the market, production and distribution channels are some of the aspects which need to be studied in depth in each country and region, to identify their specific qualities and design policies in line with these realities and national producers, especially in Latin American countries.

– The evidence presented shows the importance of food sovereignty as a possible beacon of development in both regions, of particular relevance to small producers, consumers, local government and farmers' movements. Approaches to food sovereignty presented in the study, such as family, urban and organic farming in Cuba and Spain may be considered examples of local/internal good practice under different agricultural strategies. In this sense, this study highlights the need to broaden the analysis of local good practice under different agricultural strategies, opening up the way to future research and debate on initiatives that are less dependent on imported food and inputs, more environmentally sustainable, and less vulnerable in the face of food crises. It is proposed that the EU encourages green growth through innovation (new technologies, development of new products, the promotion of new patterns of demand, among other ideas). In particular, in

Spain the specific requirements of organic production should be taken account of through CAP aid or with other types of public policies, on order to strengthen the rural environment and allow the food distribution system to be decentralised, and decision-making concerning the rural heritage to be made more equitable. For Cuba, the report proposes further reflections about the functioning and future evolution of urban and peri-urban agriculture, its connection to other agricultural programmes and its results in terms of the national, provincial and regional FNS of the island.

– At the same time the study highlights the importance of changes in patterns of production and land-holding which are old challenges and recurrent problems in the agriculture of Europe and Latin America. With this in mind, governments and institutions specialising in the field of agricultural and rural development in both regions should investigate the potential of markets to distribute resources and create incentives for small producers, proposing possible mechanisms for insertion and diversification. It is recommended that strategies be studied to include small producers in the more lucrative exports on the international market, taking account of the influence of multinational companies and State intervention. Public policies should be geared to the protection of small producers and consumers in the face of the emergence of large marketing and distribution channels, as well as to the production of organic food and fair trade, with the aim of achieving better territorial and social cohesion.

– Another of the recommendations proposed by the study is the need for further comparative studies to design agri-food and rural development policies in both developed and developing countries. Governments and institutions and other bodies involved in such research should all collaborate in this respect. The study shows the relevance of comparisons with countries applying similar agricultural policies within the EU and LAC. In the case of Cuba, it is recommended that comparisons be made with countries facing similar processes of transition (such as Vietnam, for example) to understand the possible routes to insertion into the international market and the possibilities of linking promotion of exports with food production for the national FNS.

– The evidence presented in the study supports the need for greater approximation between the concept of FNS promoted and defined by the FAO and accepted by other international organisations and food sovereignty as an alternative to farmers' movements in both regions: the dimensions of stability and use are more complex owing to the asymmetries of the market (national and international), climate change, inequalities in access to resources (land, water) and consumer habits

at both global and national levels. FNS policies and food sovereignty policies must both bring their internal and external scenarios closer together. The role played by agricultural exports in food sovereignty and in the international market must be better defined. Similarly, despite the FAO having evolved the way it defines food security since the 1990s, it should consider more deeply how better to combine the national dimension and the role of States in designing policies for agriculture and rural development. In this sense, both the FAO and other organisations and institutions charged with researching these themes should link the dimensions of stability, use and availability in a more specific and coherent manner, based of empirical case studies and an analysis of the state of FNS in different regions and countries.

– The report proposes a series of specific recommendations for the governments of Spain and Cuba aimed at improving their results in particular dimensions of FNS. In both countries, the dimension of stability has been affected by dependence on cereal imports, although not in the same way. It would be useful to promote further research into the (internal and external) causes and processes which have led to such increased dependence and how they have affected small local producers of basic grains in both countries.

– Finally, this study emphasises the importance of the active involvement of the national and local governments of both regions, together with the relevant ministries and other non-governmental organisations for farmers and rural development, in creating educational groups, actual and/or virtual, and designing national and local campaigns aimed at improving consumer habits. In particular, the study recommends applying a set of national actions to deal with the obesity and overweight present in its populations (which is of greater relevance for European countries).

APPENDIX

Other interesting approaches to food sovereignty

Cuba has various programmes and institutions which bear a clear similarity to food sovereignty and FNS in its micro dimension based on sustainable family farming. Since the 1980s various institutions, technocrats and academics, aware of the limits of the conventional agricultural model, heavily dependent on inputs and imports from the Soviet Union, have begun to develop an alternative paradigm based on organic farming and agroecology. In 1993 many of these specialists formed the Cuban Organic Farming Association (ACAO), which in 1997 officially became part of the Cuban Association of Agricultural and Forest Technicians (ACTAF) and received the Alternative Nobel Prize in 1999 for its work in producing food in a sustainable and family-based way during the Special Period in Time of Peace on the island. Various programmes and strategies have been developed along these lines since the middle and late 1990s, including both the local and family farming dimensions of food sovereignty. Some of them are summarised in Table 4.

Table 4 Institutions/Programmes based on sustainable family farming in Cuba

Cuban Association of Agricultural and Forest Technicians (ACTAF/ACAO)
This is a non-governmental organisation created in 1987 with a structure stretching over the 15 provinces of the country. It has 24,978 members, of whom 38% are women, grouped in 1929 grass roots organisations, and 2,441 institutional partners at national level. One of their main initiatives is urban and peri-urban agriculture. ACTAF focuses on the transition of agriculture towards ecological balance, with a gender dimension and an emphasis on participation. At the forefront of this transformation towards sustainable farming, ACAO, formed in 1993, made it possible for farmers, researchers, civil servants and academics to work together to stimulate and promote organic-based alternatives and produce food for the Cuban people (Pretty 2002). It is now made up of researchers, producers and activists promoting research into organic farming and creating a national awareness capable of supporting agriculture in harmony with people and nature. It organises numerous workshops and training courses and publishes a quarterly magazine Agricultura Orgánica (Organic Farming) as well as supporting the global conference of organic farming with the most acclaimed and renowned professionals in the world (Murphy 1999). http://www.infoagro.org/actaf.html (accessed: 2 February 2016)

Table 4 Institutions/programmes based on sustainable family farming in Cuba

National Association of Small Farmers (ANAP)
This organisation represents the social and economic interests of Cuban peasant farmers and has a social, non-governmental character,. One of its objectives is to organise and guide the Cuban peasant farmer population so they can participate in the social and economic transformation of the rural environment, boosting agricultural production and continuously increasing their contribution to feeding the population and to the agribusiness of the nation. It was founded on 17 May 1961 and has 14 provincial boards of management, 153 municipal ones and more than 3,314 grass roots organisations. This association has some 331,874 members. It is responsible for implementing and developing the Farmer-to-Farmer Agroecology Movement (MACAC) in Cuba as a member of the international movement La Vía Campesina. MACAC is a mass movement of small farmers to transform their production systems through agroecology. In this way, the peasant farmer is making increasing contributions to the total national production of food and resisting better the negative effects of climate change (for example, hurricanes), economic crises and the blockade of the island. https://www.ecured.cu/ANAP (accessed: 2 February 2016)
The 'Fundación Antonio Núñez Jiménez de la Naturaleza y El Hombre' (The Antonio Jimenez Foundation for Man and Nature)
This is a civil, not-for-profit, non-governmental organisation, continuing the legacy of Dr Antonio Núñez Jiménez through research and the developing of programmes and actions to encourage values oriented towards a culture of nature at local, national and international levels. It works alongside the Ministry of Culture to promote environmental awareness which recognises Nature as part of Cuba's identity. Among its various programmes, Sustainable Local Development stands out. This programme tries to contribute in a participatory manner to the sustainable local development of urban and rural systems, with the emphasis on their environmental dimension and the creation of a related culture, focused on Permaculture and existing community groups in five of the country's provinces as well as in new community groups in another eight provinces. It fosters the exchange of experiences, knowledge, practices and publications on Permaculture, Sustainable Agriculture and other related themes, through internships, and national and international events. It promotes dialogue between governmental and non-governmental bodies, on the challenges of sustainable agriculture in the country. And finally, it develops emergency projects to mitigate the effects of hurricanes and extreme phenomena. http://www.fanj.cult.cu/pag_fundacion/misionvision.html (accessed: 2 February 2016)

Table 4 Institutions/Programmes based on sustainable family farming in Cuba

Asociación Cubana de Producción Animal (Cuban Association of Animal Production) (ACPA)
This is a non-governmental organisation which brings together private, cooperative and state producers, scientists, academics and other institutions which accept and fulfil its respective regulations. It is made up of 30,500 individual members, 206 grass roots organisations and 334 institutional members as well as 12 societies functioning as organisations related to ACPA. It offers members assistance and information, in line with their technical and production profile. It organises producers in groups according to geographical proximity to facilitate the work, and develops activities and mechanisms to boost and improve technical and production achievement. It channels national and foreign aid for the development of cattle breeding and animal production in the face of natural and epizootic disasters. From the end of the 1990s it has focused on developing a bank/stock of local seeds of grains and legumes to promote self-sufficiency in animal feed, traditionally dependent on imported feed, especially in the COMECON countries up to 1989 (Murphy 1999). https://www.ecured.cu/Asociaci%C3%B3n_Cubana_de_Producci%C3%B3n_Animal (accessed: 2 February 2016)
Instituto Nacional de Ciencias Animales (National Institute of Animal Sciences) (INCA), University of Havana, and its PIAL programme
The National Institute of Animal Sciences (INCA) is an academic and research institution with various international projects such as Participative Plant Breeding-An Innovative Local Agricultural Project (PIAL). This programme focuses its efforts on improving seeds and disseminating organic practice among peasant farming communities. By including diversity, organising seed fairs and local markets and experimenting with different varieties, the farmers choose the most appropriate types of seed for their land and climate conditions in the different provinces of the island. Once producers see the improvements from experimenting with different varieties of seed, they organise themselves into research groups of producers. These groups have the role of promoting knowledge, social organisation, and centres for working together and exchanging ideas, which generates great flows of genetic varieties and a continuous discussion about local innovation. PIAL is the fruit of 15 years of work in the Cuban agricultural sector; it reaches 45 municipalities in 10 of the provinces of Cuba, where innovation is experienced as a social process, linked to solutions to local issues, and above all to the service of food production and the well-being of rural families. Its organisation reveals the richness of the local environment, where teachers, researchers, agricultural extension workers, producers both male and female, marketing organisations, local authorities, institutions and the government all come together. The System of Innovation recognises and takes on board the complexity of local reality on the island and adapts to the context of the places where seed has been sown to increase not only food production but also knowledge and the capacity for thousands of people to participate. PIAL is coordinated from INCA but it involves other research centres and universities, such as ANAP and actors in international cooperation, such as German Agro Action (WHH) and the Swiss Agency for Development and Cooperation (Cosude). http://www.fao.org/cuba/noticias/detail-events/es/c/329710/ (accessed: 2 February 2016)

Source: Cruz and Sánchez (2005); Murphy (1999); Ríos-Labrada (2008).

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First &Last Name	Function	Affiliation	Date	Venue/Modality
Albert Massot	Administrator of the DG Internal Policy in the Agriculture Commission of the European Parliament	Department of Parliamentary and Agricultural studies, European Parliament, Brussels	18 March 2016	E-mail
Armando Nova	Investigador Profesor	Centre for Study of the Cuban Economic University of Havana (CEEC), Cuba	26 June 2016	E-mail
Guillermo Betancourt	Researcher	National Institute Of Economic Studies (INIE) and member of the Science and Technology Commission to Implement the *"Lineamientos"*	17 May 2016	E-mail
José María García Álvarez Coque	Professor in Agricultural Economics	Universidad Politécnica de Valencia	7 March 2016	Skype
José Miguel Herrero Velasco	Director of the Information and Food Control Agency (MAGRAMA)	Ministry of Agriculture, Food and the Environment	12 April 2016	Ministry of Agriculture, Food and the Environment, Spain

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First &Last Name	Function	Affiliation	Date	Venue/Modality
José A. Gómez-Limón	Full Professor	University of Córdoba (UCO)	31 March 2016	Faculty of Law, Economic Science and Business Studies, Cordoba University, Spain
Peter M. Rosset	Researcher	Southern Border College, San Cristóbal de las Casa, Chiapas, México	16 March 2016	Skype
Rafael Bonete Perales	Full Professor of Applied Economics	University of Salamanca (USAL)	29 February 2016	Salamanca, Spain
Rosa María Gallardo Cobos	Director of the Higher Technical School of Forestry and Agricultural Engineering Full Professor	University of Córdoba (UCO)	11 April 2016	Rabanales Campus, UCO, Spain

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