

# Consumer and Producer Perspectives about Short Local Food Supply Chains in Rural Spanish Areas

---

Silvia Fernández Fernández

DIVISION OF PACKAGING LOGISTICS | DEPARTMENT OF DESIGN SCIENCES  
FACULTY OF ENGINEERING LTH | LUND UNIVERSITY  
2024

MASTER THESIS



# FIPDes

Food Innovation & Product Design

This Master's thesis has been done within the Erasmus Mundus Joint Master Degree FIPDes, Food Innovation and Product Design.



**Co-funded by  
the European Union**

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

# Consumer and Producer Perspectives about Short Local Food Supply Chains in Rural Spanish Areas

An Analysis of Consumption Habits and Preferences,  
and Market Strategic Opportunities for SLFSCs at Valle  
del Jerte and La Garrotxa

Silvia Fernández Fernández



**LUND**  
UNIVERSITY

# Consumer and Producer Perspectives about Short Local Food Supply Chains in Rural Spanish Areas

An Analysis of Consumption Habits and Preferences, and Market Strategic Opportunities for SLFSCs at Valle del Jerte and La Garrotxa

Copyright © 2024 Silvia Fernández Fernández

*Published by*

Division of Packaging Logistics  
Department of Design Sciences  
Faculty of Engineering LTH, Lund University  
P.O. Box 118, SE-221 00 Lund, Sweden

Subject: Food Packaging Design (MTTM01)  
Division: Packaging Logistics

Supervisor: Lena Krautscheid and Vitor Souza, Lund University  
Co-supervisor: Mariana Eidler, The FORK Organization/Food Design Lab  
ELISAVA  
Examiner: Pernilla Derwik, Lund University

This Master's thesis has been done within the Erasmus Mundus Master Course FIPDes, Food Innovation and Product Design.

[www.fipdes.eu](http://www.fipdes.eu)

# Abstract

This study aims to explore the impact of Short Local Food Supply Chains (SLFSCs) from the perspectives of producers and consumers in rural Spanish areas. Focused on the marginalized and rural areas such as Valle del Jerte (Cáceres, Extremadura) and La Garrotxa (Girona, Catalonia), this research employs a mixed-method approach, integrating qualitative data from interviews with supplementary survey data. Interviews were conducted with consumers, producers, and experts, while surveys targeted consumers and producers. This methodological framework facilitated a comprehensive analysis of consumption and shopping habits and perceptions of products sourced from SLFSCs.

The findings reveal that consumers in these rural areas highly value the quality, freshness, and minimal processing of food products, with a marked preference for those products that support regional economies and offer health benefits. Rural habitats from Spain highlight the importance of local shopping dynamics, favoring direct connection with food sources as it supports the local economy. From the data collected, two primary consumer profiles were identified within these rural areas, being the “Consumer Enthusiast” the target market for SLFSCs. Additionally, the data analysis from producers and experts, enabled the execution of a SWOT analysis, assessing internal and external factors that present both opportunities and challenges for the development and implementation of SLFSCs. The producers’ and experts’ interviews revealed that the main weaknesses are regarding logistics because of the need for transport to have enough demand that cover the production volume. However, the strong ties between consumers and producers enhance trust and support the viability of local food chains, due to the fair price for both actors and many other sustainable impacts.

**Keywords:** Short Food Supply Chains, Local Food Supply Chains, Sustainable Food Systems, Rural Development, Food Sovereignty, Agroecology.

“Food is not a commodity, it’s  
a human right.”

–*Pueblo a Pueblo*, (2023)

# Acknowledgments

I would like to thank all those who have made it possible for me to submit this thesis, both thanks to their administrative and emotional support. First of all, to all those who gave me the opportunity to be accepted in this Erasmus Mundus Master's in Food Innovation and Product Design (FIPDes), which has given me a very enriching experience, both professionally and personally. I am also grateful for all the people that I have met along the way and that has allowed me to become who I am today.

I would like to show my deep appreciation to those who made this thesis possible. Thanks to the organization, support and briefings by Erik Andersson and Jenny Schelin. As well as for the supervision and support from Lena Krautscheid, Vitor Souza and Fredrik Nilsson, as well as for the comments and feedback from Pernilla Derwik. Special mention to the work and help provided by Mariana Eidler during all this time, for her patience and altruism, as well as for the support of all the founders of The FORK Organization.

Special thanks to all the participants in the interviews and surveys for their time, special interest, and encouragement to contribute, which without them would have been impossible. The knowledge and research for this project come especially from all the interviewees, who have taught me and made me discover a new area of which I have complete admiration and passion to contribute.

Last but not least, I would like to thank my friends and family, who have been my main support during these months, for their immense support and encouragement. Thank you for always trusting me, for making me regain my motivation and desire, and for being my essential pillar during all my trajectory in the master's degree. Thanks to the people I have met during these two years and have remained, as well as to the wonderful friendships that FIPDes has made me create and share thousands of anecdotes, memories, and moments of hard work that in company were always more lasting. But also, to all the friends in Spain who were always there to encourage me when I needed it most and who accompanied me both in person and emotionally during these last months (Cris, Lucía, Ester, Cristina, Laia, Julia, Andrea, Sofía, Silvia, Ángeles). Finally, I would especially like to thank the immense and great support that the most important people in my life have given me, my family, Montse, Judith and Anira, without you, getting here would never have been possible.

*Lund, May 2024*

Silvia Fernández Fernández

# Table of contents

Abstract .....	5
List of acronyms and abbreviations.....	10
List of Figures .....	11
List of tables .....	12
1. Introduction .....	13
1.1 Background .....	13
1.2 Problematization.....	16
1.3 Research purpose and questions .....	16
1.4 Scope and delimitations.....	17
1.5 Relevance for sustainable development .....	18
2. Literature review .....	20
2.1 Food Systems .....	20
2.1.1 Food Systems Constituent Elements .....	20
2.1.2 Food Supply Chains .....	22
2.1.3 Short Local Food Supply Chains (SLFSCs).....	26
2.2 Sustainable Food Systems .....	27
2.2.1 Strategic Approaches in Sustainable Food Systems .....	28
3. Contextual Framework .....	35
4. Methodology .....	37
4.1 Research approach.....	37
4.1.1 Exploratory literature review.....	37
4.1.2 Research Onion Methodology .....	37
4.2 Data collection.....	39
4.2.1 Interviews .....	39



4.2.2 Surveys .....	42
4.2.3 Ethical considerations.....	44
4.2.4 Areas of Research.....	45
4.3 Data analysis.....	47
4.3.1 Analysis of results of interviews and surveys .....	47
5. Results and Discussion .....	49
5.1 Consumer's Preferences .....	49
5.1.1 Food Products Preferences .....	49
5.1.2 Shopping Place Preferences .....	51
5.2 Consumer's Perspectives and Interest for products from SLFSCs.....	52
5.3 Consumer Profiles in Spanish Rural Areas .....	53
5.4 Main Barriers and Drivers in the Adoption of SLFSCs .....	54
5.4.1 Strengths.....	55
5.4.2 Weaknesses.....	58
5.4.3 Opportunities .....	60
5.4.4 Threats .....	61
5.4.5 SWOT Analysis.....	63
6. Recommendations and further suggestions .....	67
7. Conclusion.....	68
8. References .....	71
Appendix A Interview Guides.....	77
A.1 Consumers' guide.....	77
A.2 Producers' guide.....	82
A.3 Experts' guide.....	89
Appendix B Confidentiality Agreement Model .....	92
Appendix C Survey Results.....	95
A.1 Consumer's survey results.....	95
A.2 Producer's survey results.....	100
Appendix D Cluster Diagram and Mind Map .....	106

# List of acronyms and abbreviations

AFSCs	Alternative Food Supply Chains
CAP	Common Agricultural Policy
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
GDP	Gross Domestic Product
GVA	Gross Value Added
IAASTD	International Agricultural Assessment of Knowledge, Science, and Technology for Development
LFSCs	Long Food Supply Chains
MTSCs	Mid-Tier Supply Chains
PDO	Protected Designation of Origin
PGI	Protected Geographical Indication
SDG	Sustainable Development Goals
SFS	Sustainable Food System
SFSCs	Short Food Supply Chains
SLFSCs	Short Local Food Supply Chains
SWOT	Strengths, Weaknesses, Opportunities, Threats

# List of Figures

Figure 1. The 13 principles of agroecology (right) and its levels (left).....	34
Figure 2. Contextual framework representation.. ..	36
Figure 3. Research Onion. ....	39
Figure 4. Geographical location of the region of Valle del Jerte.....	45
Figure 5. Geographical location of the region of La Garrotxa .....	45
Figure 6. SWOT Analysis .....	48

# List of tables

Table 1. List of interviewed participants.....	41
Table 2. Agroecology principles used to design the research and interviews' framework. ....	42
Table 3. SWOT Analysis.....	55

# 1. Introduction

*This introduction sets the stage for the comprehensive research that follows. Initially, a background is provided to establish the historical and current context of the issues at hand, offering insight into the complexities of food systems and their impact on local and global scales. Following this, the problematization of the study is described. Subsequently, the purpose of the research and the central questions it aims to address are outlined. These elements focus on identifying and analyzing the impact of Short Local Food Supply Chains (SLFSCs) from the users' point of view (producers and consumers) in contributing to sustainable food systems. The scope and limitations of the study are then discussed to delineate the boundaries within which the research was conducted and to highlight the potential constraints encountered during the investigation. Finally, the relevance with this study to the sustainable development is expressed through the contribution of the research with the SDG (Sustainable Development Goals).*

## 1.1 Background

To comprehend the current challenges within food systems, it is vital to reflect on their historical evolution. During the 20th century, the food production industry experienced significant changes due to mechanization and industrialization, leading to a substantial increase in the use of artificial and chemical inputs in farming, profoundly impacting traditional farming practices. This period also witnessed the consolidation of market power in the hands of major agricultural enterprises, heavily influenced by the principles of economic liberalism. It was supported and propelled by major global institutions, including the U.S. Department of Agriculture, the Common Agricultural Policy (CAP), the World Trade Organisation, the International Finance Corporation, and the International Monetary Fund (European Coordination Via Campesina (ECVC), 2018; Holt-Giménez & Altieri, 2013). Even though this transformation facilitated the transition from rural, localized operations to industrialized conglomerates, driven by urbanization, market liberalization, and increasing incomes (Kneafsey et al., 2013); the dominance of this industrial agriculture model has made it difficult for smallholders to maintain their livelihoods, as they often find themselves unable to compete with the scale and resources of large enterprises (European Coordination Via Campesina (ECVC), 2018; Holt-Giménez & Altieri, 2013).

Moreover, smallholders are not the only ones affected by the actual industrialized and liberalized food system as it has implications for sustainability and biodiversity. The increased use of artificial inputs in agriculture and a shift toward monoculture triggered changes in land usage and contributed to climate change and environmental degradation. The current food system accounts for 37% of greenhouse gas emissions and significantly contributes to environmental degradation, including water pollution, deforestation, soil erosion, and biodiversity loss (European Coordination Via Campesina (ECVC), 2018; Holt-Giménez & Altieri, 2013; Kneafsey et al., 2013).

In addition, the number of livelihoods it sustains globally cannot be ignored, which is why it influences health, overall well-being, quality of life, poverty levels, and equality through working conditions, salaries, and profits (Kneafsey et al., 2013; The Global Alliance for Improved Nutrition (GAIN), 2021). The global food system is inadequate in enhancing producers' incomes, providing nourishment, and safeguarding both human and environmental health; as approximately 811 million individuals suffer from hunger, 2.4 billion face food insecurity, and the prevalence of obesity and micronutrient deficiencies is rapidly increasing (European Coordination Via Campesina (ECVC), 2018; International Fund for Agricultural Development (IFAD), 2021). And due to the external pressures and ecological crises, the exacerbation of food-related problems becomes more acute (Manzini, 2015).

In response to these systemic failures, there is a growing consensus on the need for an urgent transition towards more sustainable food systems to establish sustainability and combat the mentioned problems (Amoak et al., 2022; Sullivan, 2023). The EU (European Union) has attempted to ameliorate these issues through market mechanisms, guidance, and subsidies aimed at bolstering the existing agro-industrial model, which continues to face significant challenges (Bingol, 2021).

Inadequate institutional support for family and peasant farming significantly contributes to the decline of the agricultural sector (European Coordination Via Campesina, n.d.). Based on Bingol, (2021), small farmers control only 25% of the resources needed for food production, small-scale peasants feed 70% of the global population. In contrast, large industrial farms, which utilize 75% of these resources, serve a much smaller portion of the food market. Within the EU, as of 2016, there were 10.5 million agricultural holdings, 65% of which were smaller than 5 hectares, highlighting the prevalence of small-scale farming. However, FAO, (2021) reported that approximately 35 percent of the world's food is produced on five out of every six farms, which are smaller than two hectares. It is important to make clear that the number of smallholders contributing to the food supply varies greatly between countries. In parts of Africa and South Asia, where smallholdings are more prevalent than on average worldwide, smallholdings account for a far higher percentage of agricultural land. Therefore, it is evident that small-scale farming is practiced by the majority of farmers worldwide. While there are plenty in countries from the global south as well, the bulk of them are in countries from the global north; and the vast

majority of the 10 million farms in the EU are small farms. In the EU, Romania is the country where more small farms were found, where nine of ten farms are smaller than 5 ha (Rossi, 2022).

Rossi, (2022) argues about the importance of improving the conditions of small-scale food producers as a global objective, as they make significant contributions to local food availability and production. Also, they provide jobs in areas where job opportunities are scarce, contributing to rural development. In the case of southern Europe, small farmers follow export-oriented systems that compete with larger farms due also to their big volume production scale. This is the example of the production of wine grapes, citrus and olives.

The absence of small peasant production support is a key factor leading to the daily disappearance of thousands of farms (European Coordination Via Campesina, n.d.). Rural areas are facing increasing abandonment as almost one-third of farms have disappeared over the past decade (Bingol, 2021). The trend forecasts a bleak future, with the number of farms expected to decrease further to 3.9 million by 2040, down from 15 million in 2003. This dramatic reduction highlights a critical challenge for rural sustainability and underscores the urgency of exploring alternative agricultural models like Short Food Supply Chains (SFSCs) that might offer viable solutions to these problems (European Coordination Via Campesina, n.d.). Rossi, (2022) highlights how short and local distribution channels can be beneficial for small farmers. These distribution channels provide a substitute for traditional, longer food chains, in which small farms face difficulties in gaining bargaining power as they are considered the most vulnerable ones to current system inefficiencies (Amoak et al., 2022; Sullivan, 2023).

Local and short food systems are growing fast, and they are an opportunity for small providers to strengthen their position by establishing a direct channel of communication with the consumer. These systems are identified as a fundamental component of assessing food sovereignty and enhancing local economies, reducing carbon emissions, promoting food security at the home level, and supporting small-scale farms and businesses (Augère-Granier, 2016; Vittersø et al., 2019).

This thesis synthesizes the historical context with the present challenges to analyze the role that sustainability plays within European food systems, emphasizing the importance of fostering an equitable and environmentally responsible food system through short and local distribution channels (Paciarotti & Torregiani, 2021). In rural and marginalized areas of Spain, such as the regions studied in this thesis, SFSCs represent a promising avenue to contribute to the improvement of food systems towards more sustainable practices (Wezel et al., 2020). By enhancing connectivity through localness and short supply chains, this research interrogates the implications for sustainability within the framework of food sovereignty, proposing the development of SLFSCs in these areas as a means to achieve a fairer food system for consumers and producers.

## 1.2 Problematization

In the exploration of the current literature about the impact of SLFSCs in rural and marginalized areas of Spain, an exploration through LUB search was conducted to identify the literature gaps and raise questions regarding the topic. When researching SFSCs 5,712 articles were found and other 6,635 about LFSCs. However, when researching about SFSCs in Spain, 196 were shown, but no information was obtained when researching about SFSCs in the rural and/or marginalized areas of Spain.

For this reason, there is a gap in the literature on the research on the impact of SLFSCs in the Spanish rural context, thus demonstrating a need and contribution to the literature with the present research.

## 1.3 Research purpose and questions

This study proposes an alternative to conventional food systems by exploring SLFSCs in rural areas of Spain, with a particular focus on exploring case studies in the Valle del Jerte and La Garrotxa. The research is based on the principles of food sovereignty and agroecology, which advocate food systems that are not only sustainable but also respect the right of people to define their own food production and consumption systems (Sélingué, 2007). By focusing on rural areas (prime sites for food production due to their rich natural resource density and agricultural practices) this study seeks to apply these principles in practical ways to strengthen local economies and improve natural resource management equitably and effectively (Gliessman, 2014).

Through the literature review, the potential of SLFSCs to improve the sustainability of rural communities, support food sovereignty and strengthen local economies through agroecological practices is investigated. Once the potential of this type of food chain has been seen, interviews and surveys are conducted to directly capture the perceptions and interests of users, including consumers, producers (dedicated to the production of fruit and vegetable), experts and stakeholders in the areas under investigation, providing an in-depth understanding of the specific dynamics and challenges associated with SLFSCs.

Therefore, the main research question of this study is:

*Are SLFSCs impactful and interesting for small producers and consumers from rural Spanish areas?*

To gain a deeper comprehension, based on the preceding main objective to analyze the impact of SLFSCs, the following research questions are raised:



1. *What are the needs and desires (concerning the products they buy and the places they frequent) of consumers in rural Spain?*
2. *Is there an interest in products from SLFSCs on the part of the inhabitants of rural areas in Spain?*
3. *What is the target market consumer profile for SLFSCs in Spanish rural areas?*
4. *What are the main barriers and drivers influencing the adoption and development of SLFSCs in these areas?*

## 1.4 Scope and delimitations

This study aims to achieve a comprehensive understanding of the impact on the sustainability of SLFSCs, from food system's users (as producers and experts) evaluating the needs and interests from consumers' point of view. Consumer behaviors and strategic market opportunities from the perspective of small producers (that grow fruit and vegetables) within SLFSCs are investigated. The research encompasses an in-depth analysis of consumption preferences and habits among rural area consumers in Spain, profiles these consumers, and develops a SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis for producers engaged in or considering SLFSCs. Furthermore, it includes a detailed mapping of the interaction between SWOT aspects and consumer preferences to address strategic market opportunities.

To effectively examine the stated objectives, expert testimony were collected through interviews, as can be seen in 4.2.1 Interviews. Also, the users of the SLFSCs were interviewed in order to examine the principal objectives and answer the main questions.

To obtain a general view of the consumption interests and habits of rural inhabitants in Spain, as well as the interests and perceptions regarding SLFSCs among farmers, two geographically distant yet comparably characteristic areas were selected. These areas are Valle del Jerte, located in Cáceres, Extremadura, and La Garrotxa, in Girona, Cataluña (named as Catalonia in English). This strategic choice was made to ensure that the results could be representative of the situation in rural Spanish areas.

One of the principal limitations encountered was the challenge of gathering a representative sample of producers' survey answers in La Garrotxa. Despite extensive efforts to collect a broad spectrum of responses, the survey yielded only 16 responses, with a single response from La Garrotxa. This limitation in quantitative data from this area could impact the depth of analysis and insights. Furthermore, due to the nature of a master's thesis and the inherent time constraints of such projects, it was not feasible to explore beyond these two selected areas. However, the focused study of these specific regions enables detailed analysis and

significant data acquisition on the similarities and differences among rural communities in different parts of Spain.

## 1.5 Relevance for sustainable development

The Sustainable Development Goals (SDGs), such as the eradication of poverty, the elimination of hunger, the promotion of good health and well-being, and the encouragement of responsible consumption and production, are closely interconnected with the issues that food systems face (The Global Alliance for Improved Nutrition (GAIN), 2021).

This study contributes significantly to ongoing efforts aimed at transforming food systems to enhance both human and environmental well-being, aligning with the broader objectives of the SDGs. Specifically, it addresses the challenges posed by climate change on food systems, which is crucial for achieving SDG 13 (Climate Action). Achieving this goal is not only pivotal in its own right but also facilitates progress towards other critical SDGs, including SDG 1 (No Poverty), SDG 3 (Good Health and Well-being) (Amoak et al., 2022).

The necessity for innovation in sustainable food systems involves multifaceted interactions across various levels, including policy formulation, cultural shifts, social movements, enterprise actions, and food production processes. This study emphasizes the vital role of innovation in these areas, highlighting the potential for food system designers and innovators to drive significant change. However, it is crucial to recognize that these transitions are often constrained by existing social and political institutions, which can inhibit change and create barriers to implementing new practices (Wezel et al., 2020). This report, from the perspective of a food designer and innovator, underscores the importance of engaging with and potentially reshaping these institutional frameworks to allow for more adaptive and resilient food systems.

Wezel et al., (2020) argue that a significant and fundamental change is necessary in the way food is consumed and the methods by which they are produced, processed, transported, and distributed in order to achieve SDG 2 of eliminating hunger and all kinds of malnutrition by the year 2030. Following the agreement on the 17 SDGs and 169 goals, which provide a comprehensive plan of action for all nations, both in the Global South and North. This transformation must be implemented across various levels to address the complex challenges arising from heightened competition and pressure on renewable resources, chronic malnutrition, rural poverty, the consolidation of power and influence in the agricultural and food industries, the escalating impacts of climate change, and the alarming decline in biodiversity. Achieving sustainable food and agricultural systems necessitates adopting a comprehensive and long-term outlook. To achieve sustainable food systems, it is necessary to have inclusive and participatory methods of guiding

innovation, exchanging information and knowledge, and promoting responsible innovation that addresses social concerns (Parasecoli, 2019). This involves collaboration across communities and networks (Wezel et al., 2009).

## 2. Literature review

*This section of the research provides a comprehensive review of the existing literature on food systems, initially introducing the concept and its key constituent elements. As an integral component of food systems, food supply chains are examined in greater depth, highlighting various types and particularly focusing on SLFSCs, which are the central element of this study.*

*Subsequently, the review transitions to the topic of sustainable food systems, exploring strategic approaches such as food sovereignty and agroecology. These concepts are scrutinized for their potential to enhance sustainability in food systems, addressing environmental, social, and economic dimensions.*

### 2.1 Food Systems

HLPE, (2017) defines food systems as all the parts and pieces involved in food production, processing, distribution, preparation, and consumption, as well as the people, places, things, infrastructures, and things that go into it. It is also the outcomes of the entire process, including the social, economic, and ecological outcomes. It refers to the complex web of interconnected processes and activities that, when brought together, cause food to be produced and consumed. The Global Alliance for Improved Nutrition (GAIN), (2021) defined it as the people, locations, and activities that contribute to the availability of food, influencing and shaping decisions about choosing what to eat, how, and when. A food system interacts with many other systems, including energy, transportation, and many more (HLPE, 2014).

#### 2.1.1 Food Systems Constituent Elements

HLPE, (2019) determined that **consumer behavior**, **food environments**, and **food supply chains** are the three fundamental components of food systems and the variables that drive them include technology, culture, technology, demographics, economics, as well as institutional and other actions (The Global Alliance for Improved Nutrition (GAIN), 2021). Keats, (2021) highlights nine major parts

distinguishing: food system drivers<sup>1</sup>; supply chains; consumer behaviors; individual factors<sup>2</sup>; diets<sup>3</sup>; political, program, and institutional actions<sup>4</sup>; nutrition and health outcomes<sup>5</sup> and impacts (environmental, economic and social). Outcomes and impacts are shaped by consumer behavior, food surroundings, and supply chain (HLPE, 2017).

All the processes and people involved from seed growing to consumption; such as input supply, production, storage, handling, delivery, processing, packaging, distribution, retail, and marketing of food are part of the **food supply chain** (HLPE, 2019; The Global Alliance for Improved Nutrition (GAIN), 2021), but also the kinds of food that are available and accessible, as any one component in this chain can determine a decision that affects the others (HLPE, 2017).

Within the food system, consumers interact in a variety of ways, including the physical, economic, political, and sociocultural aspects, all of which contribute to what is known as the **food environment**. Food quality and safety, as well as economic and physical availability of food (affordability and proximity), are the most important aspects of the food environment that impact dietary choices, acceptance, and habits (HLPE, 2019). It includes the activities of promoting, labeling, advertising, and providing information to customers (The Global Alliance for Improved Nutrition (GAIN), 2021).

However, all the decisions and choices made by consumers, whether at the household or individual level, about food acquisition, storage, preparation, meal practices, consumption, and waste are reflected in **consumer behavior**. Both

---

<sup>1</sup> These are the elements, mechanisms, and circumstances that determine the affordability, availability, desirability, and accessibility of food in a certain area (The Global Alliance for Improved Nutrition (GAIN), 2021). They influence the three fundamental components of food systems (consumer behavior, food environments, and supply chains) (HLPE, 2017).

<sup>2</sup> Individual factors encompass aspects of culture, educational background, financial level, access to information and knowledge, people's environment, mobility, time availability, and, in the case of families, the distribution of food within the home (The Global Alliance for Improved Nutrition (GAIN), 2021).

<sup>3</sup> Diets refer to the specific meals and beverages that an individual regularly consumes. A well-balanced diet consists of a wide range of meals in suitable portions that fulfill the body's nutritional needs, and it is safe (The Global Alliance for Improved Nutrition (GAIN), 2021). Consumer behavior, food surroundings, and supply shape diets (HLPE, 2017).

<sup>4</sup> These are the initiatives undertaken by institutions and organizations operating within food systems that take part in the efficiency and effectiveness of food supply chains, food environment, influence consumer behavior, and diets (The Global Alliance for Improved Nutrition (GAIN), 2021).

<sup>5</sup> It refers to the direct impact on nutrition and health that diets have (The Global Alliance for Improved Nutrition (GAIN), 2021).

individual preferences and the current food environment have a role in shaping this. Personal preferences are impacted by elements such as taste, convenience, values, traditions, culture, and beliefs (HLPE, 2019; The Global Alliance for Improved Nutrition (GAIN), 2021). It is important to highlight that pathways to more sustainable food systems can be made possible by collective changes in consumer behavior (HLPE, 2017).

HLPE, 2017 examines that food systems and food environments can exist or coexist at several levels, including local, national, regional, and global. Besides, when assessing food systems in terms of both food supply chains and the food environment, three main categories emerged: traditional<sup>6</sup>, mixed<sup>7</sup>, and modern<sup>8</sup> food systems.

Every food system, no matter whether it is traditional, mixed, or modern, has its particular obstacles. However, all food systems can create distinct pathways towards sustainability. Modern food systems should not be seen as the model to follow, because traditional food systems, together with their associated knowledge systems, have inherent value (HLPE, 2017).

### **2.1.2 Food Supply Chains**

In this study, the research concentrates on the food supply chains within modern food systems. These chains are described as pathways through which food products

---

<sup>6</sup> Traditional food systems consist of raw, fresh foods that have undergone minimum processing and are seasonal products, which means that access to perishable products such as animal-source meals and certain fruits and vegetables is limited throughout the year. These systems have local and/or SFSCs. Food environments often consist of individuals' own crops and informal marketplaces that operate on a daily or weekly basis (HLPE, 2017).

<sup>7</sup> Food systems in which producers sell their harvests in both formal and informal marketplaces are referred to as mixed food systems. Packaged and highly processed food products are easily available and affordable, but nourishing foods are costly. Within these food systems, consumers possess little or nonexistent access to the dietary requirements. Additionally, although safety and quality norms are in place, manufacturers fail to comply with them (HLPE, 2017).

<sup>8</sup> Modern food systems provide a diverse range of food options all year round, thanks to advanced methods of processing and packaging that prolong the shelf life. These systems also ensure strict enforcement of food safety regulations and have a strong infrastructure in place. These systems comprise markets that are accessible in both wealthy and low-income regions. Usually, the price of basic necessities is cheaper compared to ASF and perishable items, but specialized foods like organic and local options tend to be more costly. The promotion of consumers' access to comprehensive information on food labels, shop shelves, menus, and food is strongly emphasized. The monitoring and regulation of food safety standards is widespread, and the storage and transportation systems, including the cold chain, are typically prevalent and consistent (HLPE, 2017).

travel from production sites to consumers, a journey often encapsulated by the “Farm to Fork”<sup>9</sup> strategy. The different activities are characterized by the following description (HLPE, 2017; Ilbery, 2009):

- Production: Farms of various dimensions, from small to industrial, produce a diverse range of food items. Global production enables the availability of food from any location and at any given moment.
- Storage and distribution: Contemporary transportation infrastructure, storage facilities, and refrigeration systems facilitate the efficient transportation of food across long distances and ensure its safe preservation for prolonged periods of time.
- Processing and packaging: A wide variety of processed packaged meals are readily accessible, frequently inexpensive, and simple to consume, yet occasionally considered "unhealthy".
- Retail and markets: It offers a wide range of alternatives for food access, including several supermarkets, hypermarkets, quick casual food establishments, and high-end dining restaurants.

This research will focus on the study of the food supply chains in the EU, specifically in Spain, which will be studied and described in this thesis.

#### *2.1.2.1 Food Supply Chain Types*

The study of food supply chains has attracted considerable attention from both academic researchers and policymakers, driven largely by the complex challenges and opportunities presented by an increasingly globalized market (European Coordination Via Campesina (ECVC), 2018). This growing scrutiny is essential in understanding the multifaceted nature of how food is produced, distributed, and consumed across various regions and markets. As these chains expand, a notable gap has emerged, highlighting the disconnection between consumers and the origins of their food. This gap is significant because it clouds the understanding of where and how food is sourced, often leading to a reduction in the economic benefits that small-scale producers might otherwise claim in a more localized or transparent system (Kneafsey et al., 2013). As described by HLPE, (2017), focusing on supply chains is key to achieving sustainability.

Such complexities in the food supply chain have given rise to a diversity of models through which farmers can market their products. **Traditional methods** include selling at local farmers' markets, owning and operating farm-based shops, participating in food festivals, and engaging in direct delivery schemes. Moreover,

---

<sup>9</sup> The strategy effectively tackles the challenges of sustainable food systems and acknowledges the inherent links between the well-being of individuals, the well-being of societies, and the wellness of the planet (European Commission, 2020).

farmers have the option of selling through **single trade intermediaries**, such as cooperative shops, specialty stores, and large supermarkets, which typically characterize conventional and long food supply chains. Additionally, farmers increasingly engage in **direct sales to public institutions** like schools and hospitals under public procurement schemes, or to the hospitality sector, including restaurants and hotels, which may either support localized supply chains or extend to non-local, internet-based long-distance delivery systems. Conversely, other more direct and interactive forms of commerce involve **consumers visiting farms** for their purchases, which includes activities like shopping at farm stores, engaging in agritourism, or participating in pick-your-own produce schemes. These interactions often foster a closer connection between consumers and producers, forming the basis of alternative food supply chains that emphasize short and localized routes, transparency, and direct consumer-producer relationships (United Nations Industrial Development Organization, 2020).

In the subsequent sections, this review will delve deeper into the distinctions and specifics of these two primary types of food supply chains: the conventional and Long Food Supply Chains (LFSCs), and the Alternative Food Supply Chains (AFSCs).

#### 2.1.2.1.1 Conventional & Long Food Supply Chain

Conventional food supply chains are complex and involve numerous intermediaries from production to consumption, often spanning international borders and requiring food products to travel long distances. This extensive network can obscure the origins and production practices of food items, potentially eroding consumer trust and affecting producer profitability. Designed primarily for large-scale efficiency and cost reduction, these chains focus on maximizing geographic distribution, which involves various actors such as manufacturers, distributors, and retailers. Although this setup optimizes cost and logistics, it also creates a disconnect between producers and consumers, limiting the latter's awareness of where and how their food is produced (European Coordination Via Campesina (ECVVC), 2018). Besides, this disconnection results in consumers having less awareness of the origins of their food and farmers receiving diminished economic returns (Kneafsey et al., 2013).

#### 2.1.2.1.2 Alternative Food Supply Chains

The growing interest in AFSCs has led to a critical distinction between conventional systems and those considered “alternative” (Ilbery, 2009). AFSCs are increasingly being recognized as vital to reconnecting producers with consumers, offering a stark contrast to the conventional long-distance supply chains prevalent in globalized food markets (Kneafsey et al., 2013).

AFSCs underscore a vital element of trust between producers and consumers, foundational to the success of local food systems. This trust is characterized by mutual responsibilities: producers commit to delivering healthy, wholesome food, and consumers reciprocate by supporting these integral members of their



communities (Kneafsey et al., 2013). This relationship is further strengthened by the concept of "cosmopolitan localism," which advocates for minimizing the ecological footprint through localized food production, thus enhancing sustainability, and strengthening local economies (Manzini, 2015).

AFSCs also focus on local and regional provenance, emphasizing a reduced geographic scope, typically operating within 20 to 100 kilometers to ensure proximity sales (Kneafsey et al., 2013). **Territorial Food Systems and Local Food Systems or LFSCs**, operate with a clearly defined geographical focus, emphasizing sales in proximity and the ability of farmers to add value directly through specialized labeling schemes and direct marketing efforts (Kneafsey et al., 2013). These systems are not only pivotal in enhancing the connection between product and place but also resonate with consumers and producers striving to create a more sustainable and transparent food system (Ilbery, 2009). Such proximity is crucial for maintaining the economic viability of local farming, enabling producers to secure a fairer distribution of income and value within the food system and local economies (Stummerer et al., 2020; Vittersø et al., 2019). Additionally, these networks foster the development of social capital and trust among stakeholders, essential elements for a socially sustainable food system (Vittersø et al., 2019).

**SFSCs** are defined by Kneafsey et al., (2013) as the chains where the foods involved can be identified and traced back to a farmer, and where there should ideally be as few or no middlemen between the farmer and the consumer. In this report, the definition from Kneafsey et al., (2013) is taken as a reference due to this author makes a difference between these SFSCs and LFSCs. SFSCs usually offer a variety of production-consumption connections that foster distributed food production systems recognized for meeting local needs and enhancing community engagement (Manzini, 2015; United Nations Industrial Development Organization, 2020). They have beneficial effects the community, and farms as well as the economy (Kneafsey et al., 2013). As SFSCs include movements such as "transition towns" and "Slow Food<sup>10</sup>", which aim to reduce the physical distance between farm and table while enriching the consumption experience through a heightened sensory appreciation of local products and a deeper personal connection with producers. This shift towards a more networked, localized food system underscores the need to transition from large, centralized systems to those that incorporate smaller, diverse entities like cooperatives, creating a scattered yet interconnected system that aligns with broader societal goals (Manzini, 2015).

---

<sup>10</sup> Slow Food advocates for the quality of proximity products, emphasizing a sensory experience of place and a personal connection with the producers, which enhances the overall value and appreciation of food (Slow Food, n.d.).

Three main types of SFSCs are identified (Kneafsey et al., 2013):

- Face-to-face: Consumers buying products directly from the producers or processors typically do so in person, which allows for a level of authenticity and trust through personal interactions. Examples of these include sales at farm gates, pick-your-own events, farm shops, farmers' markets, and roadside stands.
- Spatial proximity: Products in this category are both produced and sold within their region of origin, with consumers being informed of the product's local nature at the point of purchase. This category shares similarities with the face-to-face model and involves the same types of retail environments, such as farm shops and farmers' markets. Additionally, it encompasses specialist retailers like delicatessens, bakeries, butchers, and grocers that offer local products.
- Spatially extended: Consumers who may not have direct experience with the production region are informed about the location and methods of production even though they are not located there. PDO (Protection of Designated Origin) and PGI (Protected Geographical Indications) are the two primary examples.

Other examples of AFSCs are **Mid-Tier Supply Chains (MTSCs)**, which despite their larger scale and involvement of more intermediaries, still focus on regional or national levels, maintaining a connection to place and farm origins essential for consumer trust and product differentiation. These chains demonstrate a structured organization that optimizes logistics and minimizes costs while supporting the local economy and preserving local food practices against the tide of globalization (Fleury et al., 2016).

This strategic approach focused on AFSCs supports local economies and they also resist the homogenizing effects of global food systems by safeguarding local knowledge, traditions, and environmental resources (Kneafsey et al., 2013).

### **2.1.3 Short Local Food Supply Chains (SLFSCs)**

The researcher introduces the nuanced concept of SLFSCs in order to research the intended objectives. This term, derived from the frameworks of SFSCs and Territorial Food Systems and Local Food Systems (with a focus on local and regional provenance), addresses the need to specifically define supply chains that are both short in intermediaries and local in their sales. SLFSCs effectively combine the low number of actors from SFSCs, which involve few or no intermediaries, with the local engagement and sales focus of Territorial and Local Food Systems, thereby directly impacting the local economy and enhancing community engagement (Augère-Granier, 2016; Vittersø et al., 2019).

Moreover, SLFSCs have flourished across the EU, thriving in both rural and urban settings where farmers sell directly to consumers or through minimal intermediaries. This structure not only reduces the physical, economic, and social distance between agriculture and final consumers but also enriches the cultural and social connections. By fostering a deeper understanding and appreciation of food origins and production processes, SLFSCs enhance the journey from “Farm to Fork”, promoting a robust local food culture and community solidarity (Kneafsey et al., 2013; United Nations Industrial Development Organization, 2020). These supply chains are designed to maximize the profitability of small- and medium-sized farms by allowing them to set prices more directly and diversify their products, which significantly boosts their income and reduces dependency on conventional and LFSCs (Kneafsey et al., 2013).

In policy terms, the European Union's rural development policy for 2014-2020 placed increased emphasis on SFSCs, recognizing and defining them formally for the first time. This move aims to encourage more producers to engage with local food systems, supported through measures co-financed by the European Agricultural Fund for Rural Development. Such policies underscore the EU's commitment to strengthening farmers' roles within the food supply chain and enhancing the sustainability of local food production (Augère-Granier, 2016). Overall, SLFSCs aim to revitalize local communities, empowering both producers and consumers by fostering a sense of belonging and pride in local food systems, while also potentially reducing greenhouse gas emissions associated with long-distance food transport (Fao et al., 2023; Vittersø et al., 2019).

## 2.2 Sustainable Food Systems

HLPE, (2014) specifies that a Sustainable Food System (SFS) provides nutritious food for all people without compromising the social, economic, or environmental factors that will be necessary to ensure the same level of food security and nutrition for subsequent generations. As well as it was expressed at the HLPE, (2019) research, strengthening resilience and securing social responsibility are essential to achieve those objectives.

HLPE, (2017) argues the capacity of consumers to endorse sustainable diets that are culturally acceptable; accessible; economically fair and affordable; nutritionally adequate, safe, and healthy; and that optimize human and natural resources is influenced by the three parts of food systems (food environments, consumer behavior, and supply chains). So, to embrace the transition towards SFS is important to keep in mind the interactions that occur between all the parts that constitute the food systems. Given that supply chain activities have a direct impact on the nutritional quality of food available in a certain food environment, the decisions made in this particular area of the food system are extremely significant.

### 2.2.1 Strategic Approaches in Sustainable Food Systems

Contemporary food systems confront a complex array of challenges that demand diverse and strategic approaches to enhance their sustainability. Considering this, various methodologies have been developed and implemented, each contributing uniquely to the transformation toward sustainable and capable food systems that can adapt to socioeconomic and environmental changes (Ewert et al., 2023).

Ewert et al., (2023) highlight several methodologies that intersect yet retain unique features aimed at enhancing the sustainability of the food system. He emphasizes the importance of using participatory approaches and systems analysis to understand and promote agroecological practices. For instance, methodological approaches that help to integrate local knowledge and ensure community involvement in agroecological transitions are highlighted, as is the case of the action research (see 4. Methodology). These methods facilitate the development of sustainable agricultural systems through collaboration between researchers and practitioners, fostering long-term benefits and trust. He mentions the importance of including different aspects to achieve SFSs as sustainable intensification, which seeks to increase productivity without adverse environmental impact; organic farming, which avoids the use of chemical pesticides and fertilizers; conservation agriculture, focusing on soil conservation and biodiversity; regenerative agriculture, which aims to restore soil health and ecosystems; ecological intensification, which optimizes the ecological processes essential for agriculture; and **agroecology**, which integrates ecological principles with agricultural practices.

However, Holt-Giménez & Altieri, (2013) expressed the transition to SFSs in another way as he delineates two primary global food movements: one promoting alternatives to industrial agri-food systems through sustainable practices including agroecology, and another advocating for structural reforms to ensure equitable resource distribution, fundamental for achieving food sovereignty. These movements, though distinct, converge in their advocacy for systemic change within agricultural and food systems. Besides, the significance of these movements was globally acknowledged at the Nyéléni Declaration in Mali, in 2015, which recognized the need for a unified understanding of agroecology in the pursuit of Food Sovereignty. This understanding is pivotal for addressing SDG2, which focuses on eradicating hunger, achieving food security, improving nutrition, and promoting sustainable agriculture (Friends of the Earth International, n.d.; Holt-Giménez & Altieri, 2013; Wezel et al., 2020).

This thesis will pay special attention to agroecology and its role in advancing food sovereignty (which are integral to rethinking and reshaping the global food paradigms). So, a detailed exploration of agroecology and food sovereignty will follow in subsequent sections, where these concepts will be analyzed in depth to demonstrate their critical roles in transforming food systems globally. This will include a discussion on how agroecology not only supports sustainable agricultural

practices but also empowers communities by aligning agricultural development with social justice and environmental stewardship, just as food sovereignty advocates.

#### *2.2.1.1 Food Sovereignty*

Food Sovereignty is not only acknowledged as a pivotal shift but also as a dynamic and adaptive process tailored to address the complexities of global food systems. It emphasizes the importance of local control and sustainable management of food systems, crucial for establishing fair and resilient food networks. This paradigm is internationally recognized, and its significance is reinforced by its inclusion in the UN Declaration of the Rights of Peasants and other people working in rural areas, specifically in Article 15 (European Coordination Via Campesina, n.d.). This acknowledgment positions food sovereignty as essential for the development of SFSs (European Coordination Via Campesina, n.d.; European Coordination Via Campesina (ECVC), 2018).

The concept of food sovereignty initially emerged as a proposition to fundamentally reconsider the structure of food production, distribution, and trade, along with the management of land and aquatic resources. Advocating for a system where communities democratically and sustainably manage food resources, ensures that land, water, and other resources are used and preserved responsibly (European Coordination Via Campesina (ECVC), 2018). The approach emphasizes engagement across various groups, cultures, and regions, reflecting a comprehensive strategy that spans local, regional, and global scales. Core to food sovereignty are **six fundamental principles** including prioritizing food for people, recognizing food providers, promoting local systems, empowering communities, fostering the development of relevant skills, and embracing sustainable practices (Bingol, 2021).

In Europe, the Food Sovereignty movement aims to reshape the agricultural framework, focusing on the well-being and working conditions of farmers. It advocates for tailored strategies that cater to local and regional needs, rejecting uniform solutions for diverse agricultural contexts (Bingol, 2021). The movement pushes for reforms in European Union policies, particularly the CAP, to ensure that farmers receive stable prices and live a dignified life, producing local, nutritious food that aligns with community preferences (European Coordination Via Campesina, n.d.). Furthermore, it demands stringent regulation of international trade practices to prevent the dilution of social and environmental standards, which can undermine local agricultural economics (Bingol, 2021). By promoting a transition towards agroecology, the movement seeks to ensure sustainable food production practices that protect the rights of peasants and small-scale farmers (European Coordination Via Campesina, n.d.).

#### *2.2.1.2 Agroecology*

Agroecology has emerged as a pivotal strategy for addressing the complex challenges of modern food systems, gaining attention for its comprehensive

approach that integrates ecological, social, and economic dimensions (HLPE, 2019). Originating in the early 20th century, it has expanded from its ecological and agricultural roots to include social activism and practical applications, affecting all aspects from production to consumption (Wezel et al., 2009). This approach champions food sovereignty and seeks systemic transformations to counter the limitations of industrial agricultural intensification, promoting SFS (HLPE, 2019; Sullivan, 2023). As noted by the International Agricultural Assessment of Knowledge, Science, and Technology for Development (IAASTD), agroecology enhances agricultural productivity, food security, and addresses rural poverty through sustainable practices (Holt-Giménez & Altieri, 2013).

Agroecology applies ecological principles to improve agroecosystems, focusing on environmental health, economic viability, and social equity (HLPE, 2019). It emphasizes self-sustaining methods that align with natural processes and cultural traditions, supporting diverse farming practices and promoting food sovereignty, equity, and local cultural identities (Friends of the Earth International, n.d.; Wezel et al., 2020). These practices not only reduce production costs and increase farmer independence but also promote biodiversity and ecological sustainability, proving particularly beneficial for small-scale farmers (Amoak et al., 2022; Friends of the Earth International, n.d.).

Agroecology empowers communities, reduces gender disparities, and strengthens social ties by promoting local engagement and resource sharing, thereby enhancing resilience and capabilities for adaptation (Amoak et al., 2022; Soldato & Massari, 2024). It significantly contributes to the economic sustainability of rural regions by developing efficient marketing channels and promoting equitable and secure food production, which are crucial for transformative change. This approach also supports a variety of small-scale food production systems and family farming, assists farmers and rural communities, and champions food sovereignty, local knowledge, social justice, local identity, culture, and the rights of indigenous peoples to preserve their traditional seeds and breeds (Wezel et al., 2020).

The application of agroecology within the food system can profoundly impact producers by reducing costs, granting independence from companies, and providing multiple sources of income. These benefits help mitigate risks related to crop failure and expand the range of agricultural products, improving consumer nutrition (Friends of the Earth International, n.d.). Agroecology serves as an effective alternative to industrial agriculture by preserving ecosystems and promoting biodiversity and connectivity. This approach is environmentally sustainable, cost-effective, and aligns with traditional practices and cultural values, offering benefits to small-scale farmers (Amoak et al., 2022).

Moreover, it fosters empowerment and reduces gender gaps by encouraging the active participation of farmers in the development and implementation of initiatives, promoting local involvement, and utilizing locally accessible knowledge and resources (Amoak et al., 2022). Evidence shows that agroecology enhances the

development of social relationships by prioritizing traditional local systems. It empowers farmers to establish stronger social connections and improves their access to assistance and resources, thereby increasing their power, resilience, and ability to adapt by broadening their sources of revenue (Soldato & Massari, 2024). To realize these advantages, it is essential for local populations to actively participate in decision-making processes concerning their local environment. Implementing farmer-to-farmer approaches is particularly significant, as it fosters a sense of ownership and helps bridge the power gaps between farmers and the scientific community. Although agroecology holds significant promise for transformation, achieving these benefits requires governmental support at the national, regional, and local levels (Amoak et al., 2022).

#### 2.2.1.2.1 Agroecology Principles

Understanding the agroecology approach is pivotal for its implementation in sustainable agriculture. The Food and Agriculture Organisation of the United Nations (FAO) and Wezel et al., (2020) have outlined a comprehensive set of principles that are fundamental to the practice of agroecology. These principles include:

1. *Recycling*. Preferentially utilization of local renewable resources whenever feasible and aim to minimize the distance between resource cycles of nutrients and biomass.
2. *Input reduction*. Minimize or eradicate reliance on purchased inputs and enhance self-reliance. It corresponds to the FAO element of agroecology of efficiency\*.
3. *Soil health*. Implement measures to ensure the security and improvement of soil health and functioning, with a specific focus on controlling organic matter and boosting soil biological activity, in order to promote better plant growth. Within the FAO agroecology's elements, it is defined as diversity, resilience, and synergies\*.
4. *Animal health*. Promote and safeguard the well-being and rightful treatment of animals. This is reflected in resilience at the FAO elements.
5. *Biodiversity*. Preserve and improve the variety of species, the genetic resources and functional diversity, in order to sustain the total biodiversity of agricultural ecosystems across different areas and timeframes, including at the field, farm, and landscape levels. It is part of the FAO diversity element\*.
6. *Synergy*. Promote the improvement of beneficial ecological interaction, synergy, harmonious integration, and reciprocal support among the components of agroecosystems, including animals, soil, trees, water, and crops.

7. *Economic diversification*. Promote financial autonomy and value-added prospects for small-scale farmers to enhance their on-farm revenues and enable them to meet consumer demand. Regarding the FAO elements, “economic diversification” corresponds to diversity and solidarity and circular economy\*.
8. *Co-creation of knowledge*. Promote the collaborative development and sharing of information, both locally and scientifically, with a particular focus on fostering farmer-to-farmer exchange to facilitate innovation. It is associated with the sharing of knowledge and co-creation elements set by FAO\*.
9. *Social values and diets*. Construct food systems that are rooted in the cultural, identity, and traditional values of local communities, while promoting social and gender equality. These systems should aim to offer nutritious, varied, and culturally suitable diets that align with seasonal consumption. This principle matches with the ones from FAO named as human and social values and culture and food traditions\*.
10. *Fairness*. Promote equitable and resilient means of making a livelihood for all actors involved in food systems, particularly small-scale food producers, through the principles of fair trade, fair employment, and fair protection of intellectual property rights. Fairness is included within the human and social values principle set by FAO\*.
11. *Connectivity*. Promote fair and short distribution networks and reintegrate food systems into local economies to establish close closeness and trust between farmers and consumers. It is an aspect also part of the circular and solidarity economy from FAO’s principles.
12. *Land and natural resource governance*. Enhance institutional frameworks, including acknowledging and assisting family farmers, smallholders, and peasant food producers as sustainable stewards of natural and genetic resources. Within FAO principles is defined as responsible governance\*.
13. *Participation*. Promote social structure and increased involvement in decision-making by consumers and food producers to facilitate decentralized governance and local adaptive management of agricultural and food systems. Participation is part of social and human values at FAO’s principles\*.

*\* In April 2018, during the Second FAO International Symposium on Agroecology, the FAO introduced "The 10 Elements of Agroecology framework". This framework was endorsed by 197 Members of FAO and serves as a guiding vision for FAO's approach to Agroecology. FAO decided not to define the principles of agroecology, as they believed that many knowledgeable practitioners had already done so. Instead, they aimed to identify a set of important 'elements' that can guide*

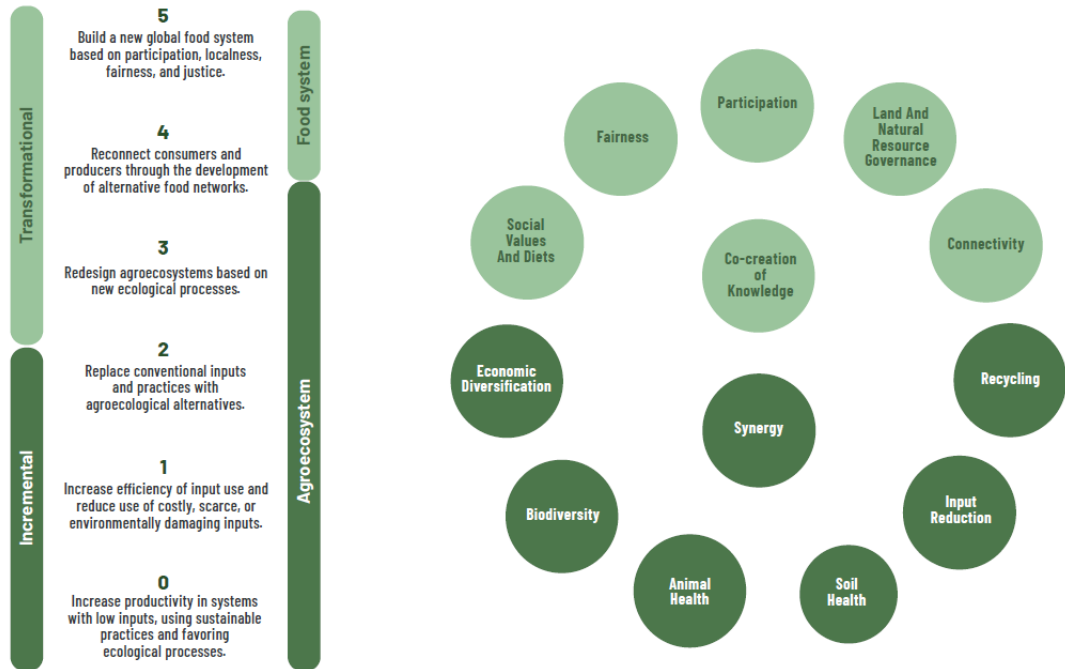


*intergovernmental efforts in promoting agroecological transitions towards sustainable agriculture and food systems* (Wezel et al., 2020).

All the principles are under a framework that comprises five different levels that help to understand the pathway to follow to achieve a food system transformation. Wezel et al., (2020) argued that levels 1 and 2 in agroecology are incremental and levels 3 to 5 are transformational; and specifically, levels 4 and 5, expand the scope including the whole food system:

1. *Level 1.* It is focused on the fundamental aspect of resource usage efficiency by implementing techniques that decrease or eliminate the utilization of expensive, limited, or ecologically harmful inputs. The emphasis is on the notion of minimizing input and recycling.
2. *Level 2.* It involves replacing traditional inputs that harm the environment with the utilization of existing organisms to enhance plant nutrient absorption, stress tolerance, and defense against pests and diseases.
3. *Level 3.* It is based on the redesign to boost system variety at farming system levels. It means improving soil and animal health, promoting diversification and recycling, decreasing inputs, and maximizing synergies both on farms and across landscapes. It has a primary emphasis on overseeing interactions among components.
4. *Level 4.* At this level, there is a strong correlation between individuals involved in food production and those who consume it. Pathways refer to the establishment of direct sales and alternative food networks, such as farmers' markets, community-supported agriculture, and other forms of direct marketing that strive for fairness and justice. It is the level at which this report is framed.
5. *Level 5.* It is based on fairness, justice, localness, and participation in order to achieve food security and nutrition in a new global system. The approach is not only sustainable but also contributes to the restoration and protection of Earth's life-support systems.

Regarding the principles and their levels (Figure 2), principles 1 to 7 generally pertain to the size of the agroecosystem, whereas principles 9 to 13 are associated with the food system and include the collaborative generation of knowledge (Wezel et al., 2020).



**Figure 1. The 13 principles of agroecology (right) and its levels (left).** *Source:* CGIAR Initiative on Agroecology, (2024).

### 3. Contextual Framework

*The initial phase of the research activity entailed the application of the contextual framework representation method, intending to employ it as a tool for the exploration of pertinent information and data for this study. This approach is grounded in the "Creative Chaos" theory posited by Pozo-Puértolas & Puértolas, (2020), which serves as a foundational guide in mapping the interplay between the core subjects of the investigation (Eidler, 2023).*

**Food systems** are the central focus of this investigation, focusing on their key categories such as consumer behavior and supply chain. Within these domains, the study examines approaches like food sovereignty and agroecology as proposed solutions to the prevailing challenges faced by the current food systems. These solutions are evaluated through their potential to enhance connectivity between producers and consumers. The study particularly delves into the impact of connectivity and its realization through proximity-based SFSCs, which are SLFSCs.

The discipline of **design and innovation** emerges as a significant subject within this study. Although it has many disciplines, we will focus on the one concerning system design, specifically in the context of food systems and supply chains (as this last one is an element of the food systems). In this study, an analysis of the impact of SLFSCs and consumer preferences and habits is done through the lens of social design and innovation.

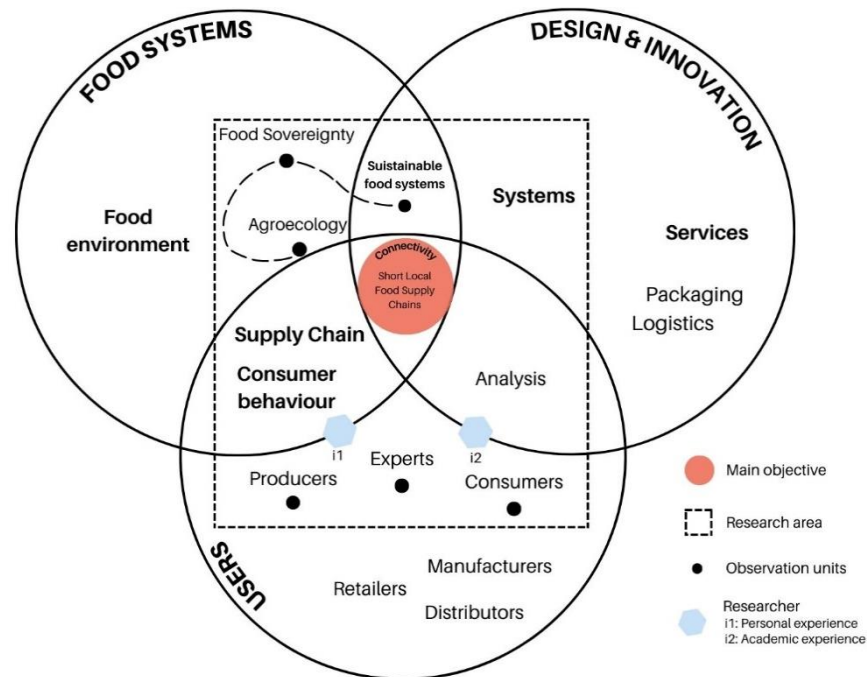
Social innovation offers strategies that help ease the tensions between common trade-offs such as private vs public interests, local vs global priorities, and consumer vs producer needs. These strategies provide adaptable and inclusive solutions that work well in diverse settings, including rural and marginalized areas. These strategies also ensure that innovations are well-suited to the specific cultural and geographical characteristics of a place, while still contributing effectively to broader, global solutions. This enhances the ability of societies to implement changes and solve problems (Manzini, 2015).

In this context, social design plays a crucial role in evolving food systems toward sustainable practices by introducing new ideas, goods, services, and models that not only meet immediate needs but also promote new forms of social interactions and partnerships (Manzini, 2015). Furthermore, social design, in the context of food systems, focuses on tailoring food production systems to meet the specific needs of communities and territories. This approach is exemplified in the case studies that

concentrate on two distinct areas, demonstrating how tailored solutions can effectively address local challenges (Soldato & Massari, 2024).

The design and innovation towards sustainable food systems are approached by centering the research on the **users** within these systems, particularly focusing on producers and consumers in rural and marginal areas of Spain. Emphasis is placed on small-scale producers, who predominantly reside in rural areas, and the consumers within these locales, where rural development represents a formidable challenge in sparsely populated regions (Renting et al., 2003).

In this context, the study aims to cast light on the intricate relationships between these actors, interrogating how design and innovation in food systems can underpin and facilitate the empowerment, sustainability, and resilience of rural communities.



**Figure 2. Contextual framework representation.** *Source: Own elaboration, 2024.*

## 4. Methodology

*This section outlines the methodology implemented in this study, guided by the Research Onion framework, which structured the research design from philosophical underpinnings to detailed methodological choices. Data were collected through tailored interviews and surveys, designed to extract relevant information from consumers, producers, and experts across the chosen areas of Valle del Jerte and La Garrotxa. The methodology also includes a description of the data analysis techniques used to integrate and interpret the qualitative and quantitative data.*

### 4.1 Research approach

#### 4.1.1 Exploratory literature review

An **exploratory qualitative literature review (M1)** was conducted to gain a preliminary understanding of food sovereignty and the various perspectives on the problems of the current food system. This review helped align the focus of the study with the researcher's values and provided a basis for delving into specific theories such as agroecology and peasants' rights, following the proposals of European Coordination Via Campesina, (n.d.). During this phase, the potential of the SFSCs and the agroecology principle of 'Connectivity' were explored.

With the information obtained from the literature review, the research objectives were defined. These objectives aim to investigate how the principles of agroecology can be integrated into food supply chains to enhance food sovereignty and sustainability. The objectives also seek to explore the impact of SFSCs in the rural communities studied.

#### 4.1.2 Research Onion Methodology

To design and structure the study, the Research Onion methodology (Figure 3) was applied. This methodology facilitated the selection of the appropriate research philosophy and methodological approach to address the objectives of the study. The research philosophy adopted was **interpretivism**, which allows us to understand the

problems from the perspective of the subjects of study, appreciating the complexity of their realities. The research approach was **inductive**, allowing theory to emerge from the analysis of data collected through interviews and surveys (Saunders et al., 2006).

Soldato & Massari, (2024) emphasized the significance of adapting and tailoring the objectives of the targeted community to foster a novel approach and framework. Therefore, it is crucial to comprehend the wants and requirements of individuals residing in the areas being studied via the interview approach. Therefore, the research includes **interviews with producers and consumers (M2)**, as well as **with experts (M3)** to deepen the understanding of local needs and realities. **Producer and consumer surveys (M4)** were also conducted to obtain quantitative data to complement and enrich the qualitative findings. Therefore, the methodological choice was defined as a **mixed-method complex**.

Multiple research strategies were employed for the study, which allowed the complexity of the research to be approached from different perspectives. The semi-structured and unstructured interviews with consumers, producers and experts introduce an element of **narrative inquiry**, highlighting the personal stories and experiences within each supply chain, while the use of **surveys** provides quantitative data that enriches the understanding of the overall dynamics and preferences in these communities. In addition, the **action research**<sup>11</sup> approach is integrated, as the study not only seeks to understand these systems but also to communicate results to the community to foster resilience and sustainability of the environment (Berg, 2004). The results are also communicated, via WhatsApp and the optional emails provided in the surveys, in a summarized form and popular language in order to receive feedback from the producers and readjust the content of the findings. Besides, as the data was collected at a single point in time, the time horizon of the research is **cross-sectional** (Berg, 2004).

---

<sup>11</sup> The primary purpose of the action research model is to generate information and knowledge that is directly useful to a group of individuals. In this case, the group of individuals are the producers who have the choice to implement the SFSCPs models. The aim is to motivate them to adopt and utilize the information obtained from the research (Berg, 2004).

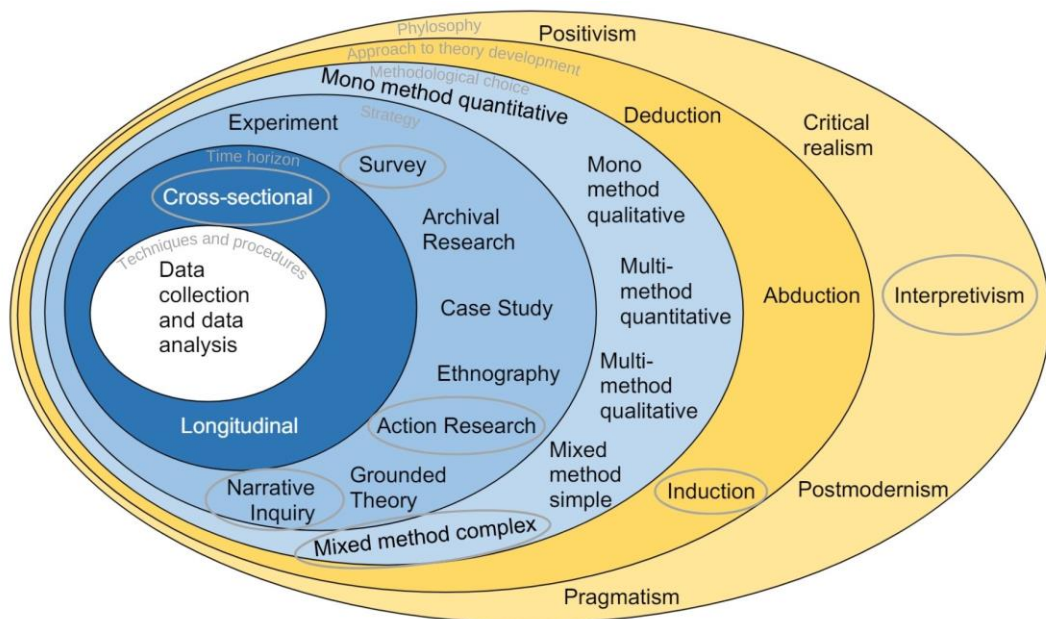


Figure 3. Research Onion. Source: Adapted version from Berg, (2004).

## 4.2 Data collection

The data in this research was acquired from both primary sources, as well as complementary information from the literature review, although the latter was used less predominantly.

### 4.2.1 Interviews

Interviews serve as a prominent primary source of information in this study. They were mainly conducted face-to-face, except for some that had to be conducted online via Google Meet video call format and phone calls. The candidates were reached by phone provided by the website ([www.delitgastronomic.cat](http://www.delitgastronomic.cat), n.d.), for the participants from La Garrotxa due to the lack of direct contacts, as well as by the contact of the researcher's own connection, and through other interviewees. A message by the platform WhatsApp was sent in order to them to agree to participate in the research and to discuss the date, time and place to conduct the interviews. As the research was conducted in Spain, the language used when communicating with them was Spanish, due to the facility to get information and the possibility for the interviewees to express themselves to get as much data as possible.

Three groups of respondents were interviewed: Producers/farmers, consumers (inhabitants of the rural areas to be studied), and experts (professionals involved in the food supply of the region). Table 1 shows the different professional roles of each respondent and the region to which they belong. The description of the conduct of each type of interview is shown in more detail below:

- A total of five semi-structured interviews were conducted with both **producers** from the Valle del Jerte ( $n=3$ ) and La Garrotxa ( $n=2$ ). Profiles of farmers working with different types of agriculture and of different ages were reached out, giving an overview of different views and perspectives. The interview participants identified themselves with the gender of female ( $n=2$ ) and male ( $n=3$ ), and the age range was between 35 and 57 years. Of the participants, three are members of cooperative organizations; four are engaged in organic farming; two work LFSCs models and four sell produce locally and at SFSCs (as one of them sells his production to both LFSCs and SFSCs). In addition, it is worth noting that all of them are landowners, although one of them owns the land through renting it, and they carry out non-intensive manual production that is marked by seasonal harvesting. Producers are interviewed to explore the impact of SLFSCs from their point of view. As well as analyzing the main challenges and opportunities they face according to the model they work with.
- **Consumers** residing in rural areas within the Valle del Jerte ( $n=3$ ) and La Garrotxa ( $n=3$ ) were subjected to semi-structured interviews, which brings the total to six. As in the case of the producers, we contacted people between 26 and 50 years of age (with the intention of obtaining different generational opinions), who belong to the gender of female ( $n=5$ ) and male ( $n=1$ ). In order to get an overview of the different types of consumers in the study area, three types of profiles were interviewed in each area, depending on the common place of purchase: A profile that usually buys most of their food in the supermarket, one that buys most of their shopping basket in local shops and another consumer profile that buys both in the supermarket and in local shops in the area. Consumer decisions are key in food systems, so understanding consumers' wants and needs is paramount when analyzing and implementing systems such as SLFSCs.
- Unstructured interviews were conducted with **experts** ( $n=5$ ), whose professional profiles are related to food distribution, being knowledgeable about the main challenges and opportunities offered by each food system to which they belong. Although the main, and sometimes the only, actors in SFSPCPs systems are consumers and producers, it is also important to know the point of view of other actors and experts with knowledge of the sector from different points of view in the sector, such as logistic, administrative, retailer and so on.



**Table 1. List of interviewed participants.** *Source: Own elaboration, 2024.*

<b><i>Categorization</i></b>	<b><i>Role</i></b>	<b><i>Residence</i></b>
<b><i>Producer 1</i></b>	Organic farming and organic workshop representatives HechoNatural and Cooperativa de Montaña.	Valle del Jerte
<b><i>Producer 2</i></b>	Ecological Agriculture and partner Cooperativa del Campo de Navaconcejo Cooperative	Valle del Jerte
<b><i>Producer 3</i></b>	Conventional agriculture and Picoag Cooperative partner	Valle del Jerte
<b><i>Producer 4</i></b>	Legal responsible for Aliments Ecològics Collbahi SC	La Garrotxa
<b><i>Producer 5</i></b>	Chief of Operations at Ecomtu	La Garrotxa
<b><i>Consumer 1</i></b>	Nurse	Valle del Jerte
<b><i>Consumer 2</i></b>	Social worker	Valle del Jerte
<b><i>Consumer 3</i></b>	Nurse	Valle del Jerte
<b><i>Consumer 4</i></b>	Marketing and sales strategy	La Garrotxa
<b><i>Consumer 5</i></b>	Owner of a space devoted to tourism	La Garrotxa
<b><i>Consumer 6</i></b>	Not shared	La Garrotxa
<b><i>Expert 1</i></b>	Partner at Cooperativa Agroecològica de Montaña and HechoNatural canning factory	Valle del Jerte
<b><i>Expert 2</i></b>	FADEMUR Secretary	National organization
<b><i>Expert 3</i></b>	Collaborator with EcoJerte	Valle del Jerte
<b><i>Expert 4</i></b>	President Cooperativa San José de Piornal	Valle del Jerte
<b><i>Expert 5</i></b>	CEO and Founder of La Colmena	Another Spanish region (Huesca)

#### *4.2.1.1 Interview design*

For the design of the interviews, different aspects to be investigated are considered, as Table 2 shows. Different principles of agroecology are applied because they are a practical and detailed approach that ensures the contribution to food sovereignty, which advocates the right of people to decide on nutritious and culturally appropriate food, obtained in a sustainable way (Anderson et al., 2019). Agroecology, aligned with this principle, emphasizes input reduction, biodiversity, economic diversification, and co-creation of knowledge, which respects and strengthens local traditions and economies. These principles also promote social values and fair diets, enhancing connectivity and community participation. In analyzing the impact of SLFSCs, studying these agroecological principles allows us to assess how such chains can enhance resilience, sustainability, and food sovereignty in rural areas, ensuring more equitable and effective management of food resources (Altieri et al., 2015).

**Table 2. Agroecology principles used to design the research and interviews' framework.***Source: Own elaboration, 2024.*

<i>Principle</i>	<i>How</i>	<i>Why</i>
<b>2. Input reduction</b>	Exploration of the type of agriculture undertaken by producers and the use of pesticides.	To explore the difficulties and benefits the producer perceives of limited pesticide use.
<b>5. Biodiversity</b>	Products currently out of production are questioned. A peasant's point of view.	It is interesting to explore the different reasons why certain varieties are no longer produced, as well as the impact of consumer decisions on this factor.
<b>7. Economic diversification</b>	The different economic activities carried out by the producer are examined.	It is interesting to explore whether the inclusion of SLFSCs models allows revenue to be raised from different economic sources.
<b>8. Co-creation of knowledge</b>	It is investigated whether knowledge is shared between producers and whether this is necessary.	To analyze which types of networks of producers share knowledge, comparing cooperative models with those where there are no cooperatives.
<b>9. Social values and diets</b>	Consumers are questioned about the unavailability of an essential element of a traditional gastronomic dish.	It is contested whether rural inhabitants have difficulty in the availability of products that are part of their typical cultural diet.
<b>10. Fairness</b>	It explores the consideration of the fair price of the product received by the producer, as well as the price to be paid by the consumer.	The fair price factor is decisive for the accessibility of local products, as well as for the decent economic conditions that the producer should receive.
<b>11. Connectivity</b>	The relevance of the relationship between producer and consumer is questioned for both actors; as well as for the seller in the case of the consumer (as it is considered that in a model without intermediaries, the producer is at the same time the final retailer).	It is relevant to explore and question the relevance of increased connectivity between users of SLFSCs, such as between producers and consumers.
<b>13. Participation</b>	The ability of the producer to participate in price decisions and adapt products to consumer requirements is explored, as well as the consumer's ability to communicate their interests and feedback.	The impact of SLFSCs on increasing participation among users is explored.

#### 4.2.2 Surveys

Two different surveys were carried out for users in the Valle del Jerte and La Garrotxa areas, one of them aimed at collecting information on producers and the other on consumers. The aim of the data collection through the surveys was to obtain qualitative data relevant to the study.

### 3.2.2.1 Producers' survey

The survey has a total of 15 questions, which are asked in different formats such as one-choice question, multiple-choice, numerical ranking from 1 to 5, and some others where a brief description can be included. In relation to the content of the questions in the survey carried out for the producers of the Valle del Jerte and La Garrotxa areas, it can be distributed in the following way:

- **Brief introduction of the research's objectives:** In this introductory section of the survey, there is a brief description of the author of the thesis and his studies, followed by an explanation of the relevance of the respondent's answers to the research.
- **Section 1:** Preliminary questions. The first two questions serve as a filter to find out whether the respondent is involved in food production in the Valle del Jerte or La Garrotxa areas or not. This is followed by a question about the number of inhabitants of the place where the respondent lives.
- **Section 2:** Demographic questions. This section is intended to collect data on the gender and age of the respondent.
- **Section 3:** Producer-consumer connectivity. The type of production that is carried out is questioned to analyze the impact of this on the various issues that are raised. In addition, the degree of communication with the consumer, the impact of the consumer on the producer's work, as well as the consumer's interest and perspective in selling local products are assessed. The term 'localness' is used because of the familiarity of this term with the public, as it is the one that best expresses what is intended to be analyzed.
- **Section 4:** Traditional gastronomy and biodiversity. It asks about the existence of products that used to be produced in the past and not today, intending to analyze the impact of biodiversity loss. It also questions the impact of consumer choices on the preservation of biodiversity. And it ends with a section where the respondent can include his/her e-mail address, in case he/she wants to participate in future projects or is interested in being informed of the results of the thesis.

Regarding the number of responses obtained, the following responses were obtained for producers from Valle del Jerte ( $n=14$ ) and La Garrotxa ( $n=1$ ). In addition, one of the respondents stated that he was not involved in production.

### 4.2.2.2 Consumers' survey

The survey has a total of 16 questions, which are asked in different formats such as one-choice question, multiple-choice, numerical ranking from 1 to 5, and some others where a brief description can be included. Concerning the content of the questions in the survey carried out for the consumers of the Valle del Jerte and La Garrotxa areas, it can be distributed as follows:

- **Brief introduction of research objectives:** In this introductory section of the survey, there is a brief description of the author of the thesis and his

studies, followed by an explanation of the relevance of the respondent's answers to the research.

- **Section 1:** Preliminary questions. The first two questions serve as filters to determine whether the respondent resides in one of the rural areas of the Jerte Valley or La Garrotxa. After that, the number of people living in the respondent's location is asked.
- **Section 2:** Demographic questions. This section aims to collect information on the gender and age of the respondents.
- **Section 3:** Consumption preference. This section analyses the respondent's consumption and sales preferences in relation to food products; as well as the degree of relevance of the impact of products on the environment, the interest and availability of selling local products, and the degree of frequency of reviewing food origin and production information.
- **Section 4:** Traditional gastronomy. This section asks about those products that used to be prepared and produced in the past and are no longer done, to explore whether this is due to the lack of availability of some of the products that are part of the typical traditional gastronomy.

Concerning the number of responses obtained, the following were obtained for consumers from Valle del Jerte ( $n=13$ ) and La Garrotxa ( $n=12$ ). In addition, 3 respondents said they did not live in a rural area.

### 4.2.3 Ethical considerations

In developing the survey and interview methodology for this study, key steps were taken to ensure ethical compliance and the protection of participants. From the outset, in both the surveys and interviews, the purpose of the responses and the study was clarified. All participants were fully informed about these aspects and an informed consent process was established. The surveys were conducted anonymously, including an optional section where stakeholders could provide their email addresses if they wished to know the results of the study and contribute their opinions and recommendations in future stages, in line with the action research methodology adopted.

On the other hand, for the interviews, a Google Form was used where interviewees provided their name, the organization they work for, and the position they hold, accepting that this information could be published. However, it is important to note that, although specific details of the interviewees are mentioned to enrich the study, the results are presented anonymously. This measure seeks to protect the privacy of participants' data, ensuring that personal information is not directly linked to the answers provided.

#### 4.2.4 Areas of Research

This section of the methodology introduces the chosen areas: Valle del Jerte (Figure 4) and La Garrotxa (Figure 5), which are pivotal in exploring the impact of SLFSCs within rural contexts.



Figure 4. Geographical location of the region of Valle del Jerte (Left: Location within the Iberian Peninsula and Extremadura. Right: Detailed map of Valle del Jerte county and the municipalities represented). *Source:* Casas Rurales Valle del Jerte, (n.d.).

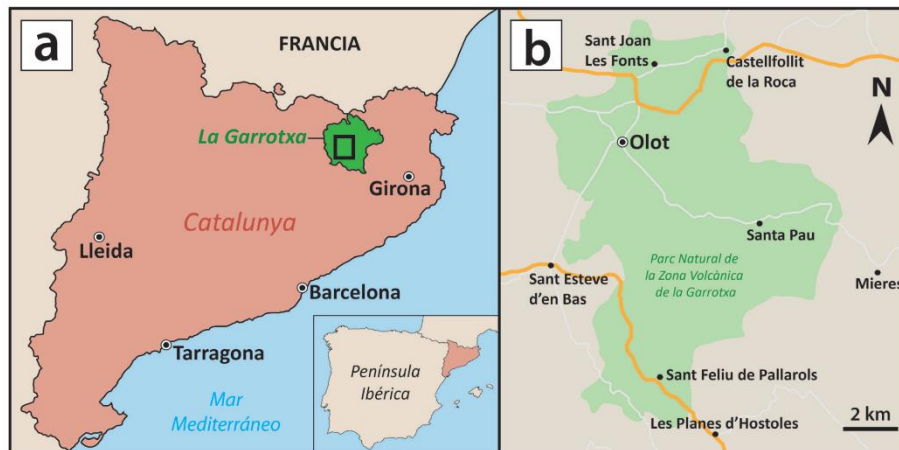


Figure 5. Geographical location of the region of La Garrotxa (a. Location within the Iberian Peninsula and Catalonia and b. Detailed map of La Garrotxa county). *Source:* Oliver Martínez-Fornés et al., (2019).

Valle del Jerte and La Garrotxa, both characterized as rural and somewhat marginal zones, have not been extensively studied, which presents an opportunity to delve

into underexplored aspects of rural development. Valle del Jerte, renowned for its cherry production and cooperative-based economic model, stands out as a leader in fruit exportation, particularly cherries, driving significant economic activity in the region (Asociación Europea para la Innovación (AEI) en materia de productividad y sostenibilidad agrícolas (EIP-AGRI), 2022). In contrast, La Garrotxa does not prioritize agricultural activity to the same extent, and lacks a dominant cooperative model, making it an intriguing comparative counterpart to assess consumer behaviors and the impact of SLFSCs models under varying regional conditions.

The selection of these two areas allows for a representative examination of Spanish rural zones, studying similar Caucasian valley characteristics but located in distinctly different parts of Spain, with diverse economic and social landscapes. Both areas are engaged in agricultural activities, yet their primary economic drivers and social structures differ significantly, offering a broad perspective on the rural Spanish context.

Rural areas<sup>12</sup> are particularly susceptible to challenges such as climate change, depopulation, and economic underdevelopment, which significantly impact local food systems and community stability (Amoak et al., 2022; Soldato & Massari, 2024). Nevertheless, the potential for revitalization exists, spurred by increasing interest in rural lifestyles and sustainable economic practices, supported by policies such as the European Green Deal, which emphasizes agricultural resource allocation and rural modernization (Soldato & Massari, 2024). Direct and regional marketing initiatives in these areas not only enhance income but also bolster local economies, contributing to job satisfaction and reducing environmental impacts associated with long supply chains (Kneafsey et al., 2013).

Research suggests that SLFSCs can significantly contribute to rural economic regeneration by increasing local sales and labor market demand, thus fostering greater economic resilience and sustainability in these regions (Kneafsey et al., 2013). This is the reason why is interesting to research the impact of SLFSCs in order to achieve sustainability and to see if there is an interest in them from the consumer's perspective. The study of Valle del Jerte and La Garrotxa will provide valuable insights into the operational effectiveness of SLFSCs and their broader implications for rural development, enhancing our understanding of how localized and short food systems can support the sustainability and prosperity of rural communities.

---

<sup>12</sup> Rural areas are defined as territories that are situated at a significant distance from main centers that offer necessary services (Soldato & Massari, 2024).

## 4.3 Data analysis

### 4.3.1 Analysis of results of interviews and surveys

Based on the Research Onion methodology described above, a mixed method complex approach is applied, which allows for triangulation of data, thus improving the robustness and depth of the analysis by integrating different perspectives and methods (Saunders et al., 2006). In this way, they complement and inform each other's findings, to provide a more complete understanding of the research topic. The presentation of the results and their discussion are mainly based on the interviews conducted. However, the data collected through the surveys are integrated in a complementary way, using percentages that help to reinforce and contextualize the information obtained from the interviews.

Importantly, the interviews were conducted with the consent of the participants and were recorded using audio notes, which were then transcribed using specialized software such as NVIVO and the VOMO telephone application. After transcription, the methodology of 'open coding' based on grounded theory, in which codes and categories play a central role, was applied. During the first general reading, special attention was paid to the main themes and sub-themes marked by the framework of the interviews. Subsequently, subcategories are defined which facilitated the identification and nomination of codes during a second close reading. This coding process is dynamic and allows for the redefinition of the research questions (Kuckartz, 2014).

The final codes are analyzed using NVIVO to visualize the frequency and distribution of these codes, allowing for quantitative analysis of the results in the sections (such as 5.1 Consumer's Preferences, 5.2 Consumer's Perspectives and Interest for Products from SLFSCs and 5.3 Consumer Profiles in Spanish Rural Areas). Additionally, in 5.4 a qualitative analysis is carried out using SWOT methodology to assess the strengths, weaknesses, opportunities, and threats related to the implementation of SLFSCs, from the perspective of producers.

Finally, different NVIVO functions are used to perform a cluster analysis between the various codes and files. This facilitates the observation of relationships and correlations between different codes and consumer and producer profiles. This advanced analysis makes it possible to identify clusters and establish relationships between the preferences of different consumer profiles, thus enriching the understanding and conclusions of the study (Jackson & Bezeley, 2019).

#### *4.3.1.1 Evaluation of producer's and expert's interviews results*

The utilization of SWOT analysis in this research is guided by its proven effectiveness in strategic planning and management fields, as outlined by (Helms & Nixon, 2010). SWOT analysis facilitates a comprehensive evaluation of internal and

external factors that are critical to the success of projects and initiatives. Specifically, for data obtained from interviews and surveys, SWOT analysis enables the structured categorization and interpretation of qualitative insights, aligning them with quantifiable survey data. This method allows for an integrative assessment of strengths, weaknesses, opportunities, and threats that influence the sustainability outcomes of SFSCs, as shown in Figure 6.



**Figure 6. SWOT Analysis.** *Source:* Xhienne, (2007).

By applying SWOT analysis, this study harnesses a strategic framework that highlights interconnections between different elements, such as leveraging strengths to address weaknesses and converting potential threats into opportunities. This approach not only aids in visualizing these relationships but also provides a practical tool for stakeholders involved in the development and improvement of SFSCs. The goal is to identify critical aspects that require attention, facilitating effective and coordinated actions toward enhancing sustainability (Helms & Nixon, 2010).



## 5. Results and Discussion

*In this section, the results and their corresponding discussion are presented, based on the data gathered through a mixed-method complex approach, which primarily involved data from interviews conducted with consumers and producers and was further enriched by insights from expert interviews in the field. Additionally, quantitative information was also utilized to complement and reinforce the findings derived from the surveys. This quantitative data, mainly represented in percentages, serves to enhance the overall understanding of the issues discussed.*

*The section begins by outlining the consumption preferences and habits of the rural inhabitants of specific Spanish regions used in our case studies: Valle del Jerte and La Garrotxa. It also includes data on consumer perceptions towards locally sourced products. Following this, the discussion shifts to the identification of two main consumer profiles in these study areas. This identification aims to aid those implementing SLFSCs in targeting the appropriate target market effectively. Subsequently, a SWOT analysis is conducted using the data collected from interviews and surveys with producers, supplemented by expert insights. The insights derived from this comprehensive analysis are poised to offer valuable implications for strategic decision-making when analyzing and implementing these SLFSCs models.*

### 5.1 Consumer's Preferences

Consumer preferences from Spanish rural areas are shown below. For this purpose, the results are expressed from both the consumers' preferences characteristics for food products and places of shopping.

#### 5.1.1 Food Products Preferences

It is interesting to observe what consumers in the rural areas investigated value most, with **product quality** standing out as the most relevant aspect for all consumers interviewed. This aspect is difficult to define, so most of the interviewees categorized them as products with good taste, as well as better organoleptic

characteristics, but some others defined them as authentic, natural, or fresh products. This assessment is based on the direct experience of rural consumers, who are used to products obtained from the countryside and therefore recognize and demand high organoleptic quality.

Along with quality, the preference for **seasonal products** is notable. These products are perceived as tastier and healthier, in harmony with natural cycles, which reinforces their attraction to rural consumers. Other aspects also relevant to these consumers are shown below but are described in descending order of interest. Therefore, following the aspects mentioned above, **health and the absence of food processing** are among the preferred ones, as customers showed a clear preference for fresh products over ultra-processed or pre-cooked products. Some even stated that they prefer to cook fresh products themselves, even though this may mean more time spent. This is in line with survey results, where 72% stated that this was a relevant factor. For transformed products, respondents were also interested in the **relevance of food ingredients**, discarding those with sugars and other elements such as additives. The **transparency of product traceability** is also highlighted, which is perceived after learning about the producer's way of working, both in terms of the conditions obtained by the producer for the sale of these products, as well as the knowledge of how the products are treated during their production. **Price** was also mentioned as an aspect to be considered; and regarding the surveys, 52% considered it to be something important to consider. Respondents mentioned on several occasions the purchase of store brand products compared to conventional brands in the case of products that offer only the same organoleptic qualities; 24% of the survey respondents give importance to this. According to respondents, the origin of the product was important for 24% of the respondents as well.

Despite their lesser importance, interest in **unpacked products** was also mentioned, as well as products with a **longer shelf life**, which do not spoil quickly, and products that are **slightly preprocessed**. Finally, those aspects mentioned, but to a lesser extent, were the **quantity or size of product** purchase, mainly because they help to prevent spoilage, and **organic products**, due to their better nutritional profile about the ingredients they contain. Of the survey respondents, only 12% stated that they considered the environmental impact of products; and the same number of responses were selected for consumers who considered the product to have fair price characteristics for the producer.

It can be said that rural consumers show a clear preference for fresh, seasonal, minimally processed products, with a significant emphasis on organoleptic quality and transparency in production. These preferences are shaped by their proximity and familiarity with agricultural production, valuing aspects that reinforce the consumption of natural products and health in their diet. Quality and freshness outweigh other considerations such as price, although these also play an important role in the purchasing decision.

### 5.1.2 Shopping Place Preferences

Concerning the questions on usual places of purchase, interesting patterns were identified in Valle del Jerte and La Garrotxa, highlighting regional differences in the acquisition of food products. Respondents in both areas confirmed that, although they frequent supermarkets, it is common to obtain produce from their own crops or from relatives, highlighting the prevalence of exchange in these communities. Specifically, in the Jerte Valley, many consumers obtain produce directly from their orchards, while in La Garrotxa, the range of products and outlets is wider, with a notable focus on local production and sales models, that match models of SLFSCs.

The analysis revealed that, after **supermarkets**, the most frequent purchasing modality is **direct sales to producers**. This option is followed by **small local shops**, which often offer regional products. **Weekly markets** are also an important point of purchase, although to a lesser extent. **Online sales**, although occasionally used for specific products, have not attracted much interest among consumers, who generally prefer the direct shopping experience and express concerns about quality control during food transport. When consumers were asked in the poll whether they would be willing to sell food over the Internet, only 32% answered positively. Some 28% of respondents thought they might be, and 32% said they were not interested. Interestingly, 16% of responses were for the statement that they would do so if the products were local or artisan; 12% for the statement that the price of shipping would be something to consider; as well as lack of confidence in this type of product was selected 8% of the time; and 4% for the statement that they would only do so if the products were cheaper.

From a qualitative perspective, the aspects most valued by consumers include **personal relationships with retailers** (this received 40% of the responses rate in the surveys), especially outside supermarkets. This dimension is particularly significant in small towns, where relationships and trust between people are crucial. Consumers appreciate the personalized advice they receive on recipes and products, reflecting a high valuation of personalized customer service. After this aspect, the next most important (in descending order) is the **offer of local or regional products** (as it was highlighted on the poll with 36% of answers), followed by the relevance of **long opening hours** to allow consumers to shop, then the **convenience** of getting most of the products needed in a single act of shopping at the same place, as well as other aspects mentioned such as the **variety** of products offered and **promotions**. Even though, in terms of specific preferences revealed by the surveys, 52% of participants mainly valued the variety of products available. Only 12% survey's answers considered the amount of information about the food they received to be relevant.

In conclusion, the importance of local shopping dynamics and personal relationships in rural areas is highlighted, as well as the preference for a diverse range of products, which makes them frequent supermarkets. Although, the appreciation of the origin

of the product motivates them to buy directly from producers, or even from small or local markets and shops.

## 5.2 Consumer's Perspectives and Interest for Products from SLFSCs

The results on the perception and expectation of products from SLFSCs by consumers in the rural areas studied are shown below. These aspects mentioned during the interviews are described throughout the section in decreasing order.

Consumers' perceptions of local products are influenced by their perception of the **limited diversity** of these products compared to the wide range offered by supermarkets. However, the results of the interviews reveal salient aspects that drive the attraction to purchase local products. These include the **satisfaction** derived from sourcing local produce, the **trust** generated by the traceability of the products (this factor was considered a priority for 60% of the survey respondents), and the support this practice provides to the **local circular economy**, boosting regional tourism and strengthening its economic base. Even the results of the surveys show that 80% of respondents positively value the impact of buying local products in **supporting farmers**.

In addition, the conclusions drawn from the interviews reflect less frequent but equally relevant perceptions, such as the fact that some consumers highlight the **higher organoleptic quality** of these products; this characteristic was considered by 40% of the survey's users. Their contribution to **environmental preservation** is also highlighted, as 32% recognize them as more environmentally friendly. However, concerns are also identified, such as the possible **lack of quality control** along the supply chain. Some of the interviewees recognized the benefit for local producers of trading these products, as well as the fact that they are **often unpackaged** products, also perceived as **healthier** (as 36% of the respondents to the questionnaire considered it), although with a **higher associated cost**. Only 16% of poll respondents perceive them as cheaper, in contrast to 12% who perceive them as more expensive.

The survey showed a strong interest from the local consumers for the local products, as many as 84% of respondents answered that they would buy local products if there was a place to do so. The remaining 16% mentioned that they might do so, and none of them said they would not. However, 44% of respondents stated that they checked the origin and production processes of the food they buy, compared to 44% who confirmed that they do so infrequently and 12% who were in an intermediate position. In addition, since 32% identified such products as environmentally responsible, it was decided to ask about the relevance of responsible products in

purchasing decisions. In relation to this, 44% considered it important, 16% not relevant and the rest, 40%, placed it in an intermediate ranking.

Overall, the findings show that consumers have different views on products from SLFSCs, with perceptions of limited variety, but counterbalanced by positive aspects such as satisfaction in buying local products, confidence in their traceability, and support for the circular economy. While benefits such as higher organoleptic quality and support for local producers are recognized, concerns are also raised about quality control in the supply chain. However, consumers value their positive impact on aspects such as agricultural support, perceived healthiness, and their contribution to the environment, as reflected in survey results.

### 5.3 Consumer Profiles in Spanish Rural Areas

The previous section (5.2 Consumer's Perspectives and Interest for Products from SLFSCs) demonstrated the general interests of consumers in rural areas in Spain. However, in this section, the fundamental differences between consumer profiles in rural areas of Spain are addressed, highlighting two groups that emerge as the most contrasting and disparate, namely the 'Busy Consumer' and the 'Culinary Enthusiast'. It is worth noting that other types of consumers have also been observed within this spectrum, such as most of the participants, who tend to combine local sales to small shops in their rural area with those of large supermarkets that offer a wider variety. However, it is interesting to study these more disparate differences between consumers, to be able to group different profiles and to further focus and understand the market for products from SLFSCs models. Therefore, the main consumer profiles discovered through the consumer surveys in rural areas of Spain are shown below:

- "Busy Consumer": This consumer, conditioned by their work schedules, prioritizes convenience, which leads them to frequent supermarkets where they can access a wide variety of products in a single visit. Despite their preference for practicality, this profile also shows a significant interest in the quality, nutritional profile, and origin of products, although their purchasing decisions are mostly influenced by availability and convenience. They value promotions and products with a long shelf life, as this allows them to space out their visits to the supermarket.
- "Culinary Enthusiast": This profile invests time in food selection and preparation, deeply valuing traceability, history, and connection to local producers. This consumer focuses on nutritional quality, the social and economic impact of their choices, and enjoys cooking not only as a necessity but as a central element of their daily lives and a way to strengthen family and community ties. They prefer to buy directly from producers in local markets, valuing the opening hours of these markets due to their lesser

availability. This group is interested in the freshness and local origin of products, showing a preference for a more personalized and direct approach.

Although, in general, consumers in rural Spain place a high value on food quality and wholesomeness, it is important to differentiate between participants' understanding of these concepts, as this is what makes the main difference between different consumer profiles. This starts with each profile's consideration and understanding of the food itself. The "Busy Consumer" has a perspective towards food as a product in itself, relating healthiness to the profile of ingredients shown in the nutritional labeling, and quality as an aspect more related to the organoleptic characteristics of the product, such as taste and smell. This type of consumer questions the impact of their purchasing decisions on the work of other actors in the food chain, as in the case of the producer. However, in its most extreme polarity, there is the case of the 'Culinary Enthusiast' profile, who is used to experimentation in cooking and diet, understanding food quality and healthiness from a more complex and abstract point of view. On the other hand, these aspects are associated with the seasonality of food and especially value the 'authenticity' of a specific product from a specific region and place with organoleptic characteristics that make it different from all the others; in this case, the personalized recommendations provided by the retailer are especially valued, both for culinary proposals and personal tastes. This profile places special emphasis on the relationship with the 'history' of the product and values the trajectory and traceability that the product has followed, as well as the direct relationship with the producer is interesting.

It is recommended to focus SLFSCs models towards profiles such as the "Culinary Enthusiast", as this is the target market due to the value that this type of consumer perceives towards products with more specific origin characteristics. Furthermore, the most frequent places of purchase for this type of profile correspond to places where fewer intermediaries have intervened during the supply chain, and this is what fits with the interest of the study, which seeks to raise the possibility of increasing SLFSCs models for producers in these local areas, avoiding the intervention of intermediaries and increasing the connectivity between producers and consumers.

## 5.4 Main Barriers and Drivers in the Adoption of SLFSCs

In this section, we proceed to study the impact of SLFSCs using the results from both producer's and expert interviews, as described in 4.2 Data collection. The impact of this type of model has been analyzed through the holistic view provided by the SWOT analysis, analyzing the internal and external characteristics that affect the implementation of SLFSCs models.

A representative visual summary of strengths (internal origin and helpful), weaknesses (internal origin and harmful), opportunities (external origin and helpful) and threats (external origin and harmful) can be seen in Table 3.

**Table 3. SWOT Analysis.** *Source: Own elaboration, 2024.*

	<i>Helpful</i>	<i>Harmful</i>
<i>Internal Origin</i>	A. Connectivity	A. Volume limitations
	B. High organoleptic product quality	B. Logistics & packaging
	C. Reach consumer's demands through innovation	C. Increased burdens
	D. Food waste reduction	
	E. Less packaging usage	
	F. Producer's economy diversification	
	G. Participation	
	H. Producer's interaction	
<i>External Origin</i>	A. Inclusion of native species	A. Weather & climate change
	B. Promotion of the area	B. Consumer's mindset
	C. Business Opportunity	C. International capitalist market pressures

### 5.4.1 Strengths

#### *A. Connectivity through interaction between producers and consumers*

Almost all producers mentioned that the direct relationship with the consumer, as in the SLFSCs models, has allowed them to obtain a high degree of communication and feedback on their products. While the consumer provides feedback and recommendations, the producer has the opportunity to explain the reason for the price of the product, how it has been prepared and the process of obtaining the food, which allows the consumer to have a more realistic idea and awareness of the life cycle of the product. This connectivity and interaction between the consumer and the work of production, through the close relationship with the farmer, allows the customer to also have the value of participating in the decisions that are made in this food system; further contributing to food sovereignty.

In addition, a close bond is generated in which purchasing decisions are not based on the mere quality of the product, but also on the relationship between this producer and/or seller. The direct and personalized treatment is highly valued, as well as the information received about each product, which helps to increase consumer confidence in the product. It has also been indicated that sensitivity and connectivity

with the consumer are realized not only through personal interaction but also through online sales.

The consumer often expresses satisfaction with the product, valuing the high quality of the product, which makes the producer feel more satisfied. The latter is encouraged to put more emphasis on his work by having this close relationship and communication with the consumer, which makes the producer value his work more and the consumer as well, which allows the customer to repeat his purchasing decisions. This communication is not only expressed individually, but through the consumer groups, different consumers are allowed to communicate different factors to the rest of the producers, within a common network of contacts.

Several experts interviewed expressed the importance of disseminating and educating consumers about the relevance of the impact of practices they endorse on the sustainability and resilience of the place in which they live, reflecting this need for change in the long-term effects of their non-implementation on both the environment and the community itself. The impact of the lack of connectivity between producers and consumers has even been observed in the lack of responsibility on the part of the former, who have recognized that there is a difference in production between crops destined for sale and export and those destined for their own consumption (in which less pesticides and inputs are applied). With this last example, there is a disconnect between work and the values and personal considerations of food.

However, despite the benefits of this interaction, 66.7% of respondents rated the impact of consumer purchasing decisions on their work as relevant; however, only 33.4% felt that they had a high level of communication and connection with the end consumer, reflecting the need for increased connectivity between these actors.

#### *B. High organoleptic product quality*

As previously mentioned, the potential of products belonging to SLFSCs due to their high organoleptic quality allows differentiation of these products in the market, as well as contributing to the loyalty of customers who enjoy these attributes and positioning the products in a more premium market than the conventional ones (Testa et al., n.d.).

#### *C. Reach consumer demands through innovation*

All the information received from the consumer to the producer provides valuable consumer insights that the latter uses for his contingency plan, which means that the farmer/supplier can modify and include new products in his market, innovating and offering products that are highly oriented to the consumer's demands. It has been concluded that thanks to the small number of intermediaries, that offer this direct connection between these two users, this ability to innovate is simple and possible. Even on the producer's side, it is possible to convey the reason why it is not possible to offer what the customer would like.



Innovation is essential in improving the food system; however, it has been observed that in organizations and cooperatives, this is a challenge since older people impose more barriers when it comes to doing so.

#### *D. Food waste reduction*

By being able to adapt to consumer demands, it is possible to reduce food waste. It has been confirmed that because food has a shorter shelf life until it reaches the customer, fruit and vegetables do not need as long a transport time as they do through longer food supply chains, which means that less produce is wasted. In addition, the producer often uses the opportunity to use fruit and vegetables that do not meet the required standards to produce transformed assortments that give the product a longer shelf life, as well as add value.

#### *E. Less packaging usage*

Throughout the SLFSCs fruit and vegetable sales models, it has been specified that there is no need for packaging, as these products are usually sold in bulk form. Compared to the sale of longer supply chain models, these do not need to be distributed in packages containing specific quantities of fruit and vegetables.

#### *F. Producer's economy diversification*

Using SLFSCs models is an advantage and an opportunity for producers to diversify their economy. In the case of those who usually work with cooperatives, which are in charge of selling and distributing the product, they have the possibility of distributing their products to local shops and markets; they also have the option of working with consumer groups; to engage in product transformation; even cooking workshops, crops and other options such as participation with volunteer programs like WWOOF (World Wide Opportunities on Organic Farms); or through educational entities, where it has been considered that it is really important to act through communication and instruction.

It is an opportunity for the producers to dedicate themselves to what they are most interested in, exploring different areas, models, and ways of producing and offering the food they harvest.

#### *G. Producer's participation & ownership*

Through direct sales models, producers have the power to decide on the aspects they consider necessary, although always following the established regulations and legislation. One aspect that takes on great relevance when making decisions within the food chain is that of being able to adjust the price that is considered necessary and fair, both for the producer and for the consumer. The reduction of intermediaries allows the agro-producer to obtain a price that is considered fair enough on his part, while at the same time, the price of the final product obtained by the customer is not increased. This is also beneficial in the case of cooperative models, in which no

mediator needs to make a profit from his activity, as all member producers are part of the organization to which they belong.

In addition, the interaction between producers is also interesting between different generations. While the younger ones are more willing to innovate, but lack the necessary experience, the knowledgeable ones can complement this gap.

#### *H. Producers' interaction*

SLFSCs have benefited from the networks of producers that exist both through a more informal and conventional organization, such as today's more informal networking through online platforms and consumer groups, as well as through more structured organizations such as cooperatives. Interaction between producers allows individual work to be reduced, knowledge to be shared and conferences and workshops to be held, which in the end allows a better product and quality to be offered. Furthermore, it has been seen that these networks of connection are really relevant when it comes to offering variety to the consumer; offering a diverse assortment of food from different producers, as is used by those producers in charge of selling baskets of products. According to the experts interviewed, the greater the variability of products offered by the farmer, the more purchases were generated by the consumers when valuing this aspect.

One of the experts who participated in the interviews stated that, in the Valle del Jerte area, the best way to empower small farmers is through cooperatives. The importance of participating and contributing actively in the cooperatives is stressed, giving value to constant innovation.

### **5.4.2 Weaknesses**

#### *A. Volume limitations*

The large supply of seasonal fruit and vegetables has limited volume to cope with all the supply offered to the market, as is the case specifically with the cherry market in the Valle del Jerte (Asociación Europea para la Innovación (AEI) en materia de productividad y sostenibilidad agrícolas (EIP-AGRI), 2022). The SLFSCs have been considered limited in this aspect due to the lack of population to satisfy their demand.

#### *B. Logistics & packaging*

The lack of population in the region and/or specific population where the farmer harvests, means that the farmer is forced to export his products to nearby areas or where his production supply can be covered by enough demand. This is a greater challenge in areas with lower population density, isolation, and large distances between towns, as is the case in the Jerte Valley and its enclave in the Autonomous Community of Extremadura, where harvesters are normally obliged to export their products to cities, such as Mérida or Madrid, which have a higher population

density. Furthermore, 53.3% of respondents confirmed their interest in selling their products online; however, it is relevant to take into account the dependence on optimizing logistics through this type of distribution, as 66.7% of respondents confirmed that this was the main obstacle to selling their production through SLFSCs models. However, it is pertinent to note the low interest of consumers in this type of sales for food products.

The cost of bearing the transport costs makes the final product more expensive, thus losing one of the main advantages of products sold through SLFSCs. In addition, in the case of products that require refrigeration, the cost and energy expenditure is really increased. Therefore, it has been seen that the most feasible solution for the distribution of food products is for the producer himself to carry out the activity through collaboration with other producers, or from the organization with consumer groups.

In the case of processed products, there is the added problem that packaging greatly increases the final cost of the product, due both to the price of the packaging itself and to the weight it adds during transport, once again increasing the cost of the food, and damaging the possibility of offering fair prices and accessibility that uphold the principles of food sovereignty. The weight of the packaging is particularly relevant for those whose material is glass, which has been indicated as the preferred material by retailers, due to its reusability and more environmentally friendly capacity. However, the container in processed foods is essential due to the need to ensure food safety, and it is impossible to deny its use. Experts interviewed confirmed that 60% of the value of the final product is attributed to packaging and logistics costs. This price increase is even higher when small volumes are involved.

In addition, intermediary actors in the supply chain have expressed concern about the high prices of packaging and the monopoly that such companies are achieving. This allows prices to be driven up and controlled by only a couple of companies, which are not even locally sourced.

### *C. Increased burdens*

The inclusion of SLFSCs production models implies a greater effort on the part of the producer, who normally has to take on the work of a distributor, or salesperson, making himself known to consumers, establishing constant communication with the client, as well as assuming the costs that this entails, such as energy costs. The same is true at the administrative level, as the level of bureaucracy and work that the producer dedicated to the distribution of products on this type of SLFSCs model has to deal with is considerable.

The interviewees have claimed to be dedicated to the implementation of more sustainable models committed to food sovereignty and the environment because of personal interests and values, which they do not perceive to be supported by governmental bodies, thus demanding a change and reform in policies related to different aspects of the food system. These policies currently do not support

products that are input-free, include social justice values, and have a low carbon footprint, among other aspects. In addition to this, and as explained above, interviewees are not only demanding policy reform but also from the consumer side, whose decisions are essential in supporting more sustainable and resilient food systems.

Even from the consumer side, it was also seen that organizing through consumer groups also requires a personal effort, which means that in this case, the customers of this coordination strategy must have a profile like the ‘Culinary Enthusiast’.

### **5.4.3 Opportunities**

#### *A. Inclusion of native species*

The inclusion of native varieties of fruit and vegetables allows for better adaptation to climate change, as they are more robust varieties such as non-hybrids, and to more severe environmental conditions, as well as through good treatment of seeds that are used to growing with little water (Altieri, 2008). In addition, this product durability and production resistance contributes to reducing the use of chemical products, offering healthier products, reducing food waste, and contributing to preserving cultural gastronomy,

It should be noted that specific certifications of place and origin contribute enormously to protecting these traditional varieties and products, as is the case of the ‘Picota Ambrunés’ cherry variety protected under the PDO (Protected Designation of Origin) certification (Slow Food Extremadura, n.d.). Fleury et al., (2016) emphasized the significance of implementing this safeguard system for agricultural products and foods that are cultivated and processed in a specific geographic region using concreted and recognized methods.

#### *B. Promotion of the area*

The identity of the territory is considered relevant when it comes to establishing respect for the environment, both on the part of the farmer and the inhabitants of the rural area. It has been observed that there is greater support for this type of market in those areas where cultural identity is stronger, as in the cases of the Basque Country and Catalonia, regions that have a language other than Spanish.

Experts interviewed suggest the importance of investing in branding and improving brand image, as in the case of the Valle del Jerte cherry, a product linked to a territory. As (Asociación Europea para la Innovación (AEI) en materia de productividad y sostenibilidad agrícolas (EIP-AGRI), 2022) expressed, this product is a reference worldwide, however, the current competition with other Spanish regions is positioning the product negatively. It is recommended to increase connectivity between producers and consumers so that the latter are aware of the type of unique and responsible production that the environment, villages and family

farms can survive, this model being an example worthy of being valued. Garrido et al., (2010) even endorses the organoleptic potential of these cherries, which contain the three antioxidants: melatonin, serotonin, and tryptophan, in sufficient quantities to be assimilated by the human body. In order to communicate these benefits and make the consumer aware of them, it is necessary to invest in advertising and marketing, which is currently far below what is necessary. In the case of the main production of cherries from the Valle del Jerte, the PDO certificate is the one that absorbs the main weight of advertising and marketing activities through the branding of the varieties 'Picota' and 'Navalinda'.

### *C. Business Opportunity*

53.3% of respondents confirmed that it was advantageous to sell their products directly, compared to 26.7% who did not consider this to be the case. Of these, 20% said they were already doing this type of selling; 53.3% said they were interested in doing it online, 13.3% said there were no places to do it, and 6.7% said they were interested in local shops. Considering that only 26.7% of the poll participants confirmed that they were not interested in selling through SLFSCs channels, compared to the rest who were, positive results are established for this model to be an interesting business opportunity in the rural areas studied.

It has been seen that the majority of producers dedicated to selling their products through SLFSCs models share common values of responsibility toward sustainability. Therefore, agroecological production represents an opportunity to benefit in the market, especially if this sale is oriented to the right consumer profile, as expressed in 5.3 Consumer Profiles in Spanish Rural Areas. Offering products oriented to the needs of this specific type of consumer, as in the case of the "Culinary Enthusiast", provides access to an interesting market niche.

Furthermore, it is through education and communication that the rural population of these areas can be made aware of the impact on their purchasing decisions and the relevance of SLFSCs' support. Once the preferences and purchasing decisions of rural areas are known (as shown in section 5.1 Consumer's Preferences and 5.2 Consumer's Perspectives and Interest for Products from SLFSCs) it is possible to better understand the needs and desires of rural consumers in order to target communication appropriately. Experts interviewed have stated market differentiation through communication and transparency of the cultivation and harvesting process. This is an opportunity when it comes to specific geographical areas with relevant tourism potential, especially due to their natural environment.

## **5.4.4 Threats**

### *A. Weather and climate change*

Farmers in the La Garrotxa area have expressed their concern about droughts, which affect their crops considerably, and have also reported experiencing changes due to

climate change over the years. However, something different is happening in the Valle del Jerte area, where farmers claim that the greatest losses are caused by unexpected rainy periods, assuring that the effects of climate change are not yet having an impact in this area.

### *B. Consumer's mindset*

Consumer decisions have a major impact on the food chain and therefore on the work of the producer. The interviewees expressed the need for a higher level of communication and education for producers regarding their purchasing choices, in terms of understanding the work involved in production and intermediate steps in the food chain in terms of price impact; as well as understanding the appearance of the food and the presence of organic components; and valuing the efforts of producers whose work is more laborious, both for those engaged in manual agriculture in complex areas such as in mountainous areas, and those engaged in organic and seasonal agriculture, which has certain production limits.

In the case of the Jerte Valley, the impact of consumer decisions are highly impacted by the loss of local varieties such as the “Picota Ambrunés”, which is in decline in the market due to the loss of its economic value and, therefore, low profitability. Farmers have attributed this to two main reasons (mainly due to a lack of knowledge of this product and its different varieties and characteristics): consumer preference for varieties of cherries sold with stalks, which is not the case for the “Picota Ambrunés” variety; and their purchasing decisions based on visual appearance rather than flavor, since this variety is smaller than others on the market, despite claims that it has better organoleptic characteristics. Something similar also happens with the variety of cherries “Navalinda”, which the farmer does not perceive as profitable due to its lack of acceptability in the market and problems during its logistical journey as it is a product with a softer texture than the rest (which makes it worse in relation to organoleptic attributes when a long transport of the product is required). In addition, these problems are compounded by the complexity of harvesting, which is manual, of this type of varieties.

### *C. International capitalist market pressures*

The intervention of the liberal capitalist market is direct competition for SFSCP models at the price level, which are often threatened by the importation of products where labor is cheaper, and controls and bureaucracy are much less restrictive than those required by the EU. This is something that really needs to be taken into account in the case of Spain, which is at a close distance from Morocco, which is not part of the EU and whose product is often offered at a much cheaper price than products from within the EU. As well as the complexity of competing against more mechanized and intensive production models in the face of manual agriculture with the limits of clothing, as is the case in mountain areas.

### 5.4.5 SWOT Analysis

First of all, it is worth mentioning that for the analysis of the interactions between the different strengths, opportunities, weaknesses and threats, an attempt has been made to represent them visually, in order to facilitate the drafting of the interaction between the different internal and external factors. This representation was done by means of a Cluster Diagram and a Mind Map, which can be seen in Appendix D.

Starting with the case of increased connectivity between producer and consumer, we can see how this means a more personalized service for the customer (which is really valued), as well as greater trust thanks to the relationship that is created between the two actors. On the producer's side, there is great satisfaction in seeing that their work is valued and that it allows for a close and personal bond that is different from that obtained through the sale of LFSCs. This interaction between actors allows the producer to obtain a frequent customer, which ensures his economic stability.

In addition, direct communication between consumer and producer is facilitated through SLFSCs where there are no intermediaries. This allows the producer to gain consumer insights that enable him to use innovation to improve his portfolio, and to adapt orders and production to the customer's needs. Even if they decide to resort to the use of processing techniques, this adds value to the product and further diversifies their portfolio and economy; it also gives them the possibility to explore different areas that give them more satisfaction in their work. Furthermore, this direct interaction allows the decisions and needs of the users of this food system to be taken into account, thus allowing for individual participation and decision-making, as advocated by the principles of food sovereignty. This allows for fair prices to be adjusted, which is achieved with little difficulty by reducing the capacity of intermediaries.

Recommendations and feedback received from customers can be shared with other producers in order to better adapt to their needs. A model of cooperation and not competition is proposed, as it also advocates food sovereignty (European Coordination Via Campesina (ECVC), 2018). This collaboration between producers allows for a more diverse offer to the customer, thus addressing the consumer's perception that products from SLFSCs are not varied and limited. This cooperation, as occurs through cooperative models, reduces the labor burden on the farmer engaged in SFSCP models. Such organizations have also been suggested to be created through networks of shops to make possible the availability of local products.

It is interesting to study the impact of the threat of weather and climate change, which directly affects most of the production losses and food waste, as well as being one of the main concerns of all seasonal crop farmers, as is the case for those living in the areas studied. Therefore, the impact of the promotion and inclusion of non-hybrid and more resistant native species is of interest. The inclusion of these

varieties has an impact on biodiversity, as well as on the preservation of local gastronomy and with it, the ease with which individuals have access to culturally appropriate food. In addition, this provides an opportunity for tourism and the promotion of the natural area, which contributes to rural development and is an additional activity that supports the local economy. However, these are not the only benefits of including more resilient native varieties, the use of these varieties can reduce the use of inputs and pesticides, which also provides healthier and tastier products. It has been observed that foods grown with fewer chemical inputs have better organoleptic characteristics (Çakmakçı & Çakmakçı, 2023); this allows the customer to obtain a better quality of products, which is also really valued by consumers as already seen in section 5.1.1 Food Products Preferences. This allows differentiation and positioning of food goods, really appreciated by the “Culinary Enthusiast” consumer profile and opening a new business opportunity. Therefore, in order to obtain the above-mentioned benefits and to achieve market differentiation, it is proposed to include agro-ecological production models. As indicated by the specialists consulted, farmers need to take action and be aware of the most severe consequences that the environment will have on their surroundings, and it is, therefore, urgent to take measures to anticipate these problems and to respect the natural environment and resilience.

However, despite the advantages of including native species and the production of agro-ecological goods, the consumer's mentality is really valuable in their purchasing decisions. Therefore, it is important to increase the number of consumers residing in these areas who can be part of the target market of the proposed model and therefore, it is proposed to achieve this through communication actions to increase their awareness and relevance. This consumer awareness of the valuable work of the producer, the impact on the environment, the importance of their support and other aspects can be achieved through a more direct relationship of these people with the work of the farmers and the knowledge of the work in the field, as well as the well-known “Farm to Fork” concept. Moreover, the emergence of more and more models of SLFSCs also encourages producers and other actors to opt for this type of business, setting an example for the rest. Since, as seen in the farmer surveys, 20% of the responses were received by the argument that these farmers considered the main obstacle to implementing such business strategies to be lack of knowledge, the reason for considering lack of financial resources was also voted for 20% of the time.

Despite the strengths and opportunities that SLFSCs models can bring, it is important to mention the limits that SLFSCs have and that is that a small demand cannot absorb the large supply generated during the fruit and vegetable season, as is mainly the case in the Jerte Valley during the cherry and other fruit season. Therefore, due to the lack of population in the area and with it, the insufficient demand, the production is forced to be exported. Transport becomes an essential element in achieving these objectives, generating an environmental impact as a result of CO<sub>2</sub> emissions which increase the greater the distances involved, being



logistics is the main challenge (European Commission, 2023). In addition, in the case of products that require cold transport, the cost of energy and price is increased, especially in the case of packaged products where these costs are even higher. Therefore, logistics is the main challenge, which is proposed to be addressed through the scaling up of SLFSCs. In addition, experts interviewed have suggested the need for actors in the supply chain to act in the role of ‘intermediate facilitator’. The role played by this type of intermediary can be at the level of distribution, transport, in-store sales, or any other activity that is considered necessary and allows the producer to focus specifically on his or her work. It should be made clear that this role should facilitate participation and connection between producer and consumer, not hinder it, as suggested by the SLFSCs. A structure of few intermediaries must be maintained, a low ecological footprint must be met, and the relationship between producer and consumer must be sufficient for a fair price dialogue to be possible. Remarkably, the producer's approach and connection to more direct contact with markets and distribution points is facilitated but always maintaining the power of decision in the food chains for the small farmer and consumers. However, when it comes to products that do not need to be packaged, the use and cost of packaging are greatly reduced, as they are transported and sold in bulk form. Even this factor of unpackaged products is appreciated by the consumer.

It should be noted that producers are offered the opportunity to complement and diversify their own economy through SLFSCs models that allow the sale of part of their production in the local area. The approach and study of this type of model are not intended to compete with the Large Food Supply Chains that form part of the current global model, but simply to offer new possibilities to the rural and marginal environment that follow the principles of sustainable production and consumption models based on the principles of food sovereignty.

This research has confirmed the essential role of the producer in the food system and how their actions and contributions are essential for the transition towards sustainable and resilient food systems. Their empowerment, recognition of rights, and power to participate in decisions are more than essential for their work to be empowered and recognized, as food sovereignty arguments assert. The weight of farmers in food systems is crucial, yet their work is not valued by society and people in these rural areas are brought up in an environment where dedication to farming as a profession is to be avoided, as is especially the case among the young population. Interviewees have blamed the cause of this problem on the old feudal model where in Spain, most farmers were always pawns of a landowner, which implies that this work was considered as a ‘lower’ social class.

It is important to ensure the importance of the consumer's decisions, who often is not even aware of this impact and is unaware of the steps taken by the product along the food chain, making it even more complicated to raise awareness and communicate the need for a transition towards sustainable food models. It is important that the consumer gives greater relevance to food and their purchasing

decisions (which are part of a daily and necessary act such as eating and cooking) so that the work of small-scale farmers who are fighting for this transition is valued. SLFSCs models have an opportunity for small change and transition that begins with consumer awareness and support. This awareness proposes to start in rural areas, where people value and know the quality and origin of local food. However, there must be more options to suit their needs and constraints of work and convenience, such as through the opportunity to develop processed products; or even models of culinary proposals that create a distinction in the market and avoid competing with the services offered by the supermarket.

It was found that within Spain and rural areas, the Basque Country and Catalonia offer more alternatives for the production and sale of SLFSCs. This has been attributed to higher purchasing levels, which allow markets to find supportive buyers. Concerning what was found in the interviews and mentioned by the professionals, SLFSCs models benefit more in the area of La Garrotxa (Catalonia), compared to those of Valle del Jerte (Extremadura), due to a strong Catalanist cultural identity and a strong association with the landscape, as well as a higher purchasing power. On the other hand, in the Valle del Jerte area, the inhabitants do not have such a strong awareness of the need to support local production, even though there is also a strong identity of the territory, and the economic purchasing power is lower. However, in the specific case of the Jerte Valley, there is more and more awareness; nevertheless, the offer is still limited, and it is important to make special mention of those retailers who provide the inhabitants of these villages with the opportunity to purchase these products and also set an example for the rest of the establishments and actors.

## 6. Recommendations and further suggestions

*Based on the results obtained, different recommendations and further suggestions are proposed. Many of these proposals have been added in the Cluster Map, section Appendix D, where the interaction between the various factors previously analyzed is explored.*

In relation to the recommendations and further suggestions, there are several areas in which it is suggested that more knowledge be gained, such as the following:

- Studying the impact of cooperatives or collaborative networks among producers is considered an interesting strategy to scale up SLFSCs, through MTSCs; as well as fostering communication among them on consumer insights, resources and market strategies that allow for reducing the workload, cope with the main challenge of logistics and increasing the diversity of products offered.
- It is hinted to explore emerging technologies and innovative logistics models that can be adapted to the specific needs of SLFSCs, thus minimizing the environmental impact of transport and optimizing the costs associated with packaging and distribution.
- It is recommended to study the relationship between a region's cultural identity and the acceptance of SLFSCs models to improve marketing strategies and local adaptation. To this end, it is interesting to analyze and adapt strategies to the cultural and economic particularities of each region.

## 7. Conclusion

*Based on the information obtained from the results and their discussion, the following conclusions are presented in response to the research questions previously specified in the study.*

The primary objective of this study is to assess the impact of SLFSCs on sustainability in rural areas of Spain, focusing specifically on the regions of Valle del Jerte and La Garrotxa. Utilizing a mixed-method complex approach, this research integrated survey data from food system users, primarily producers, and consumers, supplemented by expert insights. This approach allowed for a comprehensive analysis of the sustainability impacts of SLFSCs, framed within the concepts of food sovereignty and agroecology<sup>13</sup>.

Despite challenges in data collection, particularly the limited responses from producers in La Garrotxa, the information gathered was insightful. Interviews were conducted with six consumers, five producers, and five experts, alongside fifteen producer surveys and twenty-five consumer surveys.

Throughout the consumers' interviews and survey answers, the first research question was addressed: *What are the needs and desires of consumers in rural Spain?* The results highlight a strong valorization for the quality of food products, which was referred to as taste and organoleptic characteristics. Along with quality, consumers exhibit a strong preference for fresh, seasonal, and minimally processed products, which are usually considered healthier ones; for this reason, the ingredient content is also something they pay attention to. Consumers value transparency in production and traceability, which are closely linked to their appreciation for local

---

<sup>13</sup> Food sovereignty provided a theoretical basis for understanding sustainability in food systems, emphasizing the right of communities to define their own food systems. Practical applications were examined through the lens of agroecology, whose principles guided the development of the interview framework and the attributes analyzed.

products that support regional economies and offer health benefits. And while price is a consideration, it is often secondary to quality and freshness.

Besides, pertaining to their shopping habits, overall, the data from Valle del Jerte and La Garrotxa indicates significant regional differences in consumer purchasing preferences. Although supermarkets remain a common choice, there is a strong tendency towards sourcing food products from personal or familial agricultural outputs, emphasizing the role of local exchange in community cohesion. This preference underscores a larger trend where, after supermarkets, direct purchasing from producers is the most favored option, followed by small local shops and weekly markets. The study also highlights a considerable appreciation for local products and personalized customer services outside supermarket chains, which aligns with the high value placed on personal relationships and trust in rural shopping environments. Despite limited interest in online food sales due to quality concerns during transportation, there is a noticeable willingness to adapt if conditions such as local product availability and cost considerations are met.

*Regarding the interest in products from SLFSCs and to answer the second research question: Is there an interest in products from SLFSCs on the part of the inhabitants of rural areas in Spain?* It was found there is a significant interest in them. The majority (84%) expressed a willingness to buy local products if available, underscoring robust support for local economies and a preference for products that are perceived as healthier and more sustainable. The trust in product traceability and the positive impact of supporting local farmers are key factors driving this interest. However, the findings show that they perceive the local product consumption as limited concerning the variety.

Besides, the significance of local shopping dynamics and personal relationships in rural areas is emphasized, along with the inclination towards a wide variety of products, resulting in their frequent patronage of supermarkets. However, the recognition of where the food products come from serves as a driving force for them to purchase directly from producers, or even from small or local markets and shops. However, the availability of these products in establishments in rural areas was considered limited, especially in the case of the Valle del Jerte, answering the need and interest for SLFSCs models.

When defining the target market for the SLFSCs model, and answering the question: *What is the target market consumer for SLFSCs in Spanish rural areas?* The "Consumer Enthusiast" was considered as the most appropriate profile consumer group. As it is a consumer who values local production and sustainability, and who prefers a direct connection with food sources.

For the analysis of the impact of SLFSCs on sustainability, the SWOT analysis was used as a framework for addressing the fourth question: *What are the main barriers and drivers influencing the adoption and development of SLFSCs in these areas?* The direct interactions between producers and consumers are underscored as a key strength, facilitating a personalized service that enhances consumer trust and

producer satisfaction. This relationship enables producers to better understand and adapt to consumer needs, fostering innovation in product offerings and contributing to economic diversification. Additionally, the collaborative networks among producers not only reduce individual labor burdens but also enhance the variety and quality of products available to consumers. Such dynamics underscore the potential of SLFSCs to support food sovereignty, allowing for fair pricing and enhanced decision-making power among small-scale farmers.

However, the study also identifies critical constraints that limit the scalability of SLFSCs, particularly in areas with insufficient demand such as the Jerte Valley. The logistical challenges associated with transporting goods, especially perishable items requiring refrigeration, pose significant costs and environmental burdens. Furthermore, the need for increased consumer education and engagement is evident to ensure the sustainability of these models. By addressing these challenges through strategic marketing, community engagement, and policy support; there is a potential to enhance the viability of SLFSCs. This research advocates for a nuanced approach to integrating traditional and innovative practices within food systems, aiming to achieve a balance that respects local identities and promotes environmental sustainability while also adapting to the evolving demands of the global market.

## 8. References

- Altieri, M. A. (2008). *Enduring Farms: Climate Change, Smallholders and Traditional Farming Communities*.  
<https://www.researchgate.net/publication/252167278>
- Altieri, M. A., Nicholls, C. I., Henao, A., & Lana, M. A. (2015). Agroecology and the design of climate change-resilient farming systems. In *Agronomy for Sustainable Development* (Vol. 35, Issue 3, pp. 869–890). Springer-Verlag France. <https://doi.org/10.1007/s13593-015-0285-2>
- Amoak, D., Luginaah, I., & McBean, G. (2022). Climate Change, Food Security, and Health: Harnessing Agroecology to Build Climate-Resilient Communities. In *Sustainability (Switzerland)* (Vol. 14, Issue 21). MDPI. <https://doi.org/10.3390/su142113954>
- Anderson, C. R., Bruil, J., Chappell, M. J., Kiss, C., & Pimbert, M. P. (2019). From Transition to Domains of Transformation: Getting to Sustainable and Just Food Systems through Agroecology. *Sustainability 2019, Vol. 11, Page 5272, 11(19), 5272*. <https://doi.org/10.3390/SU11195272>
- Asociación Europea para la Innovación (AEI) en materia de productividad y sostenibilidad agrícolas (EIP-AGRI). (2022). *Manual de Buenas Prácticas en el Cultivo del Cerezo. Proyecto de Innovación del Grupo Operativo para la Mejora de la Competitividad del Cultivo de la Cereza en las Sierras del Norte de Extremadura, España*. (M. J. Serradilla Sánchez, M. López Corrales, P. Bañuls Coca, M. A. Manzano Muñoz, E. Nieto Serrano, C. Campillo Torres, M. H. Prieto Losada, M. Pérez Izquierdo, P. Serrano Pérez, E. García Garrido, M. Gallego Barbero, P. Díaz Flores, A. Vega Simón, & M. Rubio Montero, Eds.; 1st ed.). Go Cereza. Sierras Norte de Extremadura.
- Augère-Granier, M.-L. (2016). *Short food supply chains and local food systems in the EU. Briefing*.  
[https://www.europarl.europa.eu/thinktank/en/document/EPRS\\_BRI\(2016\)586650](https://www.europarl.europa.eu/thinktank/en/document/EPRS_BRI(2016)586650)
- Berg, B. L. (2004). *Qualitative research methods for the social sciences* (Fifth). Pearson.
- Bingol, O. (2021). *Food for all, not profit for few*. <https://www.eurovia.org/main-issue/food-sovereignty-trade>

- Çakmakçı, S., & Çakmakçı, R. (2023). Quality and Nutritional Parameters of Food in Agri-Food Production Systems. *Foods*, 12(2). <https://doi.org/10.3390/foods12020351>
- Casas Rurales Valle del Jerte. (n.d.). *Como Llegar al Valle del Jerte*. [Http://Www.Casasrurales-Valledeljerte.Com/02como\\_llegar.Html](Http://Www.Casasrurales-Valledeljerte.Com/02como_llegar.Html).
- CGIAR Initiative on Agroecology. (2024, February 8). *A case against silver bullets: context assessments are key for agroecological transitions in diverse food systems*. <Https://Www.Cgiar.Org/News-Events/News/a-Case-against-Silver-Bullets/>.
- Eidler, M. (2023). *Food Design como vinculo entre diseño y gastronomía*. [Tese de Doutoramento não publicada]. Universidade de Lisboa.
- European Commission. (2020). *A Farm to Fork Strategy for a Fair, Healthy and Environmentally-friendly Food System*. [https://agridata.ec.europa.eu/Qlik\\_Downloads/Jobs-Growth-sources.htm](https://agridata.ec.europa.eu/Qlik_Downloads/Jobs-Growth-sources.htm)
- European Commission. (2023, January 25). *Field to fork: global food miles generate nearly 20% of all CO2 emissions from food*. [https://environment.ec.europa.eu/news/field-fork-global-food-miles-generate-nearly-20-all-co2-emissions-food-2023-01-25\\_en](https://environment.ec.europa.eu/news/field-fork-global-food-miles-generate-nearly-20-all-co2-emissions-food-2023-01-25_en)
- European Coordination Via Campesina. (n.d.). *Our vision*. <Https://Www.Eurovia.Org/Our-Vision/#44768>.
- European Coordination Via Campesina (ECVC). (2018, February 2). *Food Sovereignty Now! A Guide to Food Sovereignty*. <Https://Www.Eurovia.Org/Wp-Content/Uploads/2018/02/FINAL-EN-FoodSov-A5-Rev6.Pdf>.
- Ewert, F., Baatz, R., & Finger, R. (2023). Agroecology for a sustainable agriculture and food system: From local solutions to large-scale adoption. *Annual Review of Resource Economics*, 15(1941–1359), 351–381. <https://doi.org/10.1146/annurev-resource-102422>
- FAO. (2021, April 23). *Small family farmers produce a third of the world's food*. <Https://Www.Fao.Org/Newsroom/Detail/Small-Family-Farmers-Produce-a-Third-of-the-World-s-Food/En>. <https://www.fao.org/newsroom/detail/Small-family-farmers-produce-a-third-of-the-world-s-food/en>
- Fao, Ifad, Unicef, WFP, & Who. (2023). *The State of Food Security and Nutrition in the World. Urbanization, Agrifood Systems Transformation and Healthy Diets Across the Rural–urban Continuum*. FAO. <https://doi.org/10.4060/cc3017en>
- Fleury, P., Lev, L., Brives, H., Chazole, C., & Désolé, M. (2016). Developing mid-tier supply chains (France) and values-based food supply chains (USA): A



- comparison of motivations, achievements, barriers and limitations. *Agriculture (Switzerland)*, 6(3). <https://doi.org/10.3390/agriculture6030036>
- Friends of the Earth International. (n.d.). *Agroecology for food sovereignty*. Retrieved May 15, 2024, from <https://www.foei.org/what-we-do/food-sovereignty/agroecology-for-food-sovereignty/>
- Garrido, M., Paredes, S. D., Cubero, J., Lozano, M., Toribio-Delgado, A. F., Muñoz, J. L., Reiter, R. J., Barriga, C., & Rodríguez, A. B. (2010). Jerte valley cherry-enriched diets improve nocturnal rest and increase 6-sulfatoxymelatonin and total antioxidant capacity in the urine of middle-aged and elderly humans. *Journals of Gerontology - Series A Biological Sciences and Medical Sciences*, 65 A(9), 909–914. <https://doi.org/10.1093/gerona/glq099>
- Gliessman, S. R. (2014). *Agroecology: the ecology of sustainable food systems*. CRC Press.
- Helms, M. M., & Nixon, J. (2010). Exploring SWOT analysis – where are we now?: A review of academic research from the last decade. *Journal of Strategy and Management*, 3(3), 215–251. <https://doi.org/10.1108/17554251011064837>
- HLPE. (2014). *Food losses and waste in the context of sustainable food systems. A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security*. [www.fao.org/cfs/cfs-hlpe](http://www.fao.org/cfs/cfs-hlpe).
- HLPE. (2017). *Nutrition and food systems. A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security*. <http://www.fao.org/3/a-i7846e.pdf>
- HLPE. (2019). *Agroecological and other innovative approaches. A report by The High Level Panel of Experts on Food Security and Nutrition*. [www.fao.org/cfs/cfs-hlpe](http://www.fao.org/cfs/cfs-hlpe)
- Holt-Giménez, E., & Altieri, M. A. (2013). Agroecology, food sovereignty, and the new green revolution. *Agroecology and Sustainable Food Systems*, 37(1), 90–102. <https://doi.org/10.1080/10440046.2012.716388>
- Ilbery, B. (2009). *Food supply chains: The long and short of it*. <https://eprints.glos.ac.uk/10714/8/10714-Ilbery-%282009%29-Food-supply-chains-the-long-and-short-of-it.pdf>
- International Fund for Agricultural Development (IFAD). (2021). *Transforming food systems for rural prosperity. Rural Development Report*. [www.ifad.org/rdr2021](http://www.ifad.org/rdr2021)
- Jackson, K., & Bezeley, P. (2019). *Qualitative Data Analysis with NVIVO* (J. Seaman, Ed.; 3rd ed.). SAGE Publications Ltd.

- Keats, S. (2021, April 22). *What are food systems?* <https://www.gainhealth.org/media/news/what-are-food-systems>
- Kneafsey, M., Venn, L., Schmutz, U., & Balázs, B. (2013). Short Food Supply Chains and Local Food Systems in the EU. A State of Play of their Socio-Economic Characteristics. In *Joint Research Centre*. European Commission. Joint Research Centre. Institute for Prospective Technological Studies. <https://doi.org/10.2791/88784>
- Kuckartz, U. (2014). Qualitative Text Analysis: A Guide to Methods, Practice & Using Software. *Qualitative Text Analysis: A Guide to Methods, Practice & Using Software*. <https://doi.org/10.4135/9781446288719>
- Manzini, E. (2015). *Design, When Everybody Designs*. The MIT Press.
- Oliver Martínez-Fornés, X., Campeny, M., Trabalon, F., Xxiii, L. P., & De La Rsehn, B. (2019). *Una mirada naturalista: Excursión por la comarca de la Garrotxa*.
- Paciarotti, C., & Torregiani, F. (2021). The logistics of the short food supply chain: A literature review. In *Sustainable Production and Consumption* (Vol. 26, pp. 428–442). Elsevier B.V. <https://doi.org/10.1016/j.spc.2020.10.002>
- Parasecoli, F. (2019). *Food*. The MIT Press.
- Pozo-Puértolas, R., & Puértolas, R. P. (2020). Creative Chaos Theory. Inductive Method for Viewing Information from an Applied Research Creative Chaos Theory Inductive Method for Viewing Information from an Applied Research. *American Scientific Research Journal for Engineering*. <http://asrjetsjournal.org/>
- Pueblo a Pueblo. (2023). *Food Is Not a Commodity, It's a Human Right | Progressive International*. Progressive International. <https://progressive.international/wire/2023-08-24-food-is-not-a-commodity-its-a-human-right/en>
- Renting, H., Marsden, T. K., & Banks, J. (2003). Understanding alternative food networks: Exploring the role of short food supply chains in rural development. *Environment and Planning A*, 35(3), 393–411. <https://doi.org/10.1068/a3510>
- Rossi, R. (2022). *Small farms' role in the EU food system. Briefing*. [https://www.europarl.europa.eu/RegData/etudes/BRIE/2022/733630/EPRS\\_BRI\(2022\)733630\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2022/733630/EPRS_BRI(2022)733630_EN.pdf)
- Saunders, M., Lewis, P., & Thornhill, A. (2006). *Research Methods for Business students. Excellence in Business Communication* (7th ed.). Pearson Prentice Hall.

- Sélingué, M. (2007). *Nyéleni 2007. Forum for Food Sovereignty*. [https://nyeleni.org/DOWNLOADS/Nyeleni\\_EN.pdf](https://nyeleni.org/DOWNLOADS/Nyeleni_EN.pdf)
- Slow Food. (n.d.). *Slow Food Website*. <https://www.slowfood.com/>.
- Slow Food Extremadura. (n.d.). *Picota Ambrunés*. Retrieved April 26, 2024, from <https://slowfoodextremadura.com/portfolio/picota-ambrunes/>
- Soldato, E. Del, & Massari, S. (2024). Creativity and digital strategies to support food cultural heritage in Mediterranean rural areas. *EuroMed Journal of Business*, 19(1450–2194), 113–137. <https://doi.org/10.1108/EMJB-05-2023-0152>
- Stummerer, S., Hablesreiter, M., Vihma, S., & Parasecoli, F. (2020). *Food Design Small : Reflections on Food, Design and Language*. Edition Angewandte / De Gruyter.
- Sullivan, S. (2023). Ag-tech, agroecology, and the politics of alternative farming futures: The challenges of bringing together diverse agricultural epistemologies. *Agriculture and Human Values*, 40, 913–928. <https://doi.org/10.1007/s10460-023-10454-2>
- Testa, R., Migliore, G., Schifani, G., Tinebra, I., & Farina, V. (n.d.). *Chemical-Physical, Sensory Analyses and Consumers' Quality Perception of Local vs. Imported Loquat Fruits: A Sustainable Development Perspective*. <https://doi.org/10.3390/agronomy10060870>
- The Global Alliance for Improved Nutrition (GAIN). (2021). *What are food systems?* <https://www.gainhealth.org/media/news/what-are-food-systems>
- United Nations Industrial Development Organization. (2020). *Short Food Supply Chains For Promoting Local Food On Local Markets*. <https://www.suster.org/wp-content/uploads/2020/06/SHORT-FOOD-SUPPLY-CHAINS.pdf>
- Vittersø, G., Torjusen, H., Laitala, K., Tocco, B., Biasini, B., Csillag, P., de Labarre, M. D., Lecoœur, J. L., Maj, A., Majewski, E., Malak-Rawlikowska, A., Menozzi, D., Török, Á., & Wavresky, P. (2019). Short food supply chains and their contributions to sustainability: Participants' views and perceptions from 12 European cases. *Sustainability (Switzerland)*, 11(17). <https://doi.org/10.3390/su11174800>
- Wezel, A., Bellon, S., Doré, T., Francis, C., Vallod, D., & David, C. (2009). Agroecology as a science, a movement and a practice. A Review. *Sustainable Agriculture*, 29(4), 503–515. [https://doi.org/10.1007/978-94-007-0394-0\\_3](https://doi.org/10.1007/978-94-007-0394-0_3)
- Wezel, A., Herren, B. G., Kerr, R. B., Barrios, E., Gonçalves, A. L. R., & Sinclair, F. (2020). Agroecological principles and elements and their implications for transitioning to sustainable food systems. A review. *Agronomy for Sustainable*

*Development*, 40(6), 1–13. <https://doi.org/10.1007/S13593-020-00646-Z/FIGURES/5>

www.delitgastronomic.cat. (n.d.). *Delit, el portal gastronòmic de la Garrotxa*.  
<https://Delitgastronomic.Cat/>.

Xhienne. (2007, September 30). *SWOT Analysis*.  
[https://En.Wikipedia.Org/Wiki/SWOT\\_analysis#/Media/File:SWOT\\_en.Svg](https://En.Wikipedia.Org/Wiki/SWOT_analysis#/Media/File:SWOT_en.Svg)

# Appendix A Interview Guides

*Below are the guides for the different interviews conducted, both for the semi-structured interviews for consumers and producers, and the unstructured interview for experts. The guides are shown both in the original language, Spanish, and in English translation.*

## A.1 Consumers' guide

**Nombre y apellidos del entrevistado** Name and surnames of the interviewee:

**Fecha** Date:

**Introducción** Introduction

El motivo por el que realizo esta entrevista es para contribuir a la ampliación de conocimiento de mi tesis de máster (TFM) en la que estudio la conexión entre productor y consumidor en las áreas rurales españolas. Estudio un máster europeo en innovación de alimentos y diseño de producto y actualmente lo realizo junto con la Universidad de Lund en Suecia, Food Design Lab de ELISAVA en Barcelona y FORK Organization. Es por ello por lo que está entrevista irá enfocada al área de la alimentación y también es el motivo por el que estoy investigando sobre este tema.

Su conocimiento y experiencia es realmente interesante para poder estudiar la conectividad productor/consumidor en función de los diferentes sistemas alimentarios. Mi objetivo es el de estudiar la conectividad entre productores y consumidores en las zonas rurales del territorio español. Concretamente, busco analizar el impacto y potencial de cadenas de suministro cortas/locales.

The reason for this interview is to contribute to the furthering of knowledge of my Master's thesis (TFM) in which I am studying the connection between producer and consumer in Spanish rural areas. I am studying for a European Master in Food Innovation and Product Design and currently doing it with the University of Lund in Sweden, the Food Design Lab of ELISAVA in Barcelona and the FORK Organization. That is why this interview will be focused on the food area and also why I am doing research on this topic.

Her knowledge and experience are really interesting to be able to study producer/consumer connectivity in terms of different food systems. My objective is to study the connectivity between producers and consumers in rural areas of Spain. Specifically, I seek to analyse the impact and potential of short/local supply chains.

## Warm-up

### **Cuéntame sobre ti, su vida (amplificar el persona)**

Vamos a hablar sobre ti, cuéntame ¿Qué sueles hacer en tu día a día?  
¿Dónde vives? ¿Cuánto tiempo llevas viviendo en X?  
¿A qué te dedicas? ¿Qué has estudiado?

### **Tell me about yourself, your life (amplify the persona)**

Let's talk about you, tell me what do you do on a daily basis?  
Where do you live? How long have you been living in X?  
What do you do? What have you studied?

### **Hábitos de consumo (Tipo de consumidor)**

Ahora hablaremos sobre tus hábitos de consumo para tener una idea general sobre tu relación con los alimentos, cuéntame ¿Cuándo sueles comer? ¿Con quién? ¿Dónde?  
¿Quién suele preparar la comida que consumes? ¿Cómo se suele preparar? ¿Por qué?

### **Consumption habits (Type of consumer)**

Now we will talk about your consumption habits to get a general idea about your relationship with food, and when do you usually eat? With whom? Where?  
Who usually prepares the food you eat? How is it usually prepared? Why?

## General General

**Hábitos de compra (Tipo de consumidor):**

Continuando con tus hábitos de consumo, ¿qué te gusta comprar? ¿Por qué? ¿Qué no te gusta? ¿Por qué?

¿Cuánto tiempo implicas en realizar la compra? ¿Por qué?

¿Quién suele realizar la compra en tu casa? ¿Dónde sueles hacer la compra? ¿Por qué?

¿Qué es lo que más valora de los productos que consume?

¿Prestas atención a las diferentes variedades de frutas/verduras de las que dispone en el supermercado? ¿Echa de menos alguna en concreto?

¿Es esta tradicional de la cultura gastronómica?

¿Cómo de relevante es el precio en las decisiones de compra?

¿De dónde provienen la mayoría de alimentos que consume? ¿cuáles son?

¿Suele consumir productos de temporada? ¿Por qué? ¿Y locales y ecológicos? ¿Por qué?

**Purchasing habits (Type of consumer):**

Continuing with your consumption habits, what do you like to buy, why, what don't you like, why?

How much time do you spend shopping? Why?

Who usually shops at your home? Where do you usually shop? Why?

What do you value most in the products you consume?

Do you pay attention to the different varieties of fruit/vegetables available in the supermarket? Do you miss a particular one? Is this a traditional part of the food culture?

How relevant is the price in your purchasing decisions?

Where do most of the foods you eat come from? What are they?

Do you usually consume seasonal products, why, and local and organic products, why?

**Lugar de compra:**

Háblame sobre los lugares dónde suele comprar los alimentos, ¿qué más lugares de venta conoces? No tienen por qué ser lugares en los que suele comprar, háblame de diferentes lugares de venta que conoce.

¿Por qué va a X y no a Y?

**Shopping place:**

Tell me about the places where you usually buy food, what other outlets do you know of? They don't have to be places where you usually shop, tell me about different outlets you know.

Why do you go to X and not Y?

### **E-commerce**

Ahora vamos a hablar sobre la venta de alimentos por internet, ¿alguna vez la ha realizado? ¿Por qué? ¿Le gusta? ¿Qué es lo que suele comprar allí?

### **E-commerce**

Now let's talk about selling food online, have you ever done it, why, do you like it, what do you usually buy there?

## **Profundización In-Depth**

### **Relación consumidor-vendedor:**

¿Cómo es su relación con el vendedor al que suele asistir? ¿Le da información de los alimentos que compra? ¿Considera esto importante?

### **Relationship consumer-retailer:**

How is your relationship with the vendor you usually go to? Does he/she give you information about the food you buy? Do you consider this important?

### **Relación consumidor-productor:**

¿Conoce de dónde vienen los alimentos que compras? ¿Te parece relevante conocer o tener una relación con el productor?

### **Relationship consumer-producer:**

¿Conoce de dónde vienen los alimentos que compras? ¿Te parece relevante conocer o tener una relación con el productor?

### **Consumo de productos locales:**

¿Dónde puede obtener productos locales en su pueblo/región? ¿Cuales obtiene de su cosecha o de la cosecha de un conocido?

¿Qué desventajas y ventajas tendría consumir más productos locales?  
¿Crees que sería sencillo consumir únicamente productos de origen local?

### **Local products consumption:**



Where can you get local products in your town/region? Which ones do you get from your own harvest or from an acquaintance's harvest?

What would be the disadvantages and advantages of consuming more local products?

Do you think it would be easy to consume only locally sourced products?

**Preservación de la cultura gastronómica:**

Ahora cuéntame si existe alguna receta tradicional que hayas dejado de cocinar o alguna que tu madre/abuela solía cocinar y tú ya no lo haces.

¿Cuál es? ¿Por qué motivo se ha dejado de cocinar?

¿Existe hoy en día disponibilidad de los ingredientes para preparar dicha receta?

**Cultural gastronomic preservation:**

Now tell me if there is a traditional recipe that you have stopped cooking or one that your mother/grandmother used to cook and you no longer do.

What is it? Why has it stopped being cooked?

Are the ingredients available today to prepare such a recipe?

**Observaciones Observations**

**Qué ocurre durante la entrevista What happens during the interview**

**Describe las fotografías/grabación Describe the pictures/recording**

**Otros aspectos relevantes Other relevant information**

## A.2 Producers' guide

### **Entrevista** Interview

**Nombre y apellidos del entrevistado** Name and surnames of the interviewee:

**Fecha** Date:

### **Introducción** Introduction

El motivo por el que realizo esta entrevista es para contribuir a la ampliación de conocimiento de mi tesis de máster (TFM) en la que estudio la conexión entre productor y consumidor en las áreas rurales españolas. Estudio un máster europeo en innovación de alimentos y diseño de producto y actualmente lo realizo junto con la Universidad de Lund en Suecia, Food Design Lab de ELISAVA en Barcelona y FORK Organization. Es por ello por lo que esta entrevista irá enfocada al área de la alimentación y también es el motivo por el que estoy investigando sobre este tema.

Su conocimiento y experiencia es realmente interesante para poder estudiar la conectividad productor/consumidor en función de los diferentes sistemas alimentarios. Mi objetivo es el de estudiar la conectividad entre productores y consumidores en las zonas rurales del territorio español. Concretamente, busco analizar el impacto y potencial de cadenas de suministro cortas/locales.

The reason for this interview is to contribute to the furthering of knowledge of my Master's thesis (TFM) in which I am studying the connection between producer and consumer in Spanish rural areas. I am studying for a European Master in Food Innovation and Product Design and I am currently doing it together with the University of Lund in Sweden, the Food Design Lab of ELISAVA in Barcelona and the FORK Organization. That is why this interview will be focused on the food area and also why I am doing research on this topic.

Her knowledge and experience are really interesting to be able to study producer/consumer connectivity in terms of different food systems. My objective is to study the connectivity between producers and consumers in

rural areas of Spain. Specifically, I seek to analyse the impact and potential of short/local supply chains.

## Warm-up

### **Cuéntame sobre ti, su vida (amplificar el persona)**

Vamos a hablar sobre ti, cuéntame ¿qué sueles hacer en tu día a día?

¿Dónde vives? ¿Cuánto tiempo llevas viviendo en X?

¿A qué te dedicas? ¿Qué has estudiado?

¿Desde cuándo te dedicas a la agricultura?

¿Cómo has recibido esos conocimientos?

¿Posee su propia tierra? ¿A quién pertenece?

### **Tell me about yourself, your life (amplify the persona)**

Let's talk about you, tell me what do you do on a daily basis?

Where do you live? How long have you been living in X?

What do you do? What have you studied?

How long have you been involved in agriculture?

How did you receive this knowledge?

Do you own your own land? Who owns it?

### **Hábitos de consumo (Tipo de consumidor)**

Ahora hablaremos sobre tus hábitos de consumo para tener una idea general sobre tu relación con los alimentos, cuéntame ¿Cuándo sueles comer? ¿Con quién? ¿Dónde?

¿Quién suele preparar la comida que consumes? ¿Cómo se suele preparar? ¿Por qué?

Y ¿qué te gusta comprar? ¿Por qué? ¿Qué no te gusta? ¿Por qué?

### **Consumption habits (Type of consumer)**

Now we will talk about your consumption habits to get a general idea about your relationship with food, tell me when do you usually eat. With whom? Where?

Where?

Who usually prepares the food you eat? How is it usually prepared? Why?

And what do you like to buy, why, what don't you like, why?

## General General

### **Modo de producción que realiza:**

En relación a la producción de X, ¿qué es lo más relevante a la hora de realizar la producción de X?

- ¿Por qué produces dicho producto/variedad y no otros?
- ¿Qué tipo de agricultura realizas? ¿Por qué? (Preguntar cuando se refiera a agricultura)
- ¿Qué beneficios y desventajas posee ese tipo de agricultura?

**Type of agriculture it carries out:**

In relation to the production of X, what is most relevant to the production of X?

Why do you produce such a product/variety and not others?

What type of agriculture do you do and why (ask when referring to agriculture)?

What are the benefits and disadvantages of this type of agriculture?

**Supply chain:**

En relación al esquema que se muestra (mostrar esquema típico de cadena alimenticia), rellena el camino que posee el alimento hasta que llega al consumidor.

*Distribución:*

En relación al camino que sigue el alimento que produce hasta que llega al consumidor ¿conoces cómo funciona el proceso de distribución del producto?

*Procesado:*

¿Cómo sueles vender tu producto? Crudo, procesado, etc...

*Producción:*

¿En qué punto de la cadena del alimento crees que se producen más pérdidas? ¿Por qué? ¿Cómo te afectan esas pérdidas?

**Supply chain:**

In relation to the diagram shown (show typical food chain diagram), fill in the path that the food has until it reaches the consumer.

*Distribution:*

In relation to the path that the food you produce follows until it reaches the consumer do you know how the distribution process of the product works?

*Processing:*

How do you usually sell your product? Raw, processed, etc?

*Production:*

At which point in the food chain do you think most losses occur? Why?  
How do these losses affect you?

**Comercialización:**

Respecto al modo de comercialización del alimento que produce ¿Qué beneficios recibe comercializando el producto a través de X? ¿Y las desventajas?

¿Alguna vez ha considerado comercializar su producto desde otro tipo de distribuidor? ¿Por qué?

¿Qué otras formas de comercialización conoce?

**Commercialization:**

Regarding the way you market the food you produce, what benefits do you receive by marketing the product through X? What are the disadvantages?

Have you ever considered marketing your product from another type of distributor? Why?

What other forms of marketing do you know of?

## **Profundización In-Depth**

**Medio Ambiente**

Ahora hablemos en lo que respecta al medio ambiente, ¿Qué medidas se aplican en tu trabajo teniendo en cuenta el medio ambiente?  
(Mostrar diferentes aspectos de la agroecología y preguntar cuáles se aplican en su trabajo)

**Environment**

Now let's talk about the environment, what measures do you apply in your work with the environment in mind?  
(Show different aspects of agroecology and ask which ones are applied in their work).

**Principales desafíos y uso de la tecnología:**

En relación a los principales desafíos que enfrentas en tu trabajo, ¿cuáles son los principales?  
¿Qué tipo de tecnología utiliza para enfrentar estos desafíos? ¿Qué otras tecnologías utiliza en su trabajo para aumentar la productividad y/o facilitar su trabajo?  
¿Cómo suelen ser las condiciones climáticas de la zona?  
¿Qué diferencias climáticas son las que has notado desde hace 10/20 años atrás en el modo de producción? ¿Cómo afrontan las crisis meteorológicas (sequías y lluvias)?

**Main challenges and use of the technology:**

In relation to the main challenges you face in your work, what are the main ones?  
What kind of technology do you use to face these challenges? What other technologies do you use in your work to increase productivity and/or facilitate your work?  
What are the climatic conditions like in the area?  
What climatic differences have you noticed since 10/20 years ago in the mode of production? How do you cope with weather shocks (droughts and rains)?

**Precio:**

¿Qué opina del precio al que te compran el producto?, es decir, el que recibes tú por ello.

Y en lo que respecta al producto de venta final ¿consideras que es justo para el consumidor? ¿Por qué?

¿Poseis los productores la posibilidad de formar parte de la decisión del precio de aquello que producen?

**Price**

How do you feel about the price at which the product is bought from you, i.e. the price you receive for it?

And as far as the end product is concerned, do you think it is fair for the consumer? Why?

Do producers have the possibility to be part of the decision on the price of what they produce?

**Interacción entre productores:**

¿Compartes recursos/conocimientos con otros productores/agricultores?

¿Por qué? ¿Crees que esto podría mejorar tu producción?

¿Y qué me diría de la interacción que posee con los otros actores de la cadena alimentaria? (mostrar esquema que realizó)

**Interaction between producers:**

Do you share resources/knowledge with other producers/farmers, why, and do you think this could improve your production?

And what about the interaction you have with other actors in the food chain (show the diagram you made)?

**Relación productor-consumidor:**

Hablemos ahora del consumidor final del alimento que produces,

¿Conoces a quién va dirigida la producción?, ¿qué información te llega a ti por parte del distribuidor sobre el consumidor o requerimientos que este solicita? ¿Consideras que esto sería importante? ¿Por qué?

¿Le gustaría tener un contacto más directo con el que consume sus productos? ¿Cómo se vería esto influenciado?

¿Cómo de relevante son las decisiones de compra del consumidor en la preservación de la diversidad? ¿Consideras que el consumidor presta atención a las diferentes variedades de frutas/verduras que se ofrecen? ¿De cuáles sí y de cuáles no? ¿Son estas variedades tradicionales de la zona en la que se venden?

**Relationship producer-consumer:**

Now let's talk about the final consumer of the food you produce, do you know who the production is aimed at, what information do you receive from the distributor about the consumer or their requirements, do you think this would be important, why, would you like to have more direct contact with the consumer of your products, how would this be influenced?

Would you like to have more direct contact with the consumers of your products? How would this be influenced?

How relevant are consumer purchasing decisions to the preservation of diversity? Do you consider that consumers pay attention to the different varieties of fruit/vegetables on offer? Which ones do and which ones do not? Are these varieties traditional to the area in which they are sold?

**Cadena corta de suministro:**

¿Sospesas la posibilidad de vender tus productos a otros tipos de cadenas de suministro ( como las locales/cortas), además del lugar al que suele consumirlo? ¿Por qué?

¿Cómo de sencillo/difícil sería vender tus productos directamente en mercados o al consumidor? ¿Alguna vez lo has planteado? ¿Por qué?

¿Qué necesitarías para hacerlo?

¿Crees que podría recibir más dinero mediante este tipo de venta frente a la convencional? ¿Por qué?

¿Consideras que sería posible vender tus productos de manera local en el lugar en el que resides? ¿Por qué? ¿De qué manera lo harías? ¿Qué condiciones habría que aplicar? ¿Qué inconvenientes y ventajas existirían?

**Short supply chain:**

Do you envisage the possibility of selling your products to other types of supply chains (such as local/short supply chains), in addition to the place where it is usually consumed? Why?

How easy/difficult would it be to sell your products directly to markets or consumers? Have you ever considered this? Why?

What would you need to do?

Do you think you could receive more money through this type of selling than through conventional selling? Why?

Do you think it would be possible to sell your products locally where you live? Why? In what way would you do it? What conditions would have to be applied? What disadvantages and advantages would there be?



**Preservación de la cultura gastronómica:**

En relación a la cocina popular, ¿existe algún producto tradicional que hoy en día haya dejado de producirse? ¿Cuál? ¿Por qué?

**Cultural gastronomic preservation:**

In relation to popular cuisine, is there any traditional product that is no longer produced today? Which one? Why?

**Observaciones Observations**

**Qué ocurre durante la entrevista What happens during the interview**

**Describe las fotografías/grabación Describe the pictures/recording**

**Otros aspectos relevantes Other relevant information**

A.3 Experts' guide

**Nombre y apellidos del entrevistado Name and surnames of the interviewee:**

**Fecha Date:**

## Introducción Introduction

El motivo por el que realizo esta entrevista es para contribuir a la ampliación de conocimiento de mi tesis de máster (TFM) en la que estudio la conexión entre productor y consumidor en las áreas rurales españolas. Estudio un máster europeo en innovación de alimentos y diseño de producto y actualmente lo realizo junto con la Universidad de Lund en Suecia, Food Design Lab de ELISAVA en Barcelona y FORK Organization. Es por ello por lo que está entrevista irá enfocada al área de la alimentación y también es el motivo por el que estoy investigando sobre este tema.

Su conocimiento y experiencia es realmente interesante para poder estudiar la conectividad productor/consumidor en función de los diferentes sistemas alimentarios. Mi objetivo es el de estudiar la conectividad entre productores y consumidores en las zonas rurales del territorio español. Concretamente, busco analizar el impacto y potencial de cadenas de suministro cortas/locales.

The reason for this interview is to contribute to the furthering of knowledge of my Master's thesis (TFM) in which I am studying the connection between producer and consumer in Spanish rural areas. I am studying for a European Master in Food Innovation and Product Design and currently doing it with the University of Lund in Sweden, the Food Design Lab of ELISAVA in Barcelona and the FORK Organization. That is why this interview will be focused on the food area and also why I am doing research on this topic.

Her knowledge and experience are really interesting to be able to study producer/consumer connectivity in terms of different food systems. My objective is to study the connectivity between producers and consumers in rural areas of Spain. Specifically, I seek to analyse the impact and potential of short/local supply chains.

## Preguntas Questions

¿Considera relevante incrementar la conectividad entre productores y consumidores en el mundo rural?

Do you consider it relevant to increase connectivity between producers and consumers in rural areas?

Y ¿qué opina de fomentar la cadena de producción-consumo cortas? Teniendo los productores la oportunidad de vender sus productos en la

región en la que realizan su actividad, al mismo momento que los consumidores pueden comprar los productos locales.

And what do you think about encouraging short production-consumption chains? By allowing producers to sell their products in the region where they operate, at the same time consumers can buy local products.

# Appendix B Confidentiality Agreement Model

*Below is the model of the collaboration agreement between the researcher and the interviewee, intending to protect the information provided by the latter and informing the use of this information. This model is shown in the original format, Spanish.*

## ACUERDO DE COLABORACIÓN

En X, a X de marzo de 2024

### REUNIDOS

DE UNA PARTE, Silvia Fernández Fernández, con NIF nº XXXXXXXXXXXL y con domicilio en XXXX, en XXXXXXXXXXX, representada en este acto por como estudiante de la Universidad de Lund, residente en el Food Design Lab de Elisava y becaria de FORK Organization (en adelante, el "**RECEPTOR**").

DE OTRA PARTE, la persona \_\_\_\_\_, de nacionalidad ESPAÑOLA, con CIF \_\_\_\_\_ con domicilio en \_\_\_\_\_ y en su representación \_\_\_\_\_ actuando en calidad de Apoderado y con NIF \_\_\_\_\_ (En adelante, el "**DIVULGADOR**").

El DIVULGADOR y el RECEPTOR que, en adelante, podrán ser denominadas, individualmente, la "**Parte**" y conjuntamente, las "**Partes**", reconociéndose mutuamente capacidad legal suficiente para contratar y obligarse en la representación que actúan, y siendo responsables de la veracidad de sus manifestaciones.

### EXPONEN

I. Que, las partes, realizan un acuerdo de colaboración para la transferencia de información para el Trabajo de Fin de Máster, titulado "The connectivity between food providers and consumers in rural areas of Spain", pudiendo este título ser

cambiado posteriormente, y presentado en la Universidad de Lund, Suecia; con el que colaboran el Food Design Lab de Elisava y FORK Organization.

**II.** Que, de conformidad con lo anterior, se va a compartir información con fines únicamente académicos por parte del DIVULGADOR al RECEPTOR.

**III.** Que este acuerdo de colaboración se establece con el propósito de garantizar unos niveles rigurosos de confianza entre las Partes y regular las condiciones bajo las que el DIVULGADOR revelará y proporcionará la información (*en los términos definidos más adelante*) al RECEPTOR.

**IV.** Que, el presente regirá determinados compromisos y obligaciones entre las Partes relativos al acceso y uso por el RECEPTOR de la información relativa a su trabajo sujeta al uso académico y de la información distribuida por el DIVULGADOR al RECEPTOR, así como los derechos y obligaciones de cada una de las Partes.

**V.** Y que, habiendo llegado las Partes, libre y espontáneamente, a una coincidencia mutua de sus voluntades, formalizan el presente **ACUERDO DE COLABORACIÓN**, en adelante, el "**Acuerdo**", el cual se regirá por las siguientes cláusulas.

## **CLÁUSULAS**

### **PRIMERA. OBJETO DEL ACUERDO DE COLABORACIÓN**

El objeto del presente Acuerdo es fijar los términos y condiciones bajo los cuales el DIVULGADOR comunicará y el RECEPTOR utilizará la información compartida, ya sea de forma oral, gráfica o escrita.

El RECEPTOR se compromete, por el presente Acuerdo, a utilizar de manera académica todas las informaciones que el DIVULGADOR le comunique en el marco de la colaboración y/o proyecto existente entre ambas Partes.

Asimismo, este pacto constituye el acuerdo total entre las Partes respecto a la información compartida.

### **SEGUNDA. INFORMACIÓN COMPARTIDA**

Tendrá la consideración de Información Compartida (en adelante, también "**Información Compartida**") cualquier información divulgada por el DIVULGADOR al RECEPTOR, independientemente de su formato de presentación o distribución, ya sea oralmente, por escrito, de forma visual, grabada en medios magnéticos o por cualquier otro medio o soporte, tangible o intangible.

En particular, tendrá la consideración de Información Compartida toda aquella información y conocimiento relativo a la información aportada por el DIVULGADOR con el objeto de la potencial colaboración profesional.

El DIVULGADOR acepta que la Información Compartida pueda ser utilizada para fines académicos y divulgativos, así como considere el RECEPTOR.

El RECEPTOR se compromete a que la utilización de la información divulgada estará dirigida a alcanzar objetivos dentro del proyecto y fines descritos previamente, y no otros.

Y en prueba de conformidad y aceptación de todo lo establecido, ambas Partes firman este Acuerdo en dos ejemplares y a un solo efecto, en el lugar y fecha al comienzo indicados.

**EL RECEPTOR**

**EL DIVULGADOR**

**Silvia Fernández Fernández**

EMJMD Food Innovation and Product Design

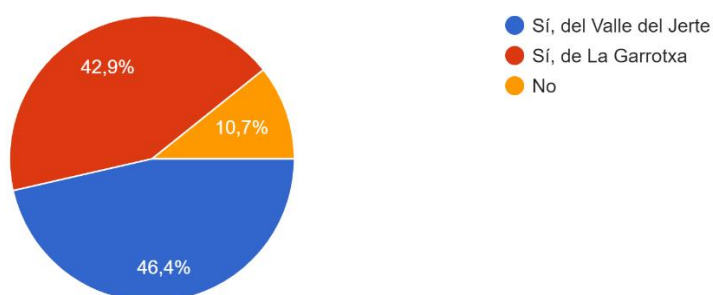
Lund University

# Appendix C Survey Results

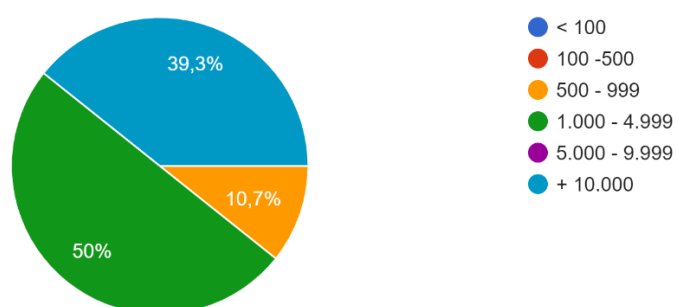
*Below are the visually represented results for the questions asked in the consumer and producer surveys.*

## A.1 Consumer's survey results

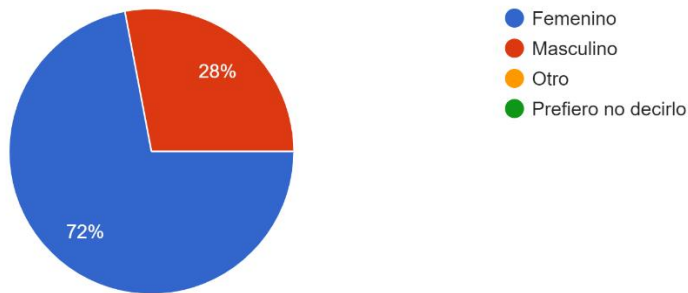
Do you live in a village/rural area in Valle del Jerte (Cáceres) or La Garrotxa (Gerona)?



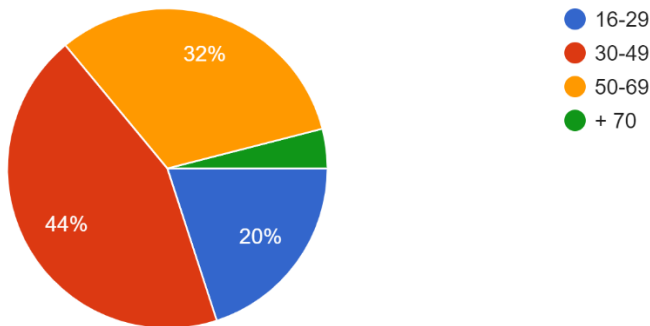
Número de habitantes del lugar en el que reside:



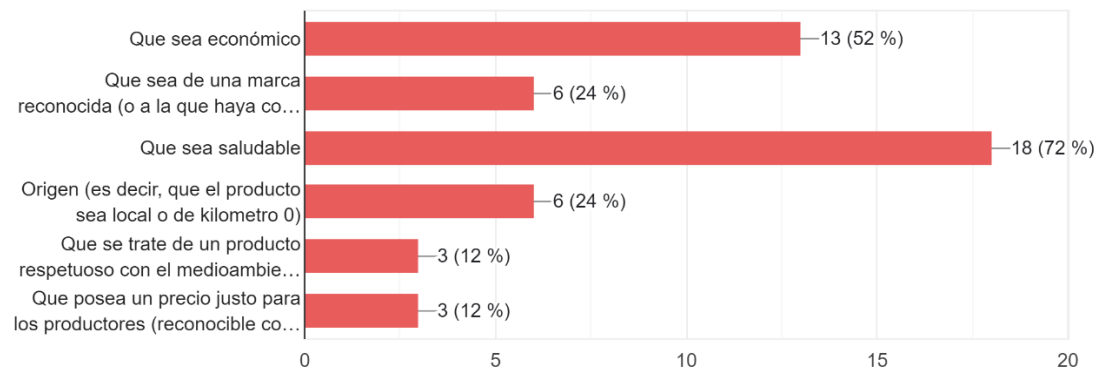
Gender:



Age:

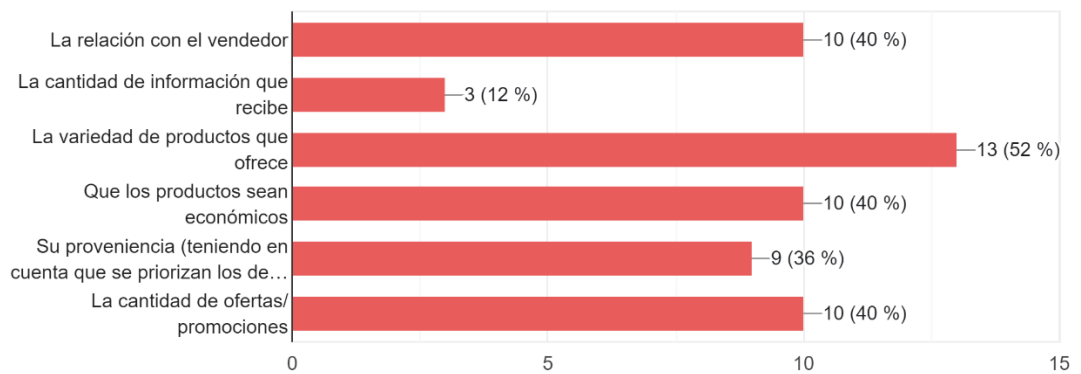


When buying food, what do you consider? You can select multiple answers.

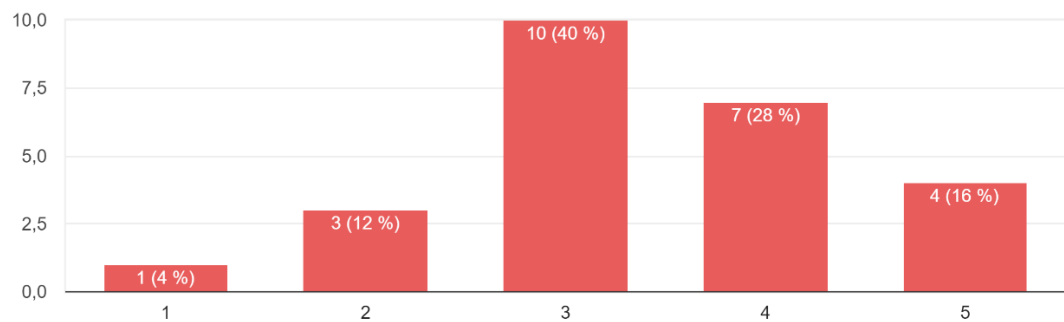


What do you value most about the place/establishment where you usually buy food?  
You can select several answers.

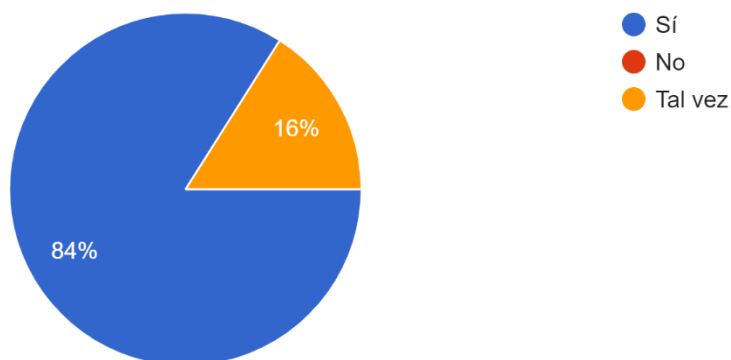




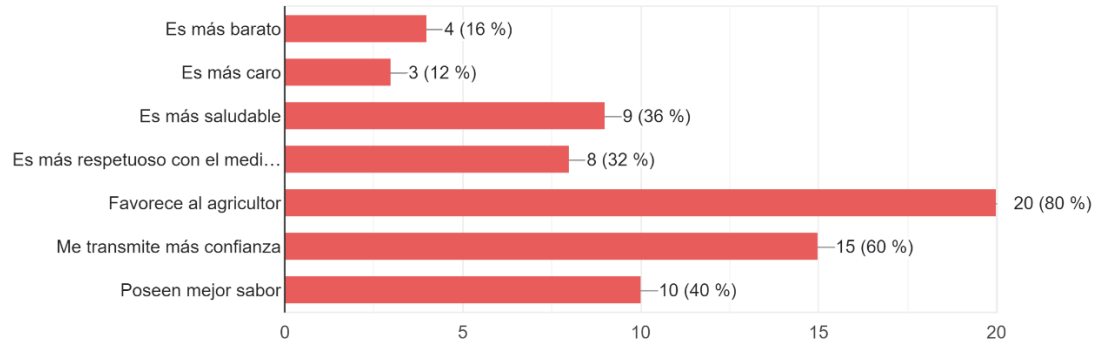
How important is it to you that the food products you consume are certified organic, or come from sustainable and environmentally friendly practices? On a scale of 1 to 5, where 1 means 'not very important' and 5 means 'very important'.



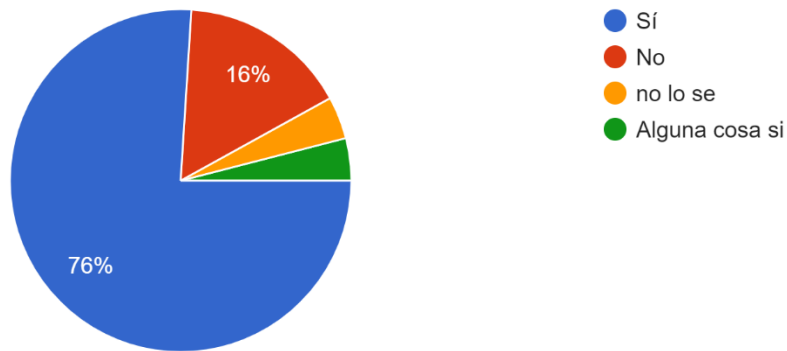
Would you buy local products if there was a place to do so?



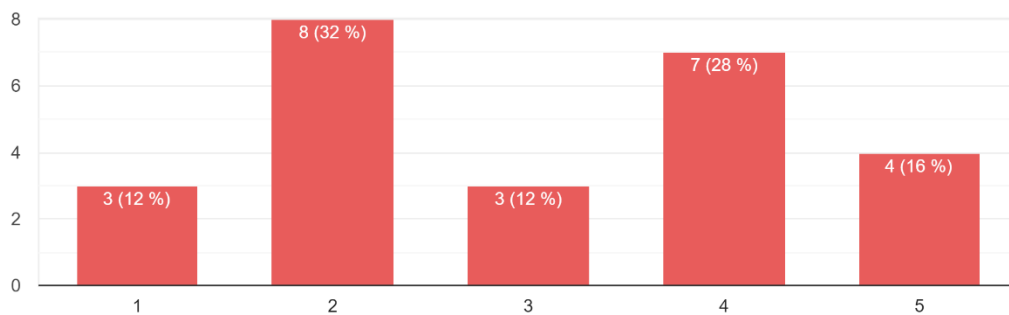
What do you consider to be the advantages/disadvantages of buying locally produced food?



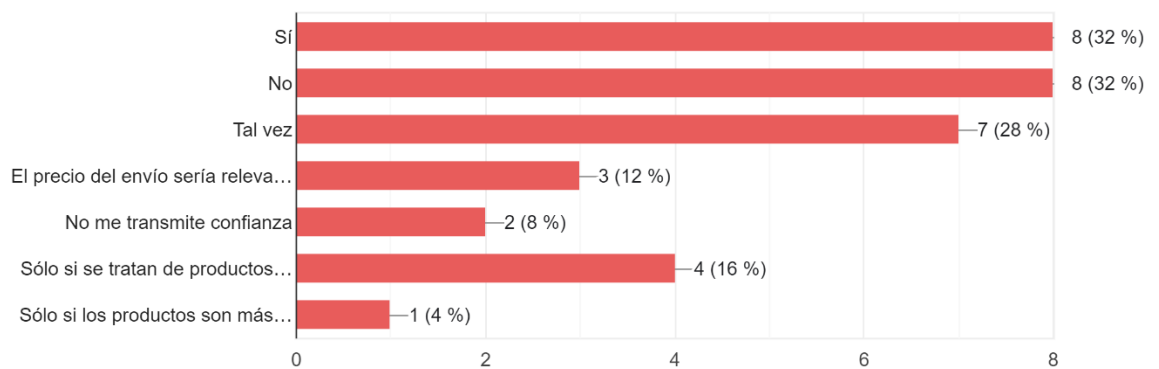
Are there places where you can buy locally sourced products where you live?



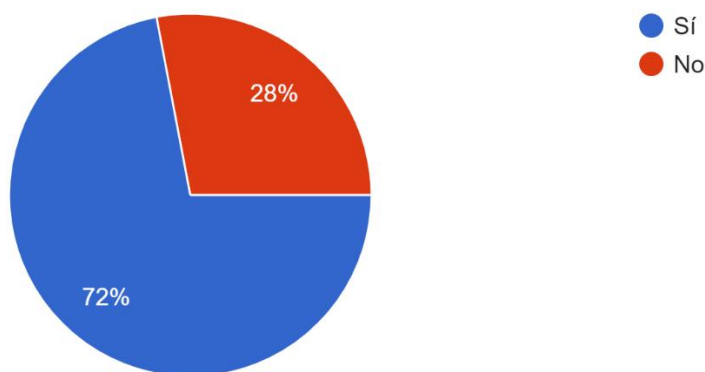
How often do you consult information about the origin and production processes of the food you eat before making a purchase? Please select a number from 1 to 5, with 1 being low frequency and 5 being high frequency.



Would you be willing to use online sales to buy food?



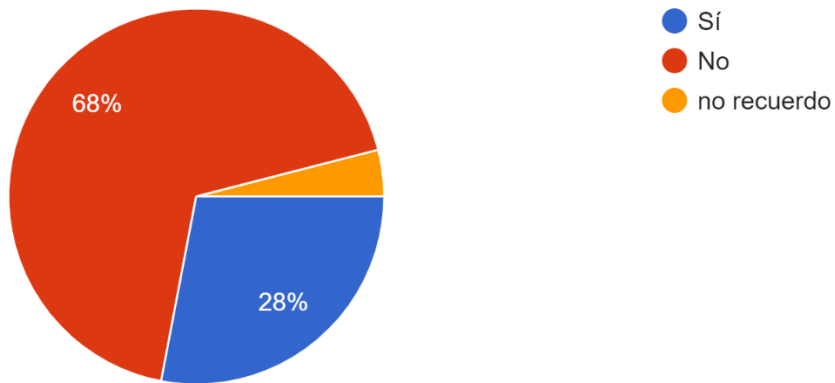
Do you remember traditional recipes, which used to be prepared by your grandmothers or relatives that you no longer eat or prepare?



Do you remember any?

Answers: Potaje; Cocido, caldo piornalego... No los preparo pero si los consumo; Castañas cocidas; Productos tradicionales de la matanza; Patatas rellenas; Almorraque; Flan; Fricandó de ternera; Moltes sopes; Canalones; Llom amb salsa ametlles; Els estofats; Conservas hechas en casa; Huevos con xorizo; Flam d'ou, Canelons, Porc Senglar amb parates, Vedella amb bolets.

Are there any foods or varieties that your relatives (grandparents and mothers) used to produce in the countryside and no longer do?

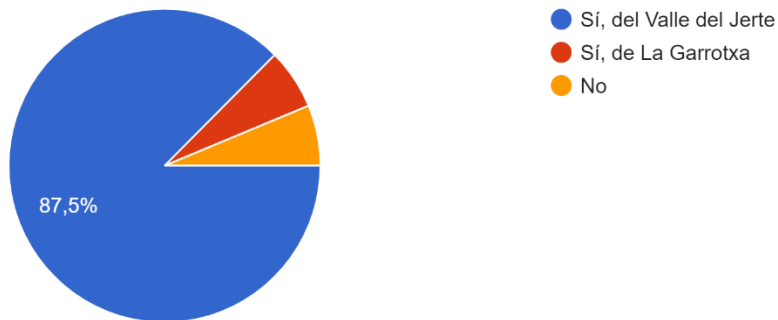


Which ones?

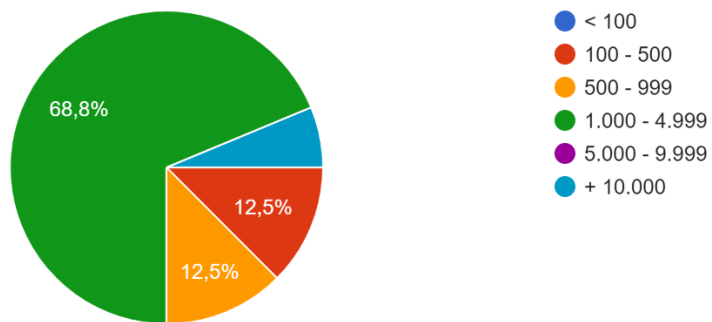
Answers: Papas de harina; Variedades de patatas; Coliflor; Qualsevol, ara ja no hi ha camp!; Fruta como manzanes, fresas; Productos de la huerta.

## A.2 Producer's survey results

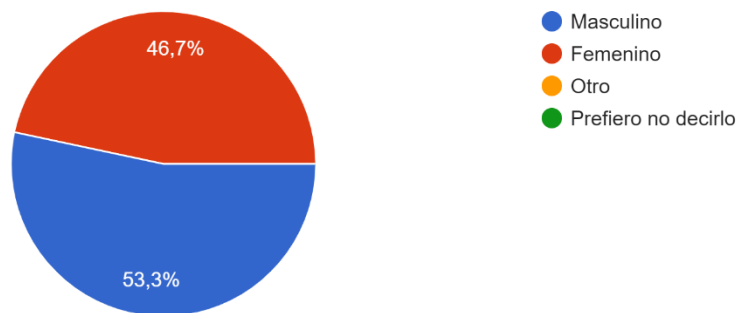
Are you a farmer/food producer in the area of Valle del Jerte (Cáceres) or La Garrotxa (Gerona)?



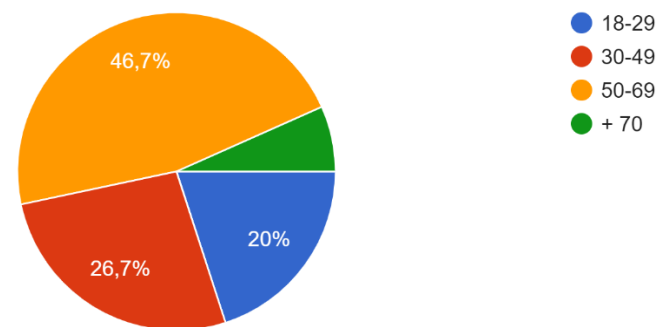
Number of inhabitants of the place of residence



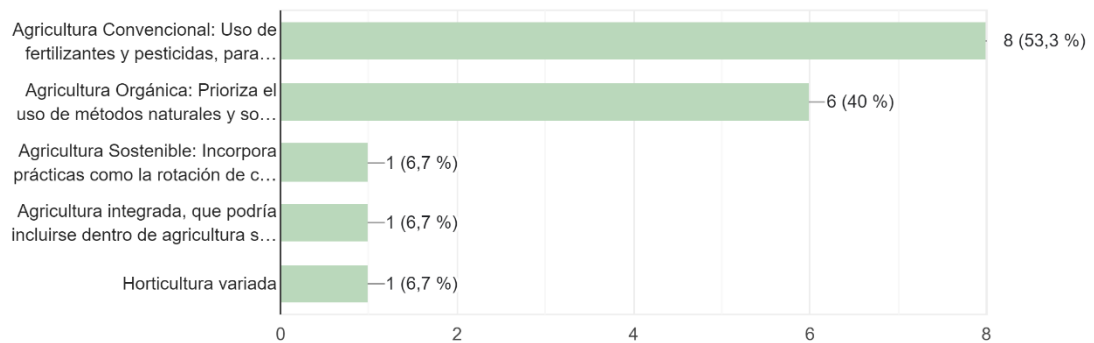
Gender:



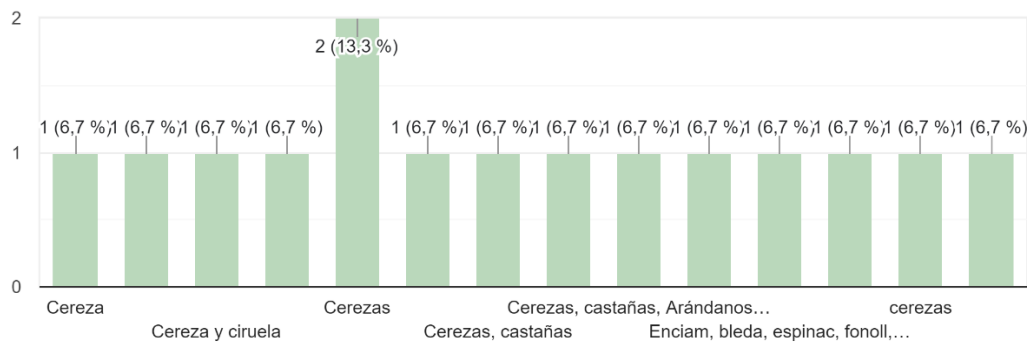
Age:



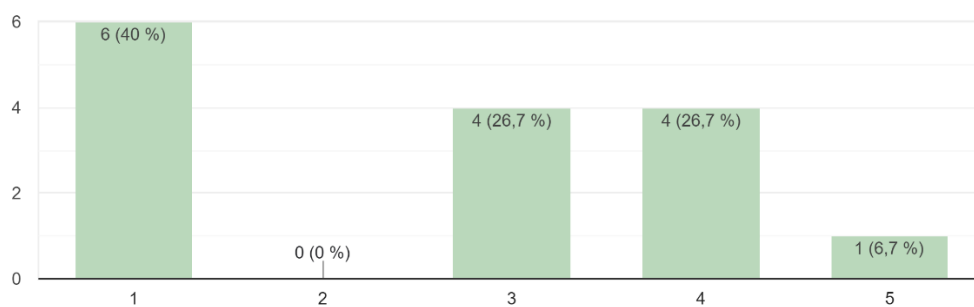
What kind of farming do you do? You can select several answers.



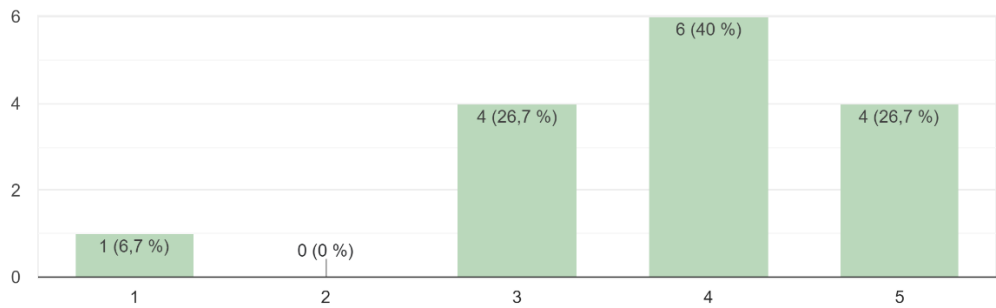
What specific foods does it produce for commerce?



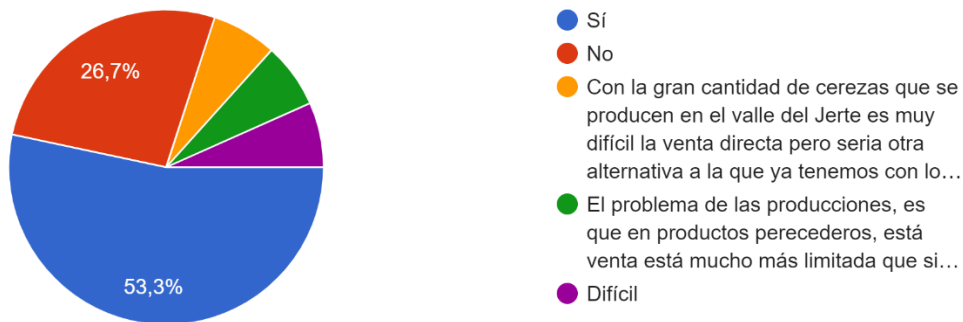
How would you rate the current level of communication and connection between your farm business and the final consumers of your produce? Where 1 means 'very low' and 5 means 'very high'.



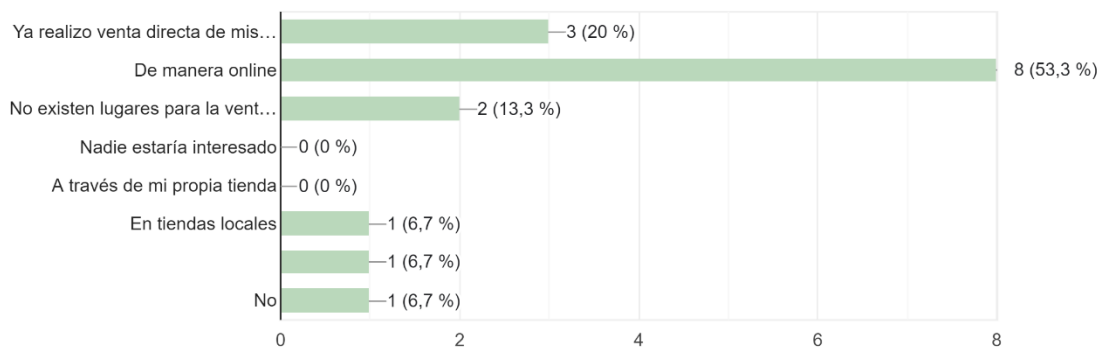
How much do consumers' purchasing decisions influence their work? Where 1 means 'very little' and 5 means 'a lot'.



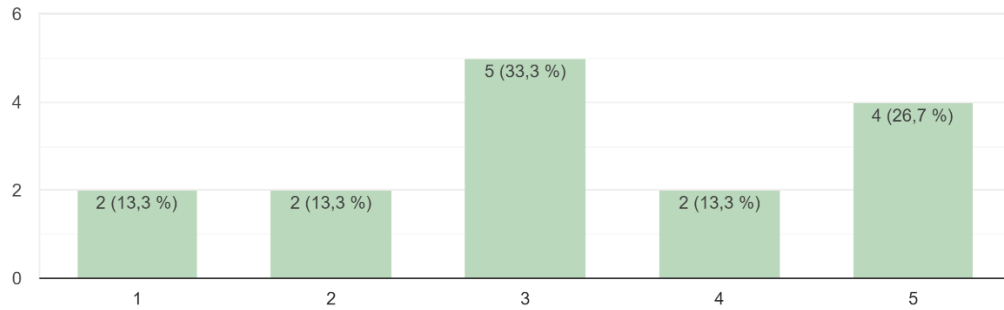
Would it be advantageous to sell your products directly?



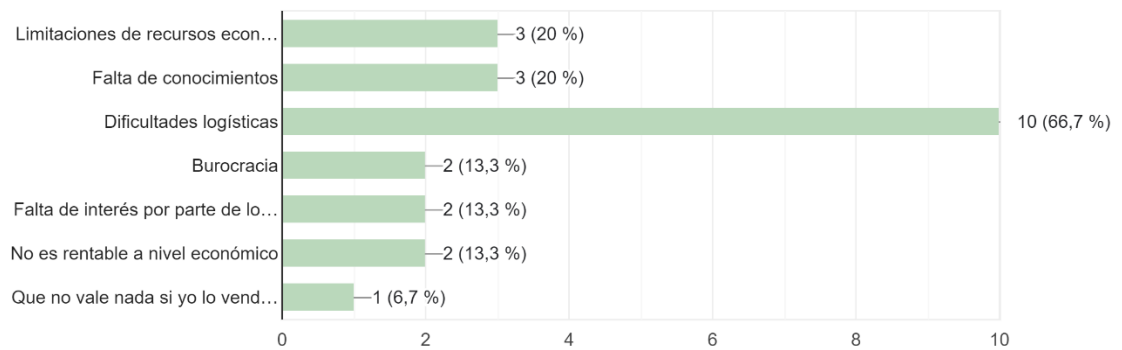
Would you be interested in including the local sale of your products as an additional economic activity?



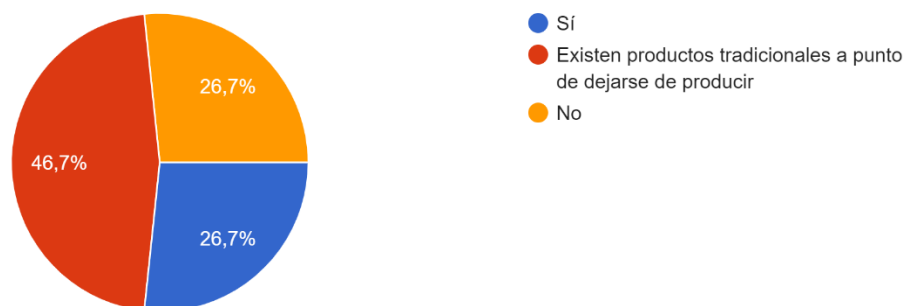
How interested would you be in selling your products locally via the internet? Where 1 means 'not at all interested' and 5 means 'very interested'.



What do you think are the main obstacles to selling products locally? You can select several answers.



Are there any products and/or varieties that your relatives or ancestors used to produce that are no longer produced today?

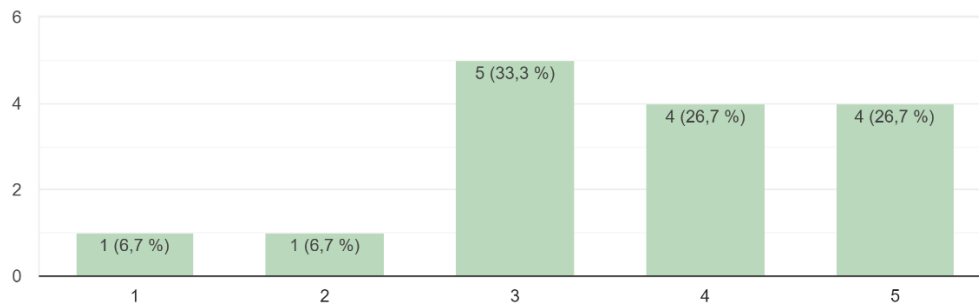


If the answer above was yes (or you selected 'There are traditional products that are about to be discontinued'), please indicate which one.



Answers: Muchas variedades de cerezas, frambuesas casi en extinción; Alubias y garbanzos; La frambuesa y algunas variedades de cerezas; Las famosas picotas (variedades autóctonas) han perdido el valor económico y a día de hoy se encuentran en decadencia debido a su escasa rentabilidad; Mimbres; Variedades de cerezas; Aceitunas; Variedades antiguas y tradicionales de frutas; Ambrunés y Picota.

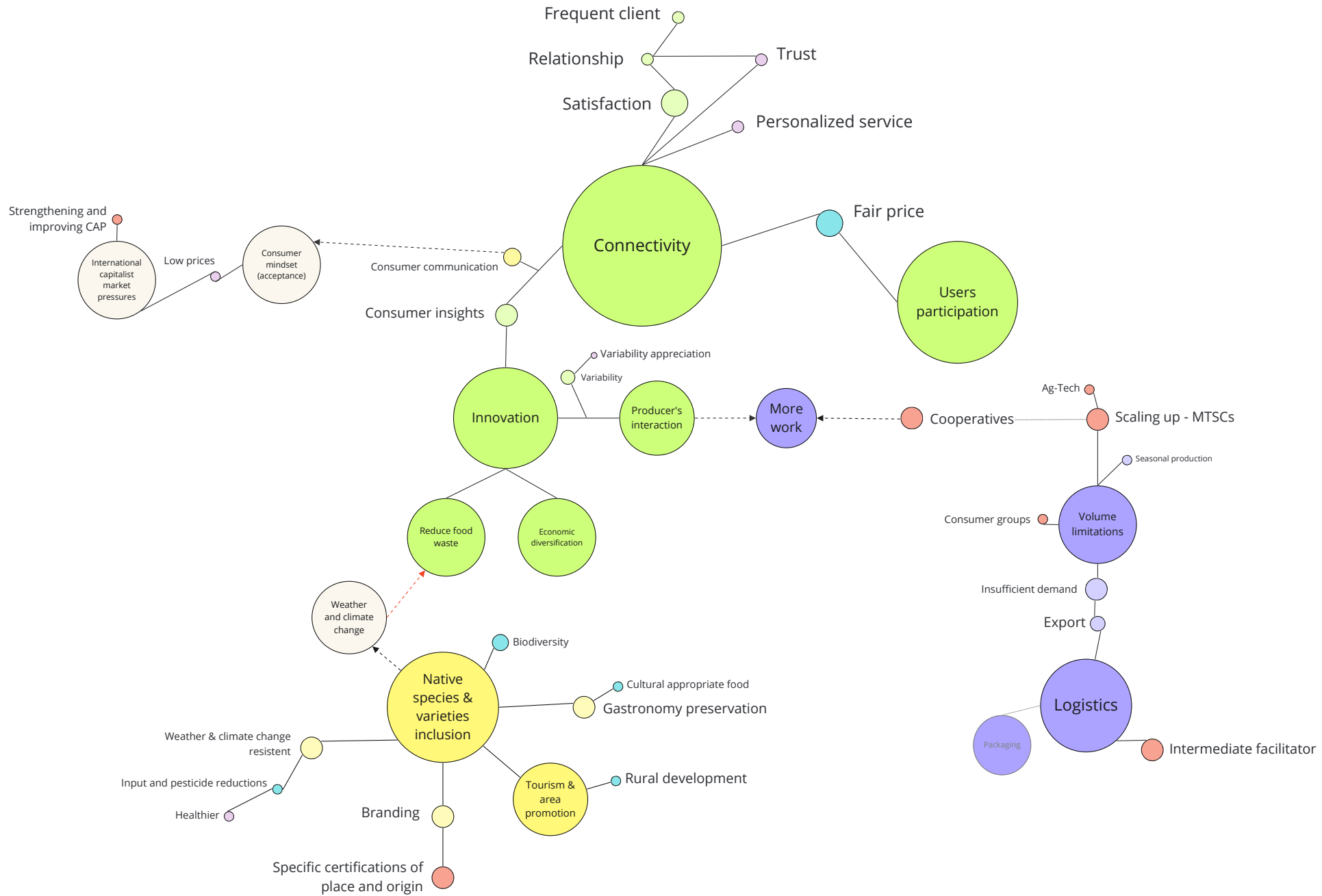
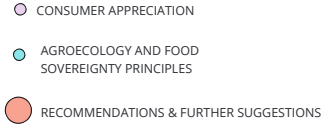
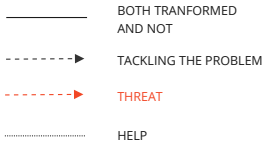
How do you think the consumer's opinion is influenced by the loss/preservation of different varieties of food? (I am referring to specific varieties of a particular food, e.g. different varieties of cherries) Please select a number from 1 to 5, with 1 being low and 5 being high.

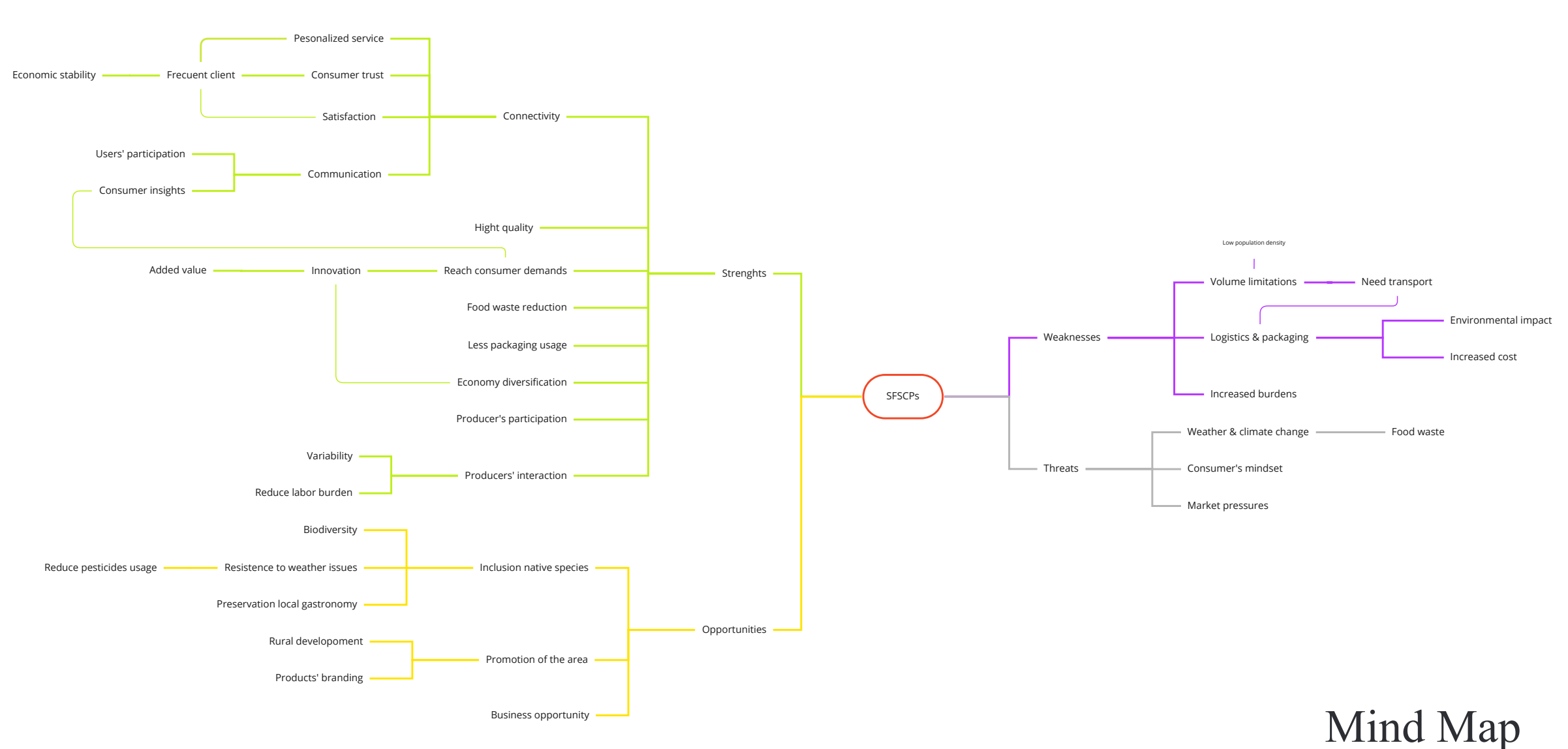


## Appendix D Cluster Diagram and Mind Map

*The following page shows a cluster diagram and mind map representing the interaction between different elements such as the strengths, opportunities, weaknesses and threats previously analyzed by the SWOT analysis. As well as the interaction with different sub-aspects of these categories, their relationship with the aspects valued by the consumer and recommendations and further suggestions that propose solutions and strengths to be explored in more depth for the benefit of the implementation of SLFSCs. The direct relationship of some of these elements to the principles of agroecology and food sovereignty is also expressed.*

# Cluster Diagram





Mind Map