

## Article

# The Transition of the Agro-Food System: Lessons from Organic Farming in the Lisbon Metropolitan Area

Isabel Salavisa \*, Maria Fátima Ferreiro and Sofia Bizarro 

DINAMIA'CET-Iscte, Instituto Universitário de Lisboa (ISCTE-IUL), 1649-026 Lisboa, Portugal; fatima.ferreiro@iscte-iul.pt (M.F.F.); sofia.bizarro@iscte-iul.pt (S.B.)

\* Correspondence: isabel.salavisa@iscte-iul.pt

**Abstract:** The paper presents a study on the transition of the agro-food system in Portugal through the analysis of case studies in the Lisbon Metropolitan Area. The theoretical framework draws on the literature on the transition of sociotechnical systems, taking into account the multidimensional nature of the food system (ecological, environmental, socioeconomic, and cultural). Social and institutional innovation, technological innovation, public policy impact, and the interactions with the dominant regime are the main dimensions guiding the study of the organic farming initiatives. We identified the supportive policy measures, the role of producers' networks, the relevance of values, and the obstacles and challenges these initiatives face in their growth process. While the results are in line with the theoretical debate, they also provide new insights on the selection environment, the networks' dual nature and the existence of different development paths within the organic food niche. One of the main conclusions is that organic farmers perceive the regulatory framework as unfair relative to that of conventional agriculture. Therefore, it is crucial to change this framework to speed up the transition of the agro-food system in Portugal and at the European level.



**Citation:** Salavisa, I.; Ferreiro, M.F.; Bizarro, S. The Transition of the Agro-Food System: Lessons from Organic Farming in the Lisbon Metropolitan Area. *Sustainability* **2021**, *13*, 9495. <https://doi.org/10.3390/su13179495>

Academic Editor:  
Mariosaria Lombardi

Received: 4 July 2021  
Accepted: 4 August 2021  
Published: 24 August 2021

**Publisher's Note:** MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



**Copyright:** © 2021 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

**Keywords:** agro-food system; organic farming niche; transitions; sustainability; Portugal; Lisbon Metropolitan Area

## 1. Introduction

The food system is defined as the production of food within a value chain comprising several stages, from 'farm to fork' [1] p. 73. Complementary activities, such as agrochemical production, packaging, and transportation, are also part of the system [2]. A few large companies usually dominate processing and wholesale in developed countries. In retail, large chains dominate, though small businesses coexist (i.e., convenience shops, traditional food outlets, fruit stands and small groceries). However, there are thousands or millions of actors in primary production and consumption. These actors hold asymmetrical power along the value chain, facing strong pressure from monopolized and globalized markets characterized by price volatility, food standardization, and the underestimation of other food system-related issues (i.e., climate change, food security and safety, health).

The aim of the agro-food transition is to replace the conventional productivist regime with a sustainable production system. The former is associated with high specialization, capital-intensity, chemical-intensity, and integration in a global disembodied agro-food chain, with the primacy of efficiency, rationality 'stricto sensu', and profit maximization rules [3]. The transition involves the adoption of sustainable farming practices that are compatible with the conservation and restoration of land and watersheds, the respect and enhancement of biodiversity, and the drastic reduction of Greenhouse Gas (GHG) emissions. Organic agriculture is a production system that meets these requirements since it relies on ecological processes, biodiversity, and adaptation to local conditions. It "combines tradition, innovation, and science to benefit the shared environment and promote fair relationships and good quality of life for all involved" [4]. In addition to the retrieval of old

farming practices, technological innovations are necessary to enhance the use of resources such as water (precision agriculture).

New models of organization and commercialization, such as short supply chains and community supported agriculture, must emerge and consolidate to reduce the environmental impact, and local production must also be boosted. These new forms of addressing food production and consumption are accompanied by significant shifts in values, attitudes [5], and lifestyle practices (e.g., healthy food movements) [6].

The transition to a sustainable food system entails the growth of new fragile and isolated initiatives and the development of a niche able to provide alternatives to conventional modes of food production and commercialization. The emergence and consolidation of this niche is therefore a key condition for the transformation of the entire food system. This issue guides the identification and analysis of the different initiatives.

Proximity and cooperation are also characteristics of the new initiatives that hinder or favour their development, and they constitute an important and promising area of research [7]. The interaction of these initiatives with the dominant sociotechnical regime is also a major element for their success. Finally, other dimensions, such as the cultural, institutional, public policy, and political background must be considered. Therefore, the analytical framework proposed permits the exploration of these dimensions with the aim of deepening knowledge on the transition of the food system. Moreover, the analysis herein strives to provide contributions that inform public policies in order to improve the replication of the successful cases and strengthen the sustainable agro-food capacity of metropolitan areas.

The main research questions of this study are:

- What are the main drivers and barriers to the emergence of an organic agro-food niche in Portugal?
- What are the main characteristics of the organic food initiatives and the main difficulties experienced by their promoters?
- How do they interact with the dominant agro-food sociotechnical regime?
- How important is public support, namely, European financial support, to help consolidate these initiatives?

Several authors have noted that new experiments are still relatively modest in Portugal and are spreading at a slow pace [8,9]. This evolution of organic agriculture is similar to most European countries [10]. The main aim of this paper is to identify the factors that are hindering the development of a sustainable food system in Portugal, notably the production and commercialization of organic produce. This issue has scarcely been addressed in the literature. Indeed, the (few) studies on the Portuguese case focus mostly on four topics: (1) the analysis of short food supply chains, including local food production and peri-urban agriculture [11]; (2) the study of the food potential of metropolitan and peri-urban areas and their role in the food system transition [12,13]; (3) the comparative analysis of the impacts of alternative dietary regimes in terms of their ecological footprint [13,14]; and (4) the study of the extension and ecological impact of food wastage [13,15].

In order to answer the research questions, we conducted a study of organic food farming and commercialization initiatives located in the Lisbon Metropolitan Area (LMA). These locally rooted initiatives foster closer relations between production and consumption at the local and regional level, strengthen local economy, and improve environmental performance (i.e., food miles, food carbon footprint, biodiversity, and protection of local species).

The selected cases shed light on the main drivers and obstacles that alternative agro-food initiatives face in Portugal, particularly in the largest metropolitan area around the capital city, Lisbon. From the outset, the new experiments have had to deal with an adverse selection environment for a number of reasons.

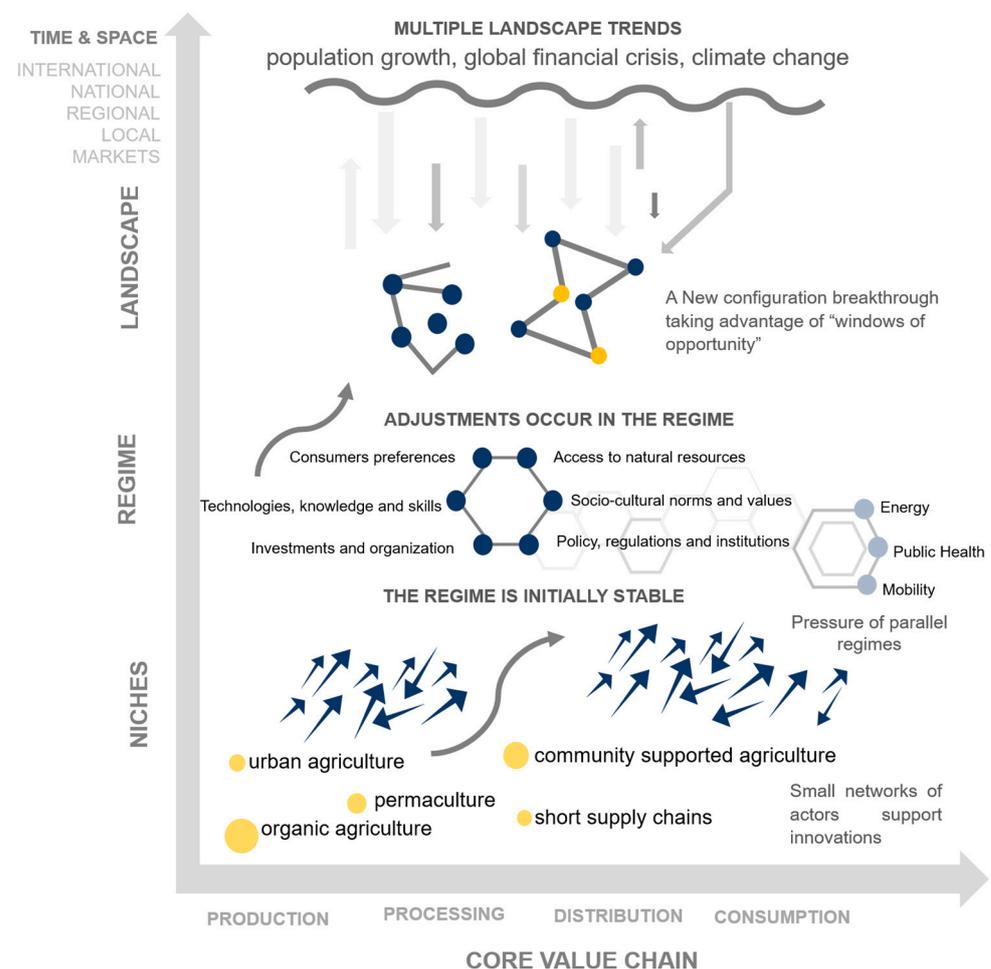
Theoretically, we adopted a multi-level perspective to study the transition to a sustainable agro-food system. Within this framework, we will discuss the formation and development of niches and the way they interact with the dominant sociotechnical regime [16,17].

Empirically, we draw on extensive document work, statistical data analysis, and case studies performed in the LMA.

The remainder of the paper is structured as follows: Section 2 presents and discusses the theoretical framework adopted; Section 3 provides an overview of organic farming in Portugal and the Lisbon Metropolitan Area, where all the case studies were conducted; Section 4 addresses the methodological options; Section 5 analyses the case studies; Section 6 discusses the empirical results; conclusions and policy implications are presented in Section 7.

## 2. Theoretical Framework: Niches and the Transition of the Agro-Food System

According to the multi-level approach, the transition to sustainability is a complex process resulting from a myriad of experiments that involve interactions between the following dimensions: niches (micro-level; the locus of radical innovations), socio-technical regimes (meso-level; the locus of established practices and associated rules), and an exogenous socio-technical landscape (macro-level) [16,17] (Figure 1).



**Figure 1.** Multi-level perspective approach to agro-food systems. Source: Adapted by the authors from Geels [17].

Niches are particularly relevant in this process because they are the locus where innovation is generated [18]. Conceptually, niches are considered a protective space that shield, nurture, and empower these new experiments [18]. The transition to the sustainability of the system as a whole depends on the formation of these niches where novelty originates and is nurtured. Their success depends not only on internal actors and processes, but also on the interactions they establish and maintain with the sociotechnical regime(s) and the circumstances of the general environment or the landscape. In fact, the replacement

of the old mode with a new one requires the substitution or profound reconfiguration of the incumbent regime [17]. A systemic approach must be adopted to encompass the full complexity and diversity of this process, where niches interact at different paces and in different ways with other niches, several regimes, and the landscape [17].

Given the scale and scope of agro-food systems, their transition entails more specific changes and conditions than any other sector addressed in transition studies (e.g., energy, mobility) [16]. Clearly, a first major difference with other systems is that social and institutional innovations play a crucial role [19,20] and different types of knowledge (traditional and modern) coexist, particularly in farming and retail. Therefore, the transformation of this system requires the combination of technological, institutional, and social innovation. The research conducted by Ingram et al. [21], for instance, focuses on networks made of “producers, customers, experts, NGOs, SMEs, local administrations, as well as official researchers and extensionists, that are mutually engaged with common goals for sustainable agriculture and rural development” [21] p. 58. Community and institutional support in food system transitions was also highlighted by Bui et al. [22] in their analysis of four contrasting cases of new agro-food initiatives in different regions in France (i.e., a community procurement platform, a farm incubator, a community supported agriculture initiative, and a local organization for the preservation of water quality). They found a “unique sequence pattern” across these initiatives in which interactions between the new initiatives and local authorities played a key role. Through network building, the actors were able to share new visions and practices of agricultural development and coordinated action. This process led to the reconfiguration of the regime at the local level. As the authors point out, the drivers of change were mostly organizational and institutional [22]. The importance of networks and institutional support seems to be a common trait of successful initiatives [23].

A second aspect is that different production systems often coexist at the regime level. In most countries, the agro-food socio-technical system is therefore a patchwork of regimes with which the organic farming niche must coexist [24,25]. Industrialized agriculture, which is capital and scale intensive, usually specializes in a single product through monocultural production (e.g., crops, fruits, vegetables, or husbandry) and deals with large distributors/retailers. This type of farming is highly integrated in global agro-food chains. It is also possible to find traditional agriculture developed by family-owned small or medium sized farms. Protected designations of origin (PDO) and protected geographical indications (PGI) correspond to other typologies of farming, where quality products are based in a single specific territory, the designation of which becomes a monopoly and a brand of local produce [26]. This is very relevant for many regions in European countries [23], including Portugal. In addition, the integrated production mode, where farmers are committed to both moderate or minimal use of chemicals and food quality, is very important in some countries. As time goes by, this production mode can even entail a transition to bio food production, as happened in Switzerland [27].

A third specificity of the agro-food system relates to the dual effects of policy measures. On the one hand, without strong public action, the transformational power of new experiments in farming practices is limited and slow-moving [9,28]. On the other, however, as Kemp et al. notes, “government policy may also be a barrier” [29] p. 178, not only by issuing contradictory signals but also because “the existing regulatory framework may actually form a barrier” [29] p. 178. In fact, the existing policies are ‘naturally’ adapted to the incumbent technologies and not to the new ones. The new mode of farming is required to comply with a specific regulation [30] that is far more demanding than the regulations for agricultural conventional production. The latter is subject to relatively lax norms, namely in terms of the use of chemicals and animal husbandry. This imbalance puts the organic production at a huge disadvantage in terms of the selection environment [25], as pointed out by the agents involved. Urgent political action and policy reform is required to make the competition between the two modes fairer [31–33].

A fourth aspect is that the agro-food system transition is very dependent on consumer behaviour. Since organic food is considerably more expensive and less accessible, con-

sumers must be pro-active supporters of this form of production. Therefore, they play a very relevant role. Not only must they dedicate more time to shopping as sales points of organic products are usually less geographically accessible in most countries, but they must also be willing to spend a larger share of their budget on food. This represents a change in lifestyle and cultural factors are involved in consumers' decisions [5].

The food system transition is therefore a complex process. In accordance with the highlighted specificities, our analytical model stresses the following dimensions: (i) the features and role played by institutional, social, and technological innovations; (ii) the relevance of public policy, through regulation and public funding, to the emergence and development of this niche (organic farming); (iii) the niche–regime interactions in production and commercialization processes.

Figure 2 presents the key analytical dimensions in line with the literature review. These analytical dimensions guided a critical analysis of the main drivers and obstacles, characteristics, and strategies of the alternative agro-food initiatives in the LMA's organic niche. The results can contribute to the debate on the main types of agro-food initiatives and the problems involved in the scaling up of organic farming, as an alternative to the conventional mode of production.



**Figure 2.** Analytical model. Source: Authors.

The model's main analytical dimensions are as follows. Firstly, the types of innovation, notably social and institutional innovation which are of great importance in the food system transition. Next public policy impact, via funding and regulation of the organic farming activity, not disregarding the overall regulations for farming in general. Finally, the strategies deployed by the organic farming initiatives to interact with the dominant regimes in agro-food production and commercialization. These strategies range from coexistence with no (significant) relationships with the dominant regime(s) to attempts to build a mode

of sustainable food production and commercialization that aims to scale up and become an alternative to the dominant regime. Taking into account the purpose and theoretical grounding of this research, the selected case study characteristics are also included in the model.

### 3. Territorial Context

Metropolitan areas are privileged contexts for the emergence of alternative initiatives in the food system due to their markets, logistics platforms, and their consumers' educational level and higher income level. With almost 3 million inhabitants (27.5% of the country's population) [34], the Lisbon Metropolitan Area (LMA) contributes to the formation of about 36% of the Portuguese GDP [34]. According to the latest statistical data from 2016, the LMA has one of the lowest proportions of agricultural land in organic farming in the country (1.8%) [34]. This may represent an opportunity to expand the sector, given the territory's significant agricultural area (see Table 1) and the diversity and availability of resources (i.e., social, economic, environmental, political) that create an appropriate *milieu* for the emergence of innovations.

In national terms, recent studies [8,9,35,36] and statistical data show the formation and expansion of the organic movement in Portugal. Currently, Portugal ranks 14th in terms of the total organic area of the EU28. Spain (16.6%), Italy (15.2%), France (13.9%), and Germany (9.1%), which together concentrate more than half of the EU's organic area [37], lead the ranking. In 2017, 7% of the Utilized Agricultural Area (UAA) in Portugal was under organic production mode (the EU28 average was also about 7% in 2017), managed by almost 4674 registered agricultural producers, 760 processors, 22 importers, and 2 aquaculture producers [38]. These operations also include activities related to food industries such as slaughterhouses; the preparation and preservation of meat; the preparation and conservation of fish, crustaceans, and mollusks; the preparation and preservation of horticultural products (fruits and vegetables); the production of animal and vegetable oils and fats; etc.

In Portugal, the composition of the farming workforce is older than that of the EU28, with just 2.6% of the farmers under the age of 35 (7.5% in the EU28) and 46.5% over the age of 64 (29.7% in EU28) [7].

Over the last years, the country's organic farmland has gradually increased from 214,442 ha in 2008 (5.7% of UAA) to 253,786 ha in 2017 [38]. Despite modest progress, the evolution is encouraging when compared to the 7183 ha listed in the first records of 1994 [38]. This progress corresponds to a generalized increase in the organic area across the country. In national terms, the Centro and Alentejo are the regions with the largest areas (Table 1).

The increase in the organic production area is the result of several support schemes provided by rural development programmes over recent years (i.e., RURIS (2000–2006), PRODER (2007–2013), and PDR (2014–2020)). Land is predominantly used for pasture (58%), followed by forage/fodder crops (14%), dried fruits (9.7%), olive trees (8.6%), arable crops (2.9%), fallow (2.4%), fruit growing (1.6%), vineyards (1.4%), horticulture (1.2%), and aromatic plants (0.3%) [38]. There has also been an expansion of organic production in livestock (i.e., sheep, bovine, poultry, and apiculture) and an increase in the number of producers (i.e., from 446 in 2004 to 1300 in 2017) [38]. Thus, most of the crops (pasture and fodder) are grown to feed livestock and not for direct human consumption.

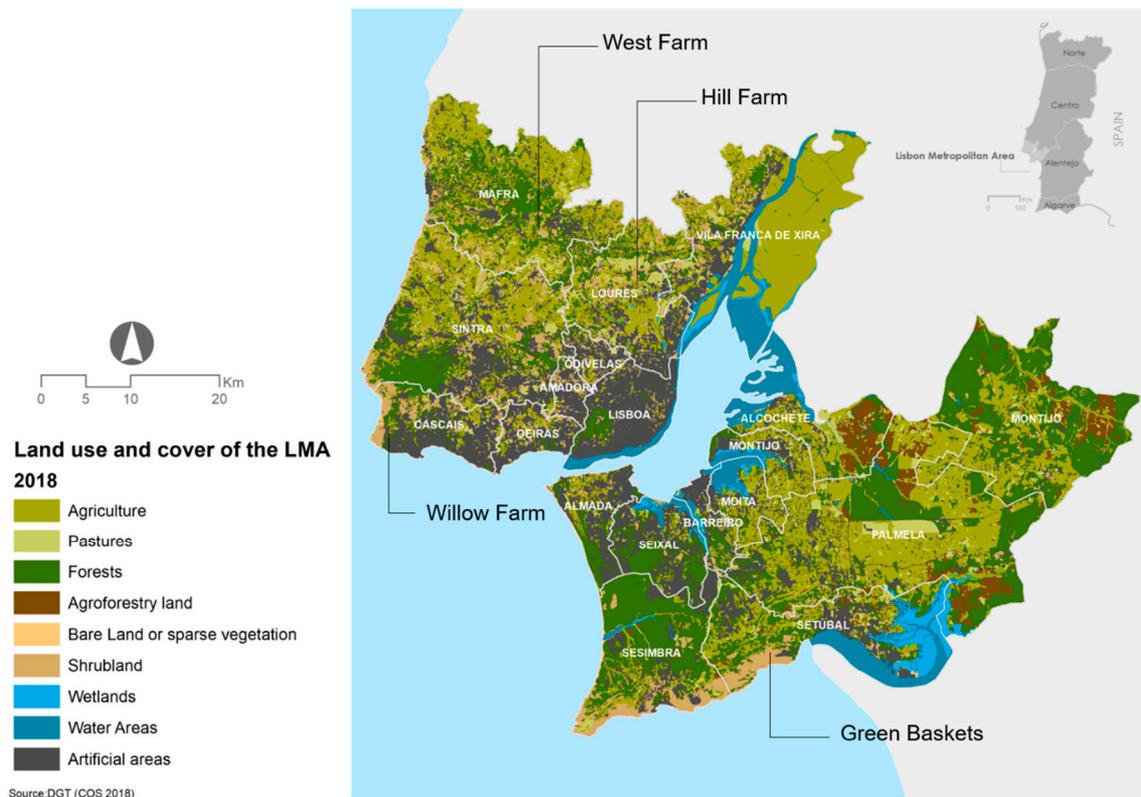
In that scope, it is important to note that the European subsidies policy supporting the conversion to organic farming is mainly focused on “area driven payments”, which favour the emergence of extensive crops and activities (46% of holdings in the country have less than 2 hectares) [8].

As a result of this context, the supply of products is small, and there is a lack of crop diversity, namely vineyards, vegetables, fresh fruit, milk, and derivatives [9]. Not only is the subsidy model inadequate, but the production of these types of crops also requires

greater expertise and technical knowledge, management skills, and labour inputs, thus restricting the volume of production [8,36].

The imbalance between the domestic supply and demand for these goods has led to a sharp increase in import flows in recent years [38].

The fresh product sector can therefore have economic relevance (e.g., differentiated value-added products) and excellent conditions to develop in the Lisbon Metropolitan Area (Figure 3), as recently demonstrated by the assessment study of the agro-ecological potential of Regional Food Self-Reliance [12].



**Figure 3.** Land use of the Lisbon Metropolitan Area and location of case studies. Data Source: DGT [39].

**Table 1.** Organic farming in Portugal and Lisbon Metropolitan Area.

<b>National Level—2017</b>
Organic farming represents 7% of the Utilized Agricultural Area (UAA)
4674 registered agricultural producers, 760 processors, 22 importers, and 2 aquaculture producers
Land uses in organic farming mode: pasture (58%), forage/fodder crops (14%), dried fruits (9.7%), olive trees (8.6%), arable crops (2.9%), fallow (2.4%), fruit growing (1.6%), vineyards (1.4%), horticulture (1.2%), aromatic plants (0.3%)
Share of Utilized Agricultural Area (UAA) dedicated to organic farming: Centre 7.2%; Alentejo 6.2%; North 2.0%; Lisbon Metropolitan Area (AML) 1.8%; Algarve 1.2%
<b>Lisbon Metropolitan Area</b>
Organic farming represents 1.8% of the Utilized Agricultural Area (UAA)
Land uses in organic farming mode: arable cultures (31%), permanent pastures (27%), temporary cultures (26%), permanent cultures (11%), set aside (5%), and family gardens (0.2%)

Sources: [35,38,40].

Moreover, this territory is a strategic mediator between urban and peri-urban areas, as already mentioned. This mediation could enhance the proximity between the places of production and consumption, generating opportunities to develop new strategic linkages (e.g., short supply chains) that will strengthen the local economy.

#### 4. Materials and Methods

We are addressing an emergent phenomenon with little quantitative information and involving few individuals. Our population is made of certified organic farming initiatives located in the Lisbon Metropolitan Area that are part of an emergent organic food niche. The empirical study of these individual entities requires in-depth investigation and within their real-world context. The boundaries between the individuals and the context are not clear-cut. This is a situation where the case studies method should be adopted [41]. The ensuing selection of cases was guided by criteria of relevance and diversity. We wished to study the most important initiatives but also to obtain a diversified sample, with multiple-case studies [41,42], taking into account our analytical model. In fact, although our cases have much in common, their characteristics and the strategies adopted to interact with the dominant agro-food regime are diverse.

The research path included the following steps:

1. First, the exploration of secondary sources in order to collect systematic and potentially exhaustive information from reports, websites, and articles about the most innovative experiments in organic farming in the territory. A snowball strategy was also used; that is, we asked the interviewees to provide or confirm information and give contacts to other relevant cases of organic farms located in LMA.

2. Second, the selection of cases: the selection of cases sought to take into account diverse realities of organic production in LMA, namely regarding the importance of diverse types of innovation (technological, social, institutional), the existence and role of public support to alternative agro-food initiatives in LMA and participation in networks. It is also important to consider the relations between the niche and regime of these alternatives in the agro-food system. Therefore, the cases fall into different analytical categories of initiatives.

3. Building on the theoretical framework, the third step was to construct a semi-open questionnaire to use in the interviews with the business representatives/entrepreneurs (Figure 2). Semi-structured interviews not only allow comparability of results in a multiple case study, but also foster fluidity in the interview [41].

The questionnaire is organized as follows:

- Emergence and evolution of the initiative;
- Profile and motivations of the interviewee;
- Role of public funding and other institutional support;
- Characterization of the business strategies, notably the productive and commercialization strategies, including the relationships and networking with suppliers, customers and similar producers;
- Characterization of the innovative aspects in technological and organizational options in farming and commercialization.

4. The fourth step corresponded to the interviews to the leaders of the initiatives, one for each case study. We made a scheduled visit to the venue and facilities of the selected farm (i.e., cultivated plots, greenhouses, warehouses, processing facilities, farm shops, and restaurants), and administered the questionnaire in a face-to-face interview with the farm's main representative. After obtaining permission, in all cases, including the video interview, pictures were taken, and the interviews audiotaped.

5. Finally, the recording was transcribed and interpreted in the light of similar experiments reported in the literature.

The first case study focused on West Farm, a family-run organic farm located in North LMA (see Figure 3). A visit was made in October 2018 when we conducted a semi-structured interview with the farm's main representative (owner and manager). The second case study was of Willow Farm in February 2019 (see Figure 3). The third case

study was carried out in February 2019 and focused on a short supply chain composed of a network of producers, identified in Figure 3 as Green Baskets. An interview with the executive director and founder of the project was conducted through a video conference. The fourth case study, Hill Farm (see Figure 3), a family business focusing on organic poultry farming in LMA, was conducted in October 2019. During the visit to the farm, we interviewed the farm's main representative (owner and manager).

## 5. Results

In this section, we present and reflect on the four selected case studies of organic food initiatives located in the LMA. After a brief presentation, we explore the following analytical dimensions: story, aim, emergence drivers, innovations involved (technological, social, institutional), funding, and facilitators/obstacles to the process. The goal is to identify the dynamics path of these cases, considering the specificity of transition in the food system mentioned in the literature review, the current support for these emergent initiatives (e.g., European funds), and the main difficulties facing the sector (e.g., institutional, legal) (see Table 2).

### 5.1. West Farm

The first case, West Farm, is a family-owned enterprise that dates back to the late 1960s. At that time, the business was dedicated to fruit production (i.e., pears). In the late 2000s, the heirs began a process of converting part the farm to an organic production system. At present, the farm has 14 hectares dedicated to organic certified agriculture as well as 13 hectares of the old pear orchard that could not be converted from the conventional system.

According to the current holder, that transformation was predominantly motivated by a personal lifestyle shift driven by her values in relation to farming sustainability. Furthermore, this transition marks a new phase of the project aimed at expanding and differentiating the quality of production and creating a registered trademark that brings added value to the company.

The business adopted a 'farm to fork' strategy, including all phases of the food supply chain (i.e., production, processing, distribution, and consumption). Their own production is supplemented with different products (e.g., fruit, potatoes, onions, and carrots) bought from a network of intermediaries from other farms. This collaborative arrangement improves the variety of products available in their marketing channels, namely in their own shop, the local organic markets (e.g., Príncipe Real and Campo Pequeno, in Lisbon; and Cascais) and the more than 600 baskets they distribute weekly in the LMA.

These main activities are complemented by an organic restaurant on-site, which recently received support for the refurbishment of its facilities from the European Rural Development Programme, LEADER. In 2010, they also obtained financing from the Portuguese programme for rural development, PRODER, to convert other facilities (i.e., greenhouses, and plant processing/packaging). The support of public funding has been important to achieve better multifunctionality and improve the farm's performance.

The sales channels mentioned above are supported by a strong investment in brand development and online marketing through the new technological platforms and social media (e.g., sending newsletters to big corporations offering their employees discounts that allow the creation of new delivery points). In particular, social networks (e.g., Facebook, Instagram) and the company's website function as virtual stores, which make it possible to combine traditional knowledge with new sustainability values and consumer practices.

In addition, this strategy seeks to improve the proximity to consumers by promoting different activities on the farm (e.g., workshops, field trips, actions with schools). These activities stimulate the sense of belonging and the creation of a community committed to the values of transition to sustainability, boosting the farm's responsibility in environmental issues (e.g., the clients' growing environmental awareness accelerated the use of alternatives to plastic in boxes). Reference was also made during the interview to the importance

of informal collaborative networks between organic producers, which are considered extremely useful not only for the exchange of knowledge and information, but also to diversify variety and complete the products offered, thus strengthening the business dynamics in the organic market.

**Table 2.** Case study analysis.

	West Farm	Willow Farm	Hill Farm	Green Baskets
<b>Type of initiative and activities</b>	Private enterprise, family business (farm, supply chain, shop, restaurant).	Private enterprise (farm, shop, supply chain, restaurants, distribution with own fleet of cars).	Private enterprise (farm), family business.	Short supply chain (network) promoted by a local development association (non-profit association).
<b>Drivers of the initiative</b>	Environmental and ecological values.	Environmental and ecological values.	Environmental and ecological values.	Environmental and ecological values. Rural/local development.
<b>Production and commercialization strategies</b>	Local and seasonal organic products.	Local and seasonal organic products.	Local and seasonal organic products.	Local and seasonal organic products plus traditional agricultural products.
	Farming dominates. Strong multifunctionality.  Producer networks (local and regional producers, depending on the products, to complement the farm offer).	Distribution and commercialization are dominant. Some degree of multifunctionality.  Producer networks (local, regional, national, and international suppliers to create a broad commercial offer).	Farming is exclusive. Weak multifunctionality.  Producer networks (to obtain technical and logistic support).	Distribution networks plus a large number of local producers.  Several local short supply chains (local distribution plus sales points), coordinated by a national online platform.
<b>Interactions with the dominant regime</b>	No connections. Coexistence as an isolated business. Regional scope.	Commercial connections with the dominant regime, through sales in conventional food outlets. National scope and scaling up at the commercial level.	No connections. Coexistence as an isolated business. Regional scope.	No connections. Coexistence as a network business. National scope and scaling up.
<b>Public support</b>	European Funds (Rural Development Programme).	European Funds (Rural Development Programme).	European Funds (Rural Development Programme).	European Funds (European Social Fund, EQUAL).
<b>Barriers</b>	- Bureaucracy in public support (funds and technical assistance). - Labour market (difficult to find farm workers).	- Certification process of the producer network (importance of trust in producer network).	- Small scale. - Legal and bureaucratic procedures. - Need to change public policy (e.g., Common Agric. Policy), in order to protect the organic sector (unfair competition from conventional agribusiness). - Free riding situations in the networks.	- Difficulty in national management of the network of producers (farmers).

Source: Information collected by the authors.

In the interviewee's opinion, the market response (i.e., growing network of producers and consumers) was essential for their business development. The full coordination of all processes in the management system gives the business greater autonomy (e.g., setting

prices, stock volume, and diversity of species to produce). Simultaneously, the cooperation between producers helps reduce the uncertainty of operations, alleviating the numerous difficulties faced in the agro-food sector (e.g., devaluation of agriculture, difficulty in hiring manpower, bureaucratic burden, lack of technical support and information).

### 5.2. Willow Farm

Willow Farm is also a private family business located in the LMA that is dedicated to the production, processing, and distribution of organic products. In addition to a farm, they hold two shops (each of which has a restaurant) and a distribution fleet. The idea for the project came about in the 1990s following an end-of-course project (agronomy) of one of the family members, who had decided to study agronomy abroad, becoming one of the first accredited professionals to provide technical support in Portugal. At the time, organic farming was underdeveloped in the country.

In the late 1990s, they had already converted the family farm's 17 hectares into a 100% biological system. They went through various stages of production, such as pioneering forms of organic chicken raising (for egg production) and a processing system to produce jams. They created a home-delivery system when organic farming was still a very small niche. These first experiments were abandoned as they acknowledged new unexplored areas of investment, taking advantage of the growth and changes in the national and international markets.

Over the past few years, the initiative has demonstrated great financial autonomy; indeed, the public financing from European funds has been limited to an annual grant to maintain organic farming practices.

The company's current mission is to deliver quality products to as many customers as possible. In recent years, they have focused on supplying large supermarket chains and specialty shops. In 2018, sales reached EUR 6 million (about one fifth of which is their own production), which means they are now primarily intermediaries and distributors. They currently import about 50% of the products they commercialize.

Given that they have become a reference company with large and well-established customer base, digital platforms do not matter much in this business. Far greater importance is attached to the network of partners they have managed to build up as they now provide logistic and technical support to over two hundred domestic producers. In this field, Willow Farm strives to reorganize the producers' business and commercial structure so as to boost the flow of products. The interviewee noted that "our producers are also our customers, and this model also allows them to diversify their offer in the markets and in basket systems". Willow Farm combines traditional techniques of production and sales channels (i.e., farm shops) with a large supply to supermarkets and retailers, offering quantity, quality, and diversity in a wide range of products. In fact, they have become an important intermediary for the distribution of national and international organic products that enables small producers to sell their goods worldwide. According to the interviewee's market experience, the producers are mainly motivated to become involved in the network and organic business by the search for a lifestyle change, environmental awareness, and the desire for a healthier life.

In the future, maintaining confidence and certification levels are the main challenges of the sector identified by the entrepreneur. As the interviewee pointed out, instability and uncertainty (e.g., climate change, cross-contamination) hamper production management and make it more difficult to control operations (e.g., removal of the stock that may have been contaminated by pesticides, price volatility, penalties). In addition, the controlled temperature systems for perishable items and the respective delivery/shipping network in Portugal are insufficient, dispersed, and expensive. Thus, the cost of transportation outside of large urban centres makes products disproportionately expensive, limiting the spread of organic products in the rest of the country. The distribution network of large retailers is therefore an essential tool for the dissemination of organic produce as they have logistic structures spread all over the country capable of overcoming these difficulties.

### 5.3. Hill Farm

Our third case study, Hill Farm, is a 7-hectare organic poultry farm that was acquired by the current owners in the early 20th century. The business has since gone through numerous transformations. In the 1990s, the heirs began the process to convert the small farm into an organic production system with a view to improving sustainability. The aim was to reduce the environmental impacts whilst obtaining the appropriate valorization of the quality crops produced (i.e., fruit: grapes, figs, apricots, persimmons, pomegranates, peaches).

The current manager decided to change the core business of the farm a few years ago, motivated by the ideas learned at specialized training on organic farming (promoted by a local association). The production was switched to organic chickens in an attempt to improve the economic viability of the agricultural holding and overcome the seasonality of their activities. At the time, she was in search of a new lifestyle and change of career and saw the enterprise as an opportunity to restart professionally.

This reformulation obtained public financing from the Instituto do Emprego e Formação Profissional (IEFP) as well as annual support from European funds for the preservation of organic farming practices.

Various attempts have been made to diversify over time, namely into wine and olive oil production and other projects related to animal husbandry, such as gluten-free pastries and animal breeding. However, only the production and commercialization of eggs have been maintained, supplemented by the sale of seasonal fruit. The interviewee noted that the economic viability of these projects had been limited by the small size of the farm and that the legal burden of the organic certification process is detrimental to the dynamism of these small businesses.

This business is focused only on the direct provision of small shops and medium-size retailers in LMA and depends largely on the network of commercial partnerships (some of them operating and competing in the same sector) to perform specialized tasks such as egg classification, transportation, and logistics.

This duality of collaboration/competition generates price volatility and reduces the profit margin, causing great instability in the business. Indeed, the interviewee talked of the 'conventionalization' of commercial relations and the business vision of the organic market in recent years. The traditional principles of organic farming, based on relationships of mutual aid, trust, and loyalty between producers, now assumes less importance. Hence, the lack of organizational support limits the management of stable cooperation networks and becomes an obstacle to the creation of value.

In the interviewee's opinion, strategic measures and public policies should be adopted to boost entrepreneurship and cooperation networks between stakeholders, as Portugal is unable to compete in quantitative terms in the organic arena. These measures would enable the internationalization of the products in markets where differentiation and quality are more highly valued. With reference to public policies, the interviewee also added that "the Common Agriculture Policy (CAP) should reflect a new agricultural model, where the agrochemical industry must be regulated with surcharges and penalizations to compensate the numerous problems created by that sector". From the perspective of an organic producer, the current situation is clearly unfair. Organic farming, which plays a societal role (i.e., preservation of natural resources, biodiversity, animal welfare), must comply with demanding production standards, competing with the 'conventional agrochemical model' where the crops are easier to produce and are subject to fewer legal restrictions and controls. This kind of barrier inevitably has implications in the price of commodities, which impacts their economic viability and competitiveness and thus hinders the future of organic farms.

### 5.4. Green Baskets

The fourth case corresponds to a short supply chain promoted by a local development association on the south bank of LMA. Inspired by a French project, the Green Baskets network emerged in 2009 and involves producers, consumers, and local author-

ities (e.g., municipalities and local development agencies). Supported by the EQUAL programme of the European Social Fund, this project aims to address the challenges of traditional agriculture (i.e., small scale and family farming).

The local development association's diagnosis of the territory at the time identified the sector as one with no efficient means to sell its production (i.e., commercial channels and marketing strategies for local products) and an aging population on the verge of abandoning the activity. It was therefore urgent to create mechanisms to revitalize the agricultural structures and commercialize production, taking advantage of the proximity between producers and consumers in peri-urban areas.

Initially, this collaborative network included just five producers, selling about 20 baskets/boxes a week in the Setúbal district. Boosted by a new Portuguese Rural Development Programme—PRODER—other regional development agencies and Local Action Groups joined the project from 2010 and disseminated the Green Baskets model to their territories.

The business model is based on local short supply chains in which each centre assumes local/regional distribution. The producers aggregate the goods at one sales point and the consumers collect the baskets in line with the specifications (i.e., type of products, schedule) set out on the online orders platform.

The baskets contain fresh seasonal products that can come from either traditional agriculture (with minimum use of pesticides) or organic farming. Currently, the network has 117 centres all over country, which corresponds to 124 farms, selling to more than 4000 weekly customers at 158 delivery locations that provide approximately 35–36 tons of fruit and horticultural products each week.

Over the past few years, Green Baskets has been recognized as a profitable business and new members have joined the network. It became an important supplement to the family budget, providing a stable and reliable income, particularly during the 2008 economic crisis. In some cases, it became a full-time job, particularly for young producers who obtained organic certification. The interviewee also noted the importance of technical support, advisory services, and the exchange of knowledge, experiences, and information—a learning platform—provided by the programme as extra motivation for producers joining the network.

Green Baskets' collaborative network is based on relationships of trust and proximity between consumers and producers. This sense of community and local identity, stimulated by the new consumer values of health, environment, justice, as well as institutional support, were the key elements for the project's success and promoted the co-creation of a more sustainable food system and a new interterritorial development model.

However, maintaining this model in the future entails considerable costs for the local association, founder, and incubator of the project, notably the registered trademark and management of the online platform. In the interviewee's opinion, the Green Baskets model has now scaled up from the local experiment and has become a robust business; thus, the national operation should incorporate its maintenance costs and be managed autonomously; this was also emphasized by the leader of the association who created and developed this network.

## 6. Discussion

The empirical results are now discussed in line with the main dimensions of the analytical model, the literature review and the research questions. A summary is presented in Table 3.

### 6.1. Environmental Values as Drivers of Change

The case studies highlighted some important aspects of the transition of the Portuguese food system. Food production, distribution, and consumption involve several dimensions of life and society, and this complexity and multidimensionality is well illustrated by the four cases. In addition, the food system has a huge environmental and ecological impact [13]. All leaders and entrepreneurs of the initiatives mentioned the importance

of contributing to an environmental and ecological shift through the transformation of farming and commercialization practices and lifestyles (both theirs and those of consumers). Therefore, they are guided by sustainability principles in their businesses.

In their view, the shift in consumers' values toward a sustainable lifestyle also plays an important role in the success of the new agro-food initiatives. As shown in the literature review, similar studies developed in European metropolitan areas demonstrated that the involvement of customers in decision-making processes helps to enhance the response to their demand, needs and aspirations (e.g., improve crop planning, delivery schedules, etc.) [43]. The case studies analysed also demonstrated that the use of internet-based solutions and social networks helped establish better practices and closer consumer–producer links, boosting collective approaches to the transition process [44].

**Table 3.** Overview of the key factors for the formation of an organic food niche.

Motivations & Values	Enablers
<ul style="list-style-type: none"> <li>- Environmental and socio-ecological values</li> <li>- Expand the business</li> <li>- Lifestyle change</li> <li>- Sell quality products, respect for seasonality, freshness, social justice</li> <li>- Compliance with indication of origin, transparency, and traceability</li> </ul>	<ul style="list-style-type: none"> <li>- Availability and access to land</li> <li>- Networking and collaboration</li> <li>- Adaptability and multifunctionality</li> <li>- Diversification of marketing strategies (i.e., online sales)</li> <li>- Availability of resources (i.e., economic, natural, knowledge)</li> </ul>
Driving Factors	Barriers to Growth
<ul style="list-style-type: none"> <li>- The 2008 financial crisis stimulated new farmers to enter organic agriculture</li> <li>- Growing interest in food (i.e., health and environmental concerns, knowledge, purchasing power)</li> <li>- Favourable legislation, financial, and administrative support</li> </ul>	<ul style="list-style-type: none"> <li>- Bureaucratic burden and legislation (i.e., inappropriate conditions in trade relations, organic certification, technical assistance, unfair competition from conventional agribusiness)</li> <li>- Demanding requirements of organic certification (i.e., methods, equipment, income versus production efficiency)</li> <li>- Lack of professionalization and business experience</li> <li>- Rivalry with similar initiatives</li> <li>- Conventionalization of the 'organic' concept</li> <li>- Misperception among consumers of the high costs of organic production, which imply higher prices</li> <li>- Logistical and market problems (i.e., market volatility, instability of income)</li> <li>- Agricultural system (i.e., farm size and structure)</li> <li>- Labour market (i.e., difficult to find farm workers)</li> </ul>

Source: Information collected by the authors. Adapted from Lara et al. [44].

The emergence of 'new' sustainability values can therefore be considered one of the main drivers of the creation of the organic farms and alternative food supply chains under analysis.

### 6.2. The Relevance of Networks and Land Ownership

Despite the diversity of their business strategies, the producer networks are a central aspect in these cases and in the development of organic farms in Portugal generally. With the partial exception of Hill Farm, organic farmers consider networks to be of vital

importance to their businesses. The need to provide local and seasonal products on a regular basis justifies the articulation with other producers at a local, regional, national, and even international scale (in the case of Willow Farm). In addition to commercial exchanges, these networks constitute a means to exchange information and ideas and, in the case of Willow Farm, even technical advice.

This conclusion is in line with the findings of the Pathways project, which analysed green niche innovations in the national agro-food system in eight European countries. The study concluded that “a network among organic farmer producers in order to promote communication and the exchange of experiences, as well as developing an advisory service and political representation, is considered to be a step forward, both to help maintain and to spread organic social farming initiatives” [45].

In the Portuguese case, the ownership of land is also important to the development of businesses, taking into account the country’s property rights structure, namely in peri-urban areas, where it is very difficult to buy or rent land. This is a crucial factor to consider in the research on the transition of the Portuguese food system.

Findings from previous studies have shown that the availability and access to land is a key issue in other European metropolitan areas. For example, Doernberg et al. [46] point out that in Berlin, increasing “land rents, make organic production less profitable. This can become a serious barrier to the emergence of alternative food networks generally, as well as for regional value adding and rural development. This situation is not specific for the studied region, but applies to all of Germany, where the extension of organic agriculture is stagnating due to rising land prices” [46] p. 13. Another study, conducted in the Barcelona and Madrid metropolitan areas, revealed that “farms are generally smaller than those operating in spaces free from urban pressures (high land prices and lack of affordable land near urban populations for new entrants in the sector), a fact that calls for more intensive land use and a small number of key products that attract urban consumers (local, seasonal and fresh vegetables)” [43] p. 8.

### *6.3. The Importance of Public Support*

European financial support, namely under the Common Agricultural Policy, has played an important role in these cases. However, location in a region with a relatively high per capita income negatively affects their access to European Structural Funds. Previous studies revealed that access to European Union funds has been the most relevant element to encourage farmers to convert to organic farming practices in Portugal, although these monetary incentives are bound by an ‘area driven payments’ philosophy and market mechanisms [8,45].

In addition, the legal framework related with farming in an urban context raises problems related with land classification and urban management. Therefore, the urban–rural split should be overcome in the transition of the metropolitan food system, namely through the effective application of the second pillar of the European Common Agriculture Policy (CAP). The integration of rural and territorial planning policies is an important challenge for the agro-food system transition.

### *6.4. Relationships with the Dominant Regime(s)*

Research on Portuguese organic agriculture cases pointed out that sustainable agriculture experiments can be divided into two groups: a first group made up of organic experiments with strong linkages with consumers, short supply chains and led by strong environmental values and motivation; and a second group formed by “conventionalized” producers driven by profit and scaling up motives who started a rapprochement with the dominant regime with the aim of introducing their products in the conventional retail outlets [36].

We found three main strategies to deal with the dominant regime in our case studies. The first strategy is to coexist with the dominant regime without forming any significant relationships. Two of the certified organic farms (West Farm and Hill Farm) adopted

autonomous commercial strategies vis-à-vis the regime, in the form of basket schemes, direct on-site selling and farmers markets, and have kept away from conventional retail. They are supported by loyal customers, who advocate sustainable agriculture and are willing to pay higher prices for healthy food. In addition, these businesses are active members of similar producers' networks where they are commercial partners' and share information. These initiatives do not explicitly look for any kind of compatibility with the regime and have no intention to enter the dominant distribution and retail system. Although their representatives want to have an economically viable business and be successful, profit is not their main aim. Instead, they want to run an environmentally sustainable business in accordance with their values. Profit is a necessary condition, not a finality.

The second strategy is represented by a short supply chain (Green Baskets), created by a non-profit local development association. From the outset, they endorsed a philosophy of local seasonal food production (organic and non-organic) and short supply chains, with a baskets scheme that became very popular. In the wake of success, they spread across the country with local replications, each relying on a network of small local producers. Their philosophy is at odds with the dominant regime and although they have grown significantly, they do not aim to scale up and transform the regime. They stand as an alternative by providing quality food away from conventional retail. In addition, they are a relevant outlet for small producers in their area of action. A curious aspect of the Green Baskets initiative is that it seems to be the more radical as an alternative to the dominant food paradigm, even though they are not exclusively focused on organic food.

The third strategy is deployed by Willow Farm, which managed to scale up mainly as a generalist organic food business; its main activity is no longer farming, but rather the distribution and commercialization of organic produce through a baskets scheme and direct on-site selling, as well as through large conventional retail chains. Indeed, they created a market niche in the dominant food market [47]. The strategy involves large-scale imports and seems to pursue mostly business growth. This project intentionally strives to achieve compatibility or complementarity with traditional food retail. Growth and profit seem to be relevant drivers of this initiative. Participation in networks is mostly for commercial purposes. However, it is interesting to notice that this firm provides technical advice and information to smallholdings, therefore contributing to structuring an organic food sector in the country.

These cases illustrate the debate on niche–regime interactions, where two main lines of thought can be found. A first line argues that the niche development and linking with the regime demands a certain degree of compatibility with the dominant regime, in terms of practices and visions [21,25,48]. A second current claims that in the presence of radical innovations, what matters most is the creation of new shared visions of farming and food among the promoters and supporters of the new initiatives, and these new visions are in sharp contrast with conventional ideas [22].

It is too soon to predict the fate of these distinct paths in the organic food sector in Portugal. We believe, however, that it is interesting to follow them, as they can be seeds of change, strengthening the sustainable food niche under formation.

#### *6.5. Problems and Challenges: Bureaucracy, Institutional, and Legal Framework*

The problems and challenges identified in the cases under analysis are mainly related with the legal and institutional context of their activities (Table 3).

In fact, in addition to the red-tape burden and the delay in the certification processes, some entrepreneurs mention the bias of the legal framework. This framework puts far more demands on organic agriculture in terms of standards and procedures, thus transmitting a sense of unfair competition from conventional agriculture. Overall, as Matos et al. argue [9], organizational weaknesses, lack of adequate technical support, and an unfavourable business environment can define the success or failure of an agricultural enterprise.

Networks might also pose problems in some cases as members of these enterprises may face a cooperation–competition dilemma. Indeed, organic producers need to cooperate in order to respond to market demands and diversify their marketing channels; however, at the same time, they are competing in the same market. Free-riding sometimes takes place in contradiction with the dominant moral values associated with organic business.

As Truninger [49] points out, the meaning of organic food has polarized in recent years in Portugal. Thus, networks with varying institutional and commercial arrangements are based on different inspirations and values. The author reports the emergence of a dichotomized configuration: “one, the official/certified, corresponds to the meanings of organic food underpinned by current EU regulations where certification determines the identity of organics (grounded in industrial opinion and commercial conventions). The other frames the unofficial meanings of organic food, which transcends regulatory boundaries and is grounded in green, civic, inspiration and domestic conventions” [49] pp. 121–122. However, there is also a pattern of ‘hybridization’. Recent studies about German agro-food initiatives reveal the same patterns of hybridization strategies in food chains and actors where conventional and organic products do not appear to share the same values but combine many channels and scaling-up strategies [46] p. 14. It should be noted that many authors warn that “actions taken by the initiatives are very fragile and can be easily captured by conventional approaches if not being supported by a legal framework” [44] p. 16.

## 7. Conclusions

Over the last few years, the evolution of the organic farming niche in Portugal has been positive, albeit modest. There is much to be done before the niche can broaden and scale up to become a stronger alternative to the dominant agro-food system.

In the previous section, and according to the research questions, we identified, in a systematic way, the main drivers and barriers to the emergence of an organic agro-food niche (Table 3). We mentioned several elements that are perceived as obstacles to the deployment of the niche: bureaucratic burden, demanding requirements of organic certification, technical issues, and problems associated with the agricultural system.

Second, the study highlights common traits of the emerging niche initiatives, such as the importance of the entrepreneurs’ values and motivation, and the relevance of networks and public funding. However, the participation in the producers’ networks is sometimes contradictory, since it involves both cooperation and competition for a small market.

Third, our study also identifies different modes of interaction with the regime, associated with different production and commercialization strategies, levels of success, and characteristics of the initiatives. The niche is heterogeneous with different coexisting paths. It is still not possible to predict how they will evolve or whether all of them will succeed.

Finally, the current support from agricultural and rural policy has been important but is not sufficient to foster a rapid extension of sustainable agriculture. Indeed, the research identified a perception of unfair competition between organic and conventional agriculture due to the respective regulatory frameworks and policy orientation. We believe that regulation and support schemes addressed to conventional agriculture should become more demanding, with higher standards in terms of healthier food and natural resources conservation. Therefore, the regulatory environment must change if transition is to speed up in the coming decades. Public procurement may also contribute to this aim. This change entails strong political support.

Future research will address thoroughly agricultural policy and its impact on the extension of organic farming in Portugal. It will also address the role of territorial planning policy, public procurement, and local authorities in supporting organic farming initiatives. Finally, the relationships of organic food producers with incumbent companies in distribution and retail will also be studied. Along these lines, we will try to develop further knowledge about the development of the organic food niche and the transition of the agro-food system in Portugal, with the aim of contributing to the debate at European level and in general.

**Author Contributions:** Conceptualization, I.S. and M.F.F.; Data curation, S.B.; Formal analysis, I.S. and M.F.F.; Investigation, I.S., M.F.F. and S.B.; Methodology, I.S. and M.F.F.; Supervision, I.S. and M.F.F.; Visualization, S.B.; Writing—original draft, I.S. and M.F.F.; Writing—review & editing, I.S. and M.F.F. All authors have read and agreed to the published version of the manuscript.

**Funding:** This research has been supported by the research project SPLACH—Spatial Planning for Change—POCI-01-0145-FEDER-016431, financed by the European Regional Development Fund (FEDER), through COMPETE2020, Competitiveness and Internationalization Operational Programme (POCI), and by National funds through the Foundation for Science and Technology FCT.

**Institutional Review Board Statement:** Not applicable.

**Informed Consent Statement:** Not applicable.

**Data Availability Statement:** Not applicable.

**Acknowledgments:** We warmly acknowledge the entities analysed, which have been anonymized. We are grateful to the anonymous referees for their helpful comments.

**Conflicts of Interest:** The authors declare no conflict of interest. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript, or in the decision to publish the results.

## References

1. Popkin, B.M. Relationship between shifts in food system dynamics and acceleration of the global nutrition transition. *Nutr. Rev.* **2017**, *75*, 73–82. [CrossRef] [PubMed]
2. Green, K.; Harvey, M.; Mcmeekin, A. Production Systems Transformations in Food Consumption and Production Systems. *J. Environ. Policy Plan.* **2010**, *5*, 145–163. [CrossRef]
3. Wilson, G. From ‘weak’ to ‘strong’ multifunctionality: Conceptualising farm-level multifunctional transitional pathways. *J. Rural Stud.* **2008**, *24*, 367–383. [CrossRef]
4. IFOAM-Definition of Organic Agriculture. Available online: <https://www.ifoam.bio/why-organic/organic-landmarks/definition-organic> (accessed on 20 June 2020).
5. Tibbs, H. Changing cultural values and the transition to sustainability. *J. Futur. Stud.* **2011**, *15*, 13–32.
6. Darnhofer, I. Socio-technical transitions in farming: Key concepts. In *Transition Pathways towards Sustainability in Agriculture*; Sutherland, L.A., Darnhofer, I., Wilson, G.A., Zagata, L., Eds.; CAB International: Wallingford, UK, 2015; pp. 17–31.
7. Coenen, L.; Truffer, B. Places and Spaces of Sustainability Transitions: Geographical Contributions to an Emerging Research and Policy Field. *Eur. Plan. Stud.* **2012**, *20*, 367–374. [CrossRef]
8. Dentinho, M. Organic Farming in Portugal the Impact of Public Measures. Ph.D. Dissertation, New University of Lisbon, Lisbon, Portugal, 2016.
9. Matos, A.; Cabo, P.; Ribeiro, M.I.; Fernandes, A. Two decades of organic farming in Portugal. In *Proceedings of the FONCI MED—Gouvernance Responsable des Régimes Fonciers*; Instituto Politécnico de Bragança: Bragança, Portugal, 2016; p. 26.
10. Ingram, J. Agricultural transition: Niche and regime knowledge systems’ boundary dynamics. *Environ. Innov. Soc. Transitions* **2018**, *26*, 117–135. [CrossRef]
11. Tibério, L.; Baptista, A.; Cristóvão, A. Sistemas agroalimentares locais e comercialização em circuitos curtos de proximidade. *Rev. Rede Rural. Nac.* **2013**, *3*, 6–9.
12. Cardoso, A.S.; Domingos, T.; De Magalhães, M.R.; Melo-Abreu, D.; Palma, J. Mapping the Lisbon potential foodshed in Ribatejo e Oeste: A suitability and yield model for assessing the potential for localized food production. *Sustainability* **2017**, *9*, 2003. [CrossRef]
13. Benis, K.; Ferrão, P. Potential mitigation of the environmental impacts of food systems through urban and peri-urban agriculture (UPA)—a life cycle assessment approach. *J. Clean. Prod.* **2017**, *140*, 784–795. [CrossRef]
14. Galli, A.; Pires, S.M.; Iha, K.; Alves, A.A.; Lin, D.; Mancini, M.S.; Teles, F. Sustainable food transition in Portugal: Assessing the Footprint of dietary choices and gaps in national and local food policies. *Sci. Total. Environ.* **2020**, *749*, 141307. [CrossRef]
15. Pires, I. *Desperdiço Alimentar*; Fundação Francisco Manuel dos Santos: Lisboa, Portugal, 2018.
16. El Bilali, H.; Allahyari, M.S. Transition towards sustainability in agriculture and food systems: Role of information and communication technologies. *Inf. Process. Agric.* **2018**, *5*, 456–464. [CrossRef]
17. Geels, F.W. Low-carbon transition via system reconfiguration? A socio-technical whole system analysis of passenger mobility in Great Britain (1990–2016). *Energy Res. Soc. Sci.* **2018**, *46*, 86–102. [CrossRef]
18. Smith, A.; Raven, R. What is protective space? Reconsidering niches in transitions to sustainability. *Res. Policy* **2012**, *41*, 1025–1036. [CrossRef]
19. Cohen, N.; Ilieva, R.T. Transitioning the food system: A strategic practice management approach for cities. *Environ. Innov. Soc. Transitions* **2015**, *17*, 199–217. [CrossRef]

20. Geels, F.W.; Sovacool, B.K.; Schwanen, T.; Sorrell, S. The Socio-Technical Dynamics of Low-Carbon Transitions. *Joule* **2017**, *1*, 463–479. [CrossRef]
21. Ingram, J.; Maye, D.; Kirwan, J.; Curry, N.; Kubinakova, K. Interactions between Niche and Regime: An Analysis of Learning and Innovation Networks for Sustainable Agriculture across Europe. *J. Agric. Educ. Ext.* **2015**, *21*, 55–71. [CrossRef]
22. Bui, S.; Cardona, A.; Lamine, C.; Cerf, M. Sustainability transitions: Insights on processes of niche-regime interaction and regime reconfiguration in agri-food systems. *J. Rural Stud.* **2016**, *48*, 92–103. [CrossRef]
23. Spaargaren, G.; Oosterveer, P.; Loeber, A. (Eds.) *Food Practices in Transition—Changing Food Consumption, Retail and Production in the Age of Reflexive Modernity*; Routledge: New York, NY, USA; Abingdon, UK, 2012.
24. Dumont, A.M.; Gasselin, P.; Baret, P.V. Transitions in agriculture: Three frameworks highlighting coexistence between a new agroecological configuration and an old, organic and conventional configuration of vegetable production in Wallonia (Belgium). *Geoforum* **2020**, *108*, 98–109. [CrossRef]
25. Smith, A. Green niches in sustainable development: The case of organic food in the United Kingdom. *Environ. Plan. C Gov. Policy* **2006**, *24*, 439–459. [CrossRef]
26. Schimmenti, E.; Viola, E.; Funsten, C.; Borsellino, V. The Contribution of Geographical Certification Programs to Farm Income and Rural Economies: The Case of Pecorino Siciliano PDO. *Sustainability* **2021**, *13*, 1977. [CrossRef]
27. Belz, F.M. A Transition Towards Sustainability in the Swiss Agri-Food Chain (1970–2000): Using and Improving the Multi-level Perspective. In *System Innovation and the Transition to Sustainability: Theory, Evidence and Policy*; Boelie, E., Frank, W., Geels, K.G., Eds.; Edward Elgar Pub: Cheltenham, UK, 2004; pp. 97–114.
28. Vanloqueren, G.; Baret, P.V. How agricultural research systems shape a technological regime that develops genetic engineering but locks out agroecological innovations. *Res. Policy* **2009**, *38*, 971–983. [CrossRef]
29. Kemp, R.; Schot, J.; Hoogma, R. Regime shifts to sustainability through processes of niche formation: The approach of strategic niche management. *Technol. Anal. Strateg. Manag.* **1998**, *7325*, 175–198. [CrossRef]
30. European Parliament and of The Council Regulation (EU) 2018/848 of the European Parliament and of The Council of 30 May 2018 on Organic Production and Labelling of Organic Products. Available online: [https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L\\_.2018.150.01.0001.01.ENG](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2018.150.01.0001.01.ENG) (accessed on 17 February 2020).
31. Marsden, T. From post-productionism to reflexive governance: Contested transitions in securing more sustainable food futures. *J. Rural Stud.* **2013**, *29*, 123–134. [CrossRef]
32. Pe'er, G.; Zingrebe, Y.; Moreira, F.; Sirami, C.; Schindler, S.; Müller, R.; Bontzorlos, V.; Clough, D.; Bezák, P.; Bonn, A.; et al. A greener path for the EU Common Agricultural Policy. *Science* **2019**, *365*, 449–451. [CrossRef]
33. Varia, F.; Macaluso, D.; Agosta, I.; Spatafora, F.; Dara Guccione, G. Transitioning towards Organic Farming: Perspectives for the Future of the Italian Organic Wine Sector. *Sustainability* **2021**, *13*, 2815. [CrossRef]
34. INE Anuário Estatístico da Área Metropolitana de Lisboa. Available online: [https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine\\_publicacoes&PUBLICACOESpub\\_boui=410495118&PUBLICACOESmodo=2](https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_publicacoes&PUBLICACOESpub_boui=410495118&PUBLICACOESmodo=2) (accessed on 18 February 2020).
35. INE—Proporção da Superfície Agrícola em Agricultura Biológica (%) por Localização Geográfica. Available online: [https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine\\_indicadores&indOcorrCod=0009168&xlang=pt&contexto=bd&selTab=tab2](https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_indicadores&indOcorrCod=0009168&xlang=pt&contexto=bd&selTab=tab2) (accessed on 11 February 2020).
36. Truninger, M. *O Campo Vem à Cidade: Agricultura Biológica, Mercado e Consumo Sustentável*; Imprensa de Ciências Sociais: Lisboa, Portugal, 2010.
37. EUROSTAT Organic Farming Statistics. Available online: [https://ec.europa.eu/eurostat/statistics-explained/index.php/Organic\\_farming\\_statistics](https://ec.europa.eu/eurostat/statistics-explained/index.php/Organic_farming_statistics) (accessed on 18 February 2020).
38. DGADR—Direção-Geral de Agricultura e Desenvolvimento Rural. *A Produção Biológica em Portugal*; DGADR: Lisbon, Portugal, 2010.
39. Direcção Geral do Território Cartografia de Ocupação do Solo (COS). Available online: [http://www.dgterritorio.pt/cartografia\\_e\\_geodesia/cartografia/cartografia\\_tematica/cartografia\\_de\\_uso\\_e\\_ocupacao\\_do\\_solo\\_cos\\_clc\\_e\\_copernicus/](http://www.dgterritorio.pt/cartografia_e_geodesia/cartografia/cartografia_tematica/cartografia_de_uso_e_ocupacao_do_solo_cos_clc_e_copernicus/) (accessed on 11 February 2020).
40. INE-Recenseamento Agrícola. Available online: [https://ra09.ine.pt/xportal/xmain?xpid=RA2009&xpgid=ine\\_ra2009\\_publicacao\\_det&contexto=pu&PUBLICACOESpub\\_boui=119577123&PUBLICACOESmodo=2&selTab=tab1&pra2009=77999466](https://ra09.ine.pt/xportal/xmain?xpid=RA2009&xpgid=ine_ra2009_publicacao_det&contexto=pu&PUBLICACOESpub_boui=119577123&PUBLICACOESmodo=2&selTab=tab1&pra2009=77999466) (accessed on 18 February 2020).
41. Yin, R.K. *Case Study Research and Application—Design and Method*, 6th ed.; Sage: Thousand Oaks, CA, USA, 2018.
42. Eisenhardt, K.M. Building theories from case study research. *Acad. Manag. Rev.* **1989**, *14*, 532–550. [CrossRef]
43. Yacamán Ochoa, C.; Matarán, A.; Mata Olmo, R.; López, J.M.; Fuentes-Guerra, R. The potential role of short food supply chains in strengthening periurban agriculture in Spain: The cases of Madrid and Barcelona. *Sustainability* **2019**, *11*, 2080. [CrossRef]
44. Lara, L.G.; Pereira, L.M.; Ravera, F.; Jiménez-Aceituno, A. Flipping the Tortilla: Social-Ecological Innovations and Traditional Ecological Knowledge for More Sustainable Agri-Food Systems in Spain. *Sustainability* **2019**, *11*, 1222. [CrossRef]
45. Ribeiro, S.C.; Martins, J.; Pereira, H. Pathways project. In *Exploring Transition Pathways to Sustainable, Low Carbon Societies. Country Report 9: Green Niche-Innovations in the Portuguese Agro-Food System*; EU Seventh Framework Project, Grant Agreement Number 603942; European Commission: Brussels, Belgium, 2015.
46. Doernberg, A.; Zasada, I.; Bruszezwska, K.; Skoczowski, B.; Piorr, A. Potentials and limitations of regional organic food supply: A qualitative analysis of two food chain types in the Berlin Metropolitan Region. *Sustainability* **2016**, *8*, 1125. [CrossRef]

- 
47. Elzen, B.; Van Mierlo, B.; Leeuwis, C. Anchoring of innovations: Assessing Dutch efforts to harvest energy from glasshouses. *Environ. Innov. Soc. Transit.* **2012**, *5*, 1–18. [[CrossRef](#)]
  48. Diaz, M.; Darnhofer, I.; Darrot, C.; Beuret, J.E. Green tides in Brittany: What can we learn about niche–regime interactions? *Environ. Innov. Soc. Transit.* **2013**, *8*, 62–75. [[CrossRef](#)]
  49. Truninger, M. The organic food market in Portugal: Contested meanings, competing conventions. *Int. J. Agric. Resour. Gov. Ecol.* **2008**, *7*, 110–125. [[CrossRef](#)]