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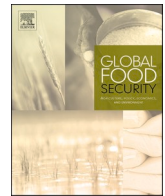
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Do small food businesses enable small farms to connect to regional food systems? Evidence from 9 European regions

Paola A. Hernández^{a,*}, Francesca Galli^b, Paolo Prosperi^{b,c}, Sandra Šūmane^d,
Dominic Duckett^e, Henrik Eli Almaas^f

^a Mediterranean Institute for Agriculture, Environment and Development (MED), University of Évora, Núcleo da Mitra, Apartado 94, 7006-554, Évora, Portugal

^b Department of Agriculture, Food and Environment, University of Pisa, via del Borghetto 80, 56124, Pisa, Italy

^c Mediterranean Agronomic Institute of Montpellier (CIHEAM-IAMM), UMR MOISA (University Montpellier, CIRAD, CIHEAM-IAMM, INRAE, Institut Agro), Montpellier, France

^d Baltic Studies Centre, Kokneses prospekts 26-2, Rīga LV, 1014, Latvia

^e The James Hutton Institute, Craigiebuckler Aberdeen, AB15 8QH, Scotland, UK

^f Institute for Rural and Regional Research - Ruralis, University Centre Dragvoll (NTNU), Loholt Alle 81 (4th Floor), N-7049, Trondheim, Norway

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ABSTRACT

For small farms across Europe, connecting to small food businesses offers a significant route to market. We analyse survey data from 85 small food businesses in nine European regions and explore the enabling and limiting conditions around this connectivity. We show how connectivity depends on context-based interrelationships among food system actors and consider the effects of these relations on small farm integration. Results show stronger connections when small food businesses are themselves farm-based. Weaker linkages are also apparent in the absence of public and social support. We argue that regional food systems can be enhanced by increasing small food businesses' capacity to source from small farms, with the added benefit of increasing the viability of these small businesses.

1. Introduction

The industrialisation of food systems and the increased urbanisation undergone in Europe during the last century has led to transformations in the way we manage food production and relate to food consumption (Moragues-Faus et al., 2017). It has caused the de-territorialisation of food systems (Vasta et al., 2019) through the concentration of control in the agrofood sector (IPES-Food, 2016) and the fragmentation of social relationships (Mourato et al., 2018). Support for small farmers has been debated as key to restore food systems and promote rural sustainability (Fanzo, 2018; Galli et al., 2018; Reina-Usuga et al., 2018) both via the promotion of sustainable, innovative and competitive farming systems (Khalil et al., 2017; Randelli and Rocchi, 2017; Tribaldos et al., 2018) and through the increased integration of small farmers in short food supply chain (SFSC) initiatives, such as localised and alternative food systems (Brinkley, 2018; Lamine et al., 2019).

It has been widely documented that SFSC can help reduce the vulnerabilities of local food systems by activating endogenous resources and promoting regional embeddedness (Yacamán Ochoa et al., 2020),

with processing as a crucial link enabling producers to transform food surpluses (Yacamán Ochoa et al., 2019). SFSC are catalysts of initiatives in food systems based on principles of proximity and trust-based relationships, often described as chains with no more than one intermediary (Chiffolleau et al., 2016) and defined according to a context-based geographical distance between producer and consumer (Kebir and Torre, 2020).

Small food businesses (SFB) can be important actors in SFSC. They can help re-territorialise food by "capitalising on the many advantages small food producers have over the industrial food system, including freshness, variety, [provenance], and transparency on how the food was produced, while creating the opportunity to develop social bonds with their customers" through innovative interactions (e.g. new outlets, new forms of relationships and place-based initiatives, etc.) (Halweil, 2004). SFB, in our study, refer to enterprises carrying out activities related to any stage of production, processing and distribution of food; establishing a buyer-supplier relationship with the regional small farms (Grando et al., 2019); are locally owned (the capital remains in the region); and, use key foodstuffs in the territory. 'Small' relates to their size as regards

* Corresponding author.

E-mail address: paolaher@uevora.pt (P.A. Hernández).

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economic features and labour (on average, no more than five non-family paid employees in all sampled SFB).

However, the capacity SFB might have to embed small farm products in local food systems is still to be scrutinised. The outcomes from SFB-small farm dynamics depend on a number of conditions (e.g. small producers' capabilities, market and political infrastructures, and other factors) that are context-based (Böhme et al., 2008). Several micro-environmental factors also affect SFB's relative competitiveness to work in collaboration with small producers, such as logistics and supply, which are inherently linked to the businesses' small-scale retailing capacity (McKeever et al., 2014) and the issues in the scaling up of SFSC (Connelly and Beckie, 2016; Yacamán Ochoa et al., 2019).

Aiming to explore the capacity of SFB to integrate small farms in food systems, our paper operationalises the proposed theoretical analysis model by Corrêa et al. (2020) situated in entrepreneurial studies (Fig. 1). It uses empirically-collected data from 85 selected SFB in nine European regions part of the Horizon 2020 SALSIA Project – *Small Farms, Small Food Businesses and Sustainable Food and Nutrition Security* (2016–2020). Our study focuses on the micro-environmental elements ('externalities') characterising SFB integration into the food system, from a relational perspective, and less on the internal specificities determining each enterprise's behaviour. It aims to expand understanding of structural relations affecting the small businesses environment. Its objective is to identify relevant food system interrelations enhancing or hindering SFB capacity to integrate small farms in food systems.

The next section is structured in five parts. It first sets the conceptual approach to explore our research object and ground the methodology. Then, it describes the methodology used for data collection and analysis. Section 4 includes our empirically-grounded results, followed by the discussion of our findings. Last, we present our conclusions.

2. Conceptual scope

We adopt a food systems approach to discover the relational elements determining SFB behaviour in the regional food system (Ingram, 2011). We understand food systems as "complex multilevel networks of actors (and related activities) embedded in intricate socio-economic, political and ecological relationships that shape their outcomes across different geographies and social groups" (Moragues-Faus et al., 2017). We embrace the definition of territorialised agro-food systems suggested by Rastoin (2015) to look at the complex dynamics circumscribed in each EU region (NUTS3) examined, placing them in what we call regional food systems: the "set of agri-food sectors localised in a regional geographic space and coordinated by territorial governance". Likewise, we analyse SFB-small farm linkages in the context of food system

activities (production, processing, distribution and consumption) and interactions with other actors and elements (Ericksen et al., 2012).

The model proposed by Corrêa et al. (2020) is used to comprehend how the development of SFB can affect the integration ('embeddedness' in Granovetter's terms) of small farms into the regional food system. Local embeddedness is a conceptual approach used in rural entrepreneurship studies to examine the nature, depth and extent of entrepreneurs' social and local ties within their rural contexts (Pato and Teixeira, 2016). We look specifically at SFB collaborations with regional small farms in our food system analysis, understanding that "entrepreneurship is embedded, submerged and absorbed in fluid networks of individual relationships and economic objectives conjoined with non-economic ones according to each social context (McKeever et al., 2014). Its adequateness to our research is manifold: first, it presumes entrepreneurs' decisions are the combination of multiple relational and context-based (territorial) factors, going beyond a merely rational choice approach; second, it captures the integration of entrepreneurs into relational structures or systems from a holistic perspective that blends society, culture and economy; and third, it considers two non-economic processes, redistribution and reciprocity, as social behaviours coexisting alongside market behaviours.

Our analytical model represents entrepreneurs, hereby SFB, as adaptive actors in multi-faceted interrelations with various values, norms and institutions across three structures: market, redistribution and reciprocity. It understands that SFB are "creating network structures as a result of self-seeking actions by focal nodes and their connections" (Ahuja et al. (2012) cited in Corrêa et al., 2020:233), and considers the systematic context-based specificities affecting SFB trajectories in food systems. In our analysis, these three structures are non-hierarchical, work in interdependence with each other, and are assumed as forms of integration:

1) *Market structures* include all market-related rationalities impacting the SFB-small farm interaction. They depend on the value chain that actors operate in, but also on multi-level market pressures defining the rules of supply and demand (e.g. raw material sourcing, concentration of value chains, etc.), as well as businesses' distribution and marketing strategies (Armendariz et al., 2015). Here, we include the multifunctional dimension of small farms' activities (Renting et al., 2008), such as diversified value chains, and all factors responding to the market limitations within a specific food system.

2) *Reciprocity* considers the exchange of material or immaterial goods to one another for mutual benefit, by virtue of values and norms that aim at maintaining social ties (e.g. families, clan, friendship, communities, associations, etc.) (Corrêa et al., 2020). We pay particular attention to *reciprocity structures* (both formal and informal) among food

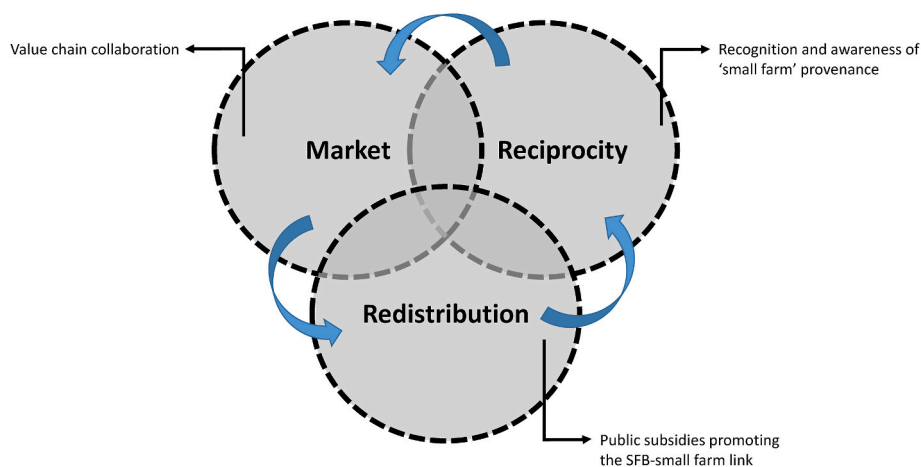


Fig. 1. The three structures determining the capacity of small food businesses to integrate small farms in regional food systems. Adapted from the proposed theoretical analysis model of Corrêa et al., 2020.

system actors that promote collaboration between SFB-small producers (e.g. product certification or labelling schemes). Collective arrangements, such as small farmers' associations and complementary food networks (e.g. purchasing groups) are also considered here, plus cultural norms like food habits and consumer demands. All of these have the capacity to prompt closer links between SFB with regional small farm producers, prioritising collective welfare and social stability (Marshall et al., 2018).

3) Redistribution assumes processes and measures (whether local, national or supranational) prescribing that members of a collectivity make contributions (i.e. in the form of taxes, goods or services) to a central agency with the responsibility to allocate these contributions to a shared interest of the collectivity (Corrêa et al., 2020). *Redistribution structures* include centralised norms or values that can play a facilitating and/or discouraging role in the promotion of the SFB-small farm link (IPES-Food, 2016); for instance, through the allocation of public support via national and European funding mechanisms. Financial support through the EU Common Agricultural Policy (CAP), Rural Development Programmes (RDP) (i.e. on-farm processing), I&D support, etc. belong in this category.

Three core questions underpin our research and guide our discussion: i) *how feasible is it for SFB to procure raw materials from small farms?*; ii) *what is the relevance of 'small farm' provenance branding vis-à-vis other labels such as 'local' or 'artisanal' in terms of consumer perceptions and SFB marketing strategies?*; and iii) *what is the support small farms have to get into processing and enter into SFSC as small food businesses?*

3. Methodology

3.1. Data collection

The empirical foundation for our study is data collected in 2016–2018 from 85 purposely selected SFB in nine NUTS3 European regions (Annex 1): Alentejo Central - PT183, and Oeste - PT16B (Portugal), Lucca - IT112, and Pisa - IT117 (Italy), Latgale - LV005, and Pieriga - LV007 (Latvia), Hedmark - NO021 (Norway), East Scotland/Perth and Kinross, and Stirling - UKM27 (ESe), and West Scotland/Lochaber, Skye and Lochalsh, Arran and Cumbrae, Argyll and Bute - UKM63 (WSe) (United Kingdom). Whilst not statistically representative, they aim to show the diverse connections that SFB can establish with small farms in different food systems across the continent. Moreover, European rural regions have a longstanding history of maintaining strong links with food systems (Pinto-Correia et al., 2018). Small food businesses were selected according to the SALSA criteria (Rivera et al., 2019). Each SFB had to: be linked to one of four key food products studied in each region; source at least one of its raw food products from small farms; have on average no more than five non-family paid employees; and, be locally owned (specifically, the capital remains in the region). Approximately nine SFB were sampled per case study. The selected SFB ranged from food processors, to food retailers and to food service businesses (HoReCa industry - Hotels, Restaurants and Catering).

Our sample includes SFB with diversified activities (e.g. wine-making, cheese production, baking, agro-tourism, selling of foodstuffs, etc.). The main value-adding activity reported was processing (40% of the sample), followed by distribution (34%), although with great

variations across the regions (Table 1). SFB carrying out processing activities transformed raw foods, which could be produced on-farm or purchased from other suppliers, into processed products such as olive oil, wine, fermented foods, cured meats, fruit jams, etc. Lucca, Pisa and Hedmark included the larger number of processing SFB; whereas Oeste, ESe and WSe presented a greater number of SFB involved in distribution activities of products like fruits and meals. In this study, we refer to small farms that transform their own products and sell them in processed form through various commercialisation channels as "farm-based SFB".

Various data sources inform our analysis: i) A common, structured questionnaire addressed to SFB on the businesses' demographics, activity, labour and income, market relations, governance issues, and perceptions and future perspectives (Annex 2); ii) specific questions about SFB done through interviews with regional small farms in a separate interview survey (Annex 3); and, iii) subsections of the Food System Regional Report (Annex 4) reporting the validation of data collected in each region through individual interviews to key informants and participatory methods with actors across the sector (four focus groups and one regional workshop, both per region). A key aim of these mixed-source methods was to capture the different profiles of SFB, as well as to identify their relevant opportunities and challenges at the regional food system's scale. Annex 5 shows the scope and number of participants in our collection methods.

3.2. Data analysis

Data analysis started with qualitative/semantic analysis (Corbin and Strauss, 2008) of the data sources, building a list of key issues per region regarding SFB development. The list of key topics from all regions were compared and synthesised into five variables. From the SFB questionnaire, we selected data sets supporting our assumptions for each variable, which later were validated with the reports. SFB_Q21,22,28 were analysed quantitatively; whereas two variables required a mixed-methods analysis. For Question 6 (SFB_Q6) 'What activities do you carry out?', we merged similar activities and coded them in four categories, adapting Ericksen's (Ericksen, 2008) four food system processes (1- production (baking and cooking); 2- processing (refining and processing); 3- distribution (retailing and marketing); and 4-other (activities not fitting in categories 1,2, or 3). Instead of using consumption as our fourth category, as proposed by Ericksen, we kept 'other' as in-vivo code, for consumption does not apply as a business activity and data reveals a wide range of uncategorised activities. Questions 19 and 20 (SFB_Q19) 'What are your raw materials?' (list and number of products) and (SFB_Q20) 'Who supplies your raw materials?' were analysed in two ways (Annex 6). The first one considered each SFB individually, thus producing 85 data values. Entries mentioning 'local and regional small farms' or 'own produce' under SFB_Q20 for core products only were labelled Y- yes (indicating a direct connection with small farms, or zero intermediaries between SFB-small farms); while the rest were labelled N- no (indexing an indirect connection with small farms, or one or more intermediaries between SFB-small farms). The second method looked at all the suppliers provided in all responses - a total of 143, because SFB often provided more than one supplier per item. All suppliers were later codified into 6 categories (self, farm in region, local processor/coop, retailer/supermarket, farm outside region, wholesaler) using qualitative

Table 1

Characterisation of SFB in the sample, according to their main adding-value activity.

SFB main activity	NUTS 3 regions									Total
	Alentejo Central (PT)	Oeste (PT)	Lucca (IT)	Pisa (IT)	Latgale (LV)	Pieriga (LV)	Hedmark (NO)	ESe (UK)	WSe (UK)	
Production	2	2	2	1	3	3	0	2	1	16
Processing	2	4	5	6	3	5	7	0	1	33
Distribution	1	7	1	4	2	1	3	5	4	28
Other	0	0	0	1	3	0	1	2	1	8
Total SFB	5	13	8	12	11	9	11	9	7	85

analysis.

4. Results

In our data, we found three interrelated aspects impacting SFB capacity to integrate small farms in food systems: value chain collaboration, lack of branding for small farm foodstuffs, and limited public support. They indicate the particular set of relationships affecting the trajectory of these businesses. All variables inform about the various partners along the value chain and what sort of processes SFB (may or may not) engage in.

4.1. Value chain collaboration

According to our results, SFB confirmed they procured raw food materials from multiple suppliers and reported that raw material procurement makes part of the business strategy to ensure economic viability and satisfy consumer demand, considering aspects such as purchasing price, quantity volumes and continuity of supply, etc. However, it is noteworthy to say that the capacity of SFB to integrate small farms in food systems depended on whether the SFB was farm-based or not. Our data confirmed ‘self’ as the most dominant supplier in sample (28%), representing SFB that were farm-based. The next suppliers in line were ‘retailer/supermarket’ (23%), which could be from inside and outside the region, and ‘farm in region’ (21%), including all farm sizes small, medium and large. Fig. 2 shows the different suppliers SFB reported to use.

Where SFB were farm-based, diversification of activities and use of non-conventional market channels (e.g. SFSC) showed across our case studies to enhance small farm participation in secured markets. Multi-functional farming included agro-tourism activities, common in Lucca, Pisa, and Alentejo Central, which have fostered local and traditional food production and transformation techniques (i.e. micro-processing technologies) to cope with seasonality and expand product availability. Farm-based SFB interested in reaching proximity consumers also confirmed participation in SFSC. A growing niche identified in the Latvian dairy sector was represented by small dairy farmers, who strengthen their market access and position by on-farm small-scale processing and production of various kinds of artisanal dairy products. In many instances they market these products through their own or less conventional channels (e.g. on-farm shop, farmers’ markets).

Interaction of small farms with SFB was also detected in the horticulture sector through SFSC with contracts relying on proximity and a good customer-producer relationship [ESc, WSc, Hedmark]. One example is a horticultural enterprise on the Isle of Arran [WSc] producing herbs and specialised vegetables which intermittently had contracts with local restaurants within a few kilometres. This farmer/

business owner preferred to operate a more reliable, seasonal catering business at festivals and pop-up restaurants via direct marketing. Small farms and SFB [Pieriga] collaborated through common marketing initiatives, primarily at farmers’ markets, but could take other forms such as direct purchasing groups, online direct selling platforms, or local artisanal cooperatives. Although such business models are small producer-friendly, they can also be volatile. For instance, the Stirling Food Assembly (ESc) ceased trading in 2017 and participants on the Isle of Bute and the Isle of Skye (both in WSc) complained that farmers’ market organisation was unreliable and often depended on volunteers. Our data also confirmed that small-producers’ cooperatives can facilitate SFB access to small farm products [Oeste, Alentejo Central]. Such specialised cooperatives collect raw materials from various small farms year-round thanks to their effective storage facilities (e.g. pear, wine, olive oil) and supply the market continuously. SFB using this channel argued that it simplifies logistics by putting all outputs – mostly fruits and horticulture – collectively into a common pool that can better meet the demands of a competitive market.

The connection between small farms and SFB in terms of ‘suppliers – buyers’ was, nevertheless, not evident in our sample. Off-farm SFB often said they preferred to buy products from wholesalers and larger farms that can ensure regular supplies. In cases where small farms marketed their products indirectly, i.e. through other market intermediaries, SFB were usually not among them. For instance, a dairy farmer [Pieriga] indicated that the disappearance of smaller shops in the region has limited available market outlets for local small farmers.

In general, SFB found it easier to procure raw materials from suppliers other than small farms, because of lower transaction costs (single order, traceability, less paperwork) or to guarantee steady supplies. Similarly, SFB did not source from small farms because many small producers preferred to market through conventional channels and not sell to smaller buyers. In the two Scottish regions and Latgale, connections were generally weaker for off-farm SFB. Farm produce shops in ESc and Hedmark reported they preferred continuity of supply and volumes that are difficult for small producers to fulfil, procuring instead from bigger farms and wholesalers. Fig. 3 shows the distribution of suppliers declared by SFB across the studied regions.

However, regulations on food production and distribution were cited by some business owners as risk factors that hamper the planning and development of SFB. Processing businesses (i.e. abattoirs and creameries), it was argued, are more likely to take produce from small farms, however these businesses are generally not ‘small’ [Scottish regions, Hedmark]. Food safety regulations (food handling, traceability of food, food labels, etc.) were also claimed an issue [Alentejo Central, Lucca, Pisa]. In particular, administrative and food safety requirements were deemed ‘bureaucratic and burdensome procedures’ that can hinder the viability of SFB (e.g. traditional production of *talha* wine – an example of retro-innovation of homemade wine made with traditional processing

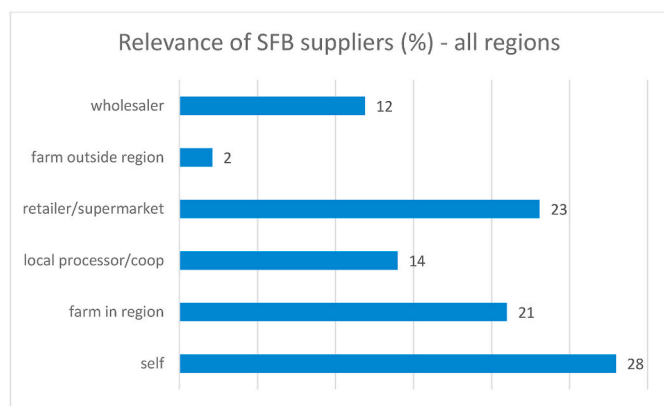


Fig. 2. Reported suppliers by all sampled SFB (*farm in region includes small, medium and large farms).

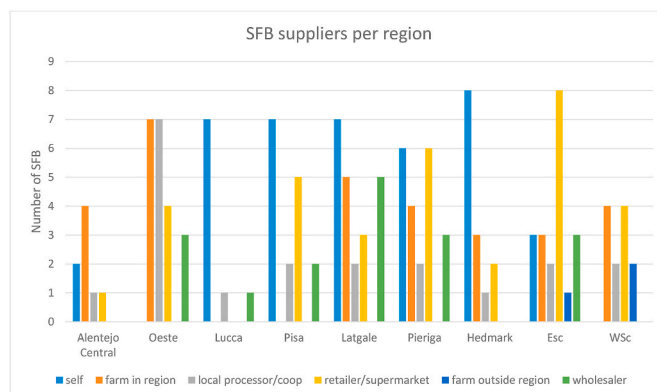


Fig. 3. Distribution of suppliers declared by SFB across the studied regions.

techniques [Alentejo Central]). As a result, SFB stated they must sometimes source from non-small farms to comply with such rules to achieve regulatory compliance and attain their business goals.

4.2. Lack of branding for products from small farms

From our sample we learned that no brand or label exists that identifies products produced by small farms in the market. Instead, official certification and labelling schemes were argued to be used by small farms to give added-value to products, reconnect consumers with producers (including via SFB), and tell a story behind each product (e.g. where, how and by whom it was grown/raised). SFB reported national and international schemes on specific production methods (e.g. organic, integrated production, GlobalG.A.L.P., Tesco Nurture), food quality (e.g. Local Food Quality Assessment and K&L [Hedmark]), geographic provenance (e.g. PDO and PGI, Slow Food) and cultural heritage (e.g. artisanal products, Culinary Heritage Movement and European Culinary Centre [Latgale]). Similarly, labels promoting “local”, “fresh” and “traditional” products were informally employed to attract consumers and tourists.

Nearly sixty percent of the total businesses sampled (50 out of 85) declared non participation in any certification or labelling scheme. Justifications for this behaviour included the lack of incentives and the bureaucratic burden. For example, in Latvia, certifications (i.e. organic, artisanal production) and marketing authorisations were held to be complicated and expensive to comply with, and the controlling bodies criticised as too restrictive. In Lucca, none of the sampled SFB participated in any certification or labelling scheme. Fig. 4 shows the number of SFB participating in certification or labelling schemes across the regions. Procuring from small farms did not appear to be a strong unique selling point (USP) for farm shops in Scotland to leverage either. Uncompetitive prices when compared to large scale operations were also a reason for some SFB to opt for other (and cheaper) raw material sources and skip any branding strategy. In Portugal, a lack of consumer demand for small farm products was said to undermine the viability of SFB using products from small farms: “Lamb meat is looked down upon by younger consumers, who would rather consume beef or pork produced outside their region”, as mentioned in one focus group. In Alentejo Central, niche products were also said to resonate more with tourists, who were credited with greater purchasing power, willingness and curiosity to pay for added-value products. A business owner in Latgale argued a certification held in the past provided no added-value to the business either.

4.3. Public support

For subsidies, we refer to the financial public support that SFB can take advantage of to invest in their activities. In our case studies, less than half of the SFB received any type of subsidies (45%), with great variation across regions. Our data informed us that less than half of the sampled SFB reported support through public funds (Fig. 5). The main identified limitations were the absence of support for SFB to apply for

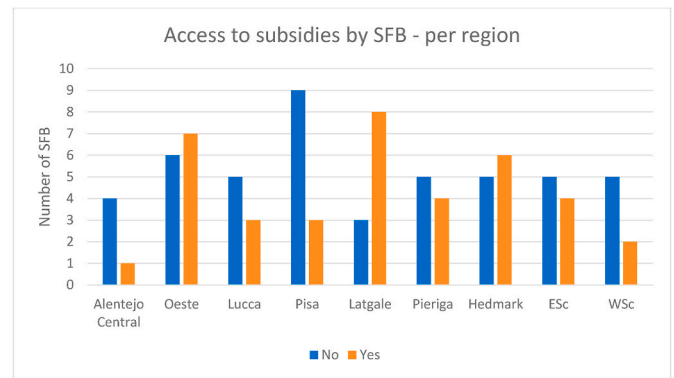


Fig. 5. Number of SFB receiving public subsidies by region.

such subsidies, and/or the lack of specific funding for SFB that do not carry on-farm activities.

Data from the two Italian regions hint that subsidies for SFB are primarily agriculture-driven and derive mostly from the EU Common Agricultural Policy, Rural Development Programmes (RDP) and Common Market Organisation frameworks. This public financial support included single area payments, subsidies for organic agriculture, tax exemption for fuel, and others. Regional governments can also implement laws at a regional level promoting diverse and multifunctional activities by small farmers [Lucca and Pisa] (e.g. on processing and conditioning of on-farm products, [Tuscany Region, 2018](#)). This law aims to make processing and sale of local and on-farm products easier and more flexible (e.g. taking into account local and seasonal ingredients, farmers are allowed to process food in their kitchen if respecting food safety requirements). The support programme for the development of small-scale food processing was said to foster the emergence of many small businesses in the Latvian and Italian regions, through grants that help SFB acquire equipment or build processing facilities. Promotion of SFB in Latgale was said to take place through various means (i.e. a culinary heritage movement, rural tourism activities, LEADER projects, cultural events such as town festivals, traditional celebrations, and food and tourism fairs). One SFB producing wine liquor [Oeste] stressed the important support from the RDP to help launch the business idea, upgrade buildings and equipment, and also make investments.

In Norway, a national policy designated for the development of SFB has been in effect for the past 20 years, strengthening SFB position in the value chain (e.g. SFB could apply for innovation/seed funding for business start-ups). Most businesses sampled in Hedmark expressed satisfaction with governmental regulations and believed them to be fair, as well as important for their businesses’ credibility. On the one hand, SFB owners were pleased with the food safety authorities from which they received advice, legal information, and training on how to establish and run a SFB, increasing their entrepreneurial skills. On the other hand, food businesses in Norway can benefit from positive discrimination through the exemption of registration or approval by the national food safety authorities, as long as they: i) deliver products directly to consumers; ii) distribute products in the local market (within 100 km); iii) deliver up to 600 kg of produce per week; or, iv) do not sell animal products (“[Mattilsynet. Lokalmat - registrering og godkjenning,](#)” 2018).

In contrast, many small farmers interviewed in Pieriga expressed willingness to develop some kind of on-farm processing, but claimed not having the necessary resources (funding, facilities, and knowledge) to implement these plans. In Alentejo Central, non-farm based SFB (e.g. agro-tourism, meal preparation, and agricultural machinery rental) reported difficulties in receiving public subsidies. In Alentejo Central and the Scottish regions, support was said to be tailored mostly for large-scale operations.

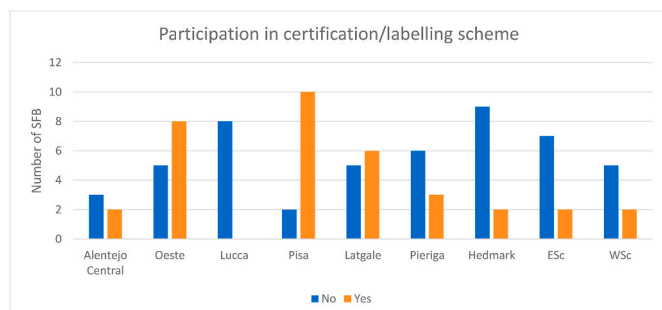


Fig. 4. Reported use of certification or labelling schemes by all sampled SFB.

5. Discussion

This section explores transversally the existing interrelations between SFB and regional small farms in our case studies. The SFB-small farm link varied across our data, reflecting the different abilities SFB have to choose their activities and partners, based on the possibilities and resources available, plus their capacity and skills to turn those resources into entrepreneurial opportunities (Steiner and Atterton, 2015). The discussion below is guided by the three sets of structures (market, reciprocity and redistribution, Table 2) and examines where this link might be challenged and the relationships that can be fostered to enhance the integration of small farms in regional food systems, and, thus, increase SFB development.

5.1. Integration through market relations

We assessed the integration of small farms in the regional food system in terms of their behaviour in the value chain, which refers to the context-bound networks of [food system] actors that “exchange goods, financing, and information, as well as collaborate in the medium and long terms” (Monastyrnaya et al., 2017). This form of integration enabled us to understand *how feasible is it for SFB to procure raw materials from small farms?*

The analysis from our results indicate that the SFB-small farm link depends on whether the SFB is grounded on farming activities or not. If the business is off-farm, results showed that raw materials are mostly purchased by any supplier, except small farms. Two main issues might help explain the limitations for small farm products to remain in the local market, and/or be purchased by SFB: small farms cannot secure the SFB market because they cannot compete against the volume, continuity of supply, and price offered from less expensive suppliers, such as wholesalers and large farms. On the other hand, small farms are likely transforming the product and bringing it directly to the market via SFSC, increasing the value of these products to which SFB cannot access.

As shown in section 4, SFB that do not produce their own raw material tend to source them from the most economically viable channel in the market. This phenomenon responds to current trends in the de-territorialisation of food systems, stimulated by the concentration of power in food systems thanks to the vertical control of food processes in a handful of actors setting the rules of food production and distribution (IPES-Food, 2017). On the one hand, a strategy for small farms to remain viable is by entering SFSC, because these forge “new value chains” with redesigned set of codes, practices and rules to help overcome any

Table 2
Challenges and opportunities to enhance small farm embeddedness in regional food systems, according to the three forms of integration.

Form of integration	Challenges	Opportunities
Market	<ul style="list-style-type: none"> - raw materials outsourcing - regulatory barriers o food production (e.g. food safety) o food distribution (e.g. logistics) 	<ul style="list-style-type: none"> - promote innovative value chains for small farms (e.g. SFSC and small producers' cooperatives to scale-up SFSC)
Reciprocity	<ul style="list-style-type: none"> - lack of brands that identify products from small farms - consumers' perceptions about small food products 	<ul style="list-style-type: none"> - create labelling schemes identifying small farm produce - increase consumers' awareness on small farm foods
Redistribution	<ul style="list-style-type: none"> - limited public funds 	<ul style="list-style-type: none"> - improve financial support oriented for SFB that do not carry on-farm activities - promote positive discrimination for SFB in public governance frameworks

competitive disadvantages in terms of demand and marketability of small farm products (Roep and Wiskerke, 2013). Against this backdrop, SFB are unlikely to purchase their raw materials via SFSC, not only due to increased costs but also because this would add one more intermediary between producer-consumer, which is the opposite of what SFSC stands for (Chiffolleau et al., 2016).

SFB are likely to purchase from actors capable of guaranteeing a steady flow of affordable products, because of their weakened bargaining capacity in food systems (Yacamán Ochoa et al., 2019). Large processors – who are often better geared for interacting with large producers – also represent a viable source for SFB, because the former are often better suited to make investments in basic processing such as washing, grading or packing, and can also devote more resources to customer relationship management (CRM). Large processors in the UK, for example, tend to be centralised and have consolidated over recent decades (e.g. slaughterhouses and creameries), creating logistical challenges and adding transportation cost to small farms' operations (Kennard and Young, 2018).

5.2. Integration through relations based on reciprocity

We see the integration of small farms in regional food systems through the functioning reciprocity structures (both formal and informal) that hint at the forms of collaboration between SFB-small producers. Based upon our findings, we argue that SFB marketing strategies and consumer perceptions play a key role in understanding *what is the relevance of 'small farm' provenance branding vis-à-vis other labels such as 'local' or 'artisanal'.*

Our results confirmed that foodstuffs produced by small farms are not identified with a brand or label that differentiates them, but which could potentially increase their positioning in the market. Two interrelated reasons might help explain this. First, the large array of brands identifying food products (e.g. geographical denomination, production methods, trade conditions, healthy diets, etc.) might be sending mixed signals to consumers, while negatively affecting their purchasing choices (Watts et al., 2018). Second, little effort (public or private) has been made to increase consumers' awareness about the socio-economic and environmental benefits of supporting local foods produced by small farms. These tendencies might limit the capacity of SFB to expand their activities by actively promoting small-scale farm products.

The role of consumers in creating, designing and impacting alternative food networks has strengthened in the last decades (Randelli and Rocchi, 2017); although not homogeneously. Labelling and certification schemes nowadays in Europe emphasize on origin, quality, tradition, history and are related to a territory (Delicato et al., 2019; Giampietri et al., 2016); however, all of these brands remain mostly niche-centred. This phenomenon has in fact brought about the reconnection of some consumers to the food source, while disregarding issues on food production scale and food affordability. The main problem is that although products are labelled 'local' or 'artisanal', and appear to be locally-sourced, small manufacturers – as shown in our results – increasingly import raw materials from outside the region or purchase from large-scale suppliers offering affordable prices, while relying on local industries and services (Avermaete et al., 2004), but still branding them as 'local'. This practice is not only misleading but also discouraging for local consumption by residents in the area, who might recognise whether or not food is in season or appropriate for the territory and lose trust in such labels. On the other hand, well-off consumers (e.g. tourists), at whom most of these certified products are targeted because of their higher purchasing capacity (Balogh et al., 2016), find themselves misinformed while supporting products often produced conventionally by medium and large operations.

Additionally, the increased popularity in Europe of multiple certification labels and brands are conflicting with each other in hybrid food systems that foster the dis-embedding of food systems, while possibly leading to consumers' confusion. This is the case of in-house

certification schemes created by large retailers (e.g. hyper- and super-markets) for 'local' or 'regional' food, which have blurred the boundaries between conventional and alternative supply chains (Bui et al., 2019) and put aside the ethical premises of SFSC. This behaviour could be hindering the capacity of SFB to capture the 'local market' by selling higher quality and specialised products from small farms (Meyerding et al., 2019).

The lack of a clear label identifying and upholding products from small farms is proportionate with consumer awareness and familiarity about the role of small farms in promoting sustainable food systems, which is often facilitated by SFSC. As results confirmed, consumer perceptions about the quality of food produced by small farms depend on whether products are marketed through SFSC or not, as short distance chains (e.g. farmers' markets) have a closer and more direct link, where producers work closely with consumers and awareness raising campaigns often take place (Giampietri et al., 2016).

5.3. Integration facilitated by relations promoting redistribution

The decision for small farms and SFB to engage collaboratively requires mobilising new strategic alliances (e.g. establishing new relationships with food system actors) and building a strong support network of societal organisations, interest groups (e.g. consumers) and also governmental authorities (Esparcia, 2014). In light of this, we consider the processes and governance forms facilitating the allocation of public contributions towards SFB development, to respond to the question: *what is the support small farms have to get into processing and enter into SFSC as small food businesses?*

Our results indicate that the main identified limitations for SFB to scale up their activities were the lack of support for SFB to apply for such subsidies, and the absence of specific funding for non-farm SFB. A lack of supporting mechanisms for these businesses proved to hinder their development, as shown in section 4.3. Access to financial support was deemed essential for SFB to overcome the economic constraints of small entrepreneurs, and especially to establish a logistical infrastructure to market their products (e.g. processing equipment, storage conditions, distribution points, etc.) (Rucabado-Palomar and Cuéllar-Padilla, 2018). As confirmed in our results, application to public subsidies can be a complicated endeavour, often requiring a high literacy level to meet the application requirements adequately. Having technical support and advice in subsidy application (e.g. what kind of programme measures their activities can be funded through) was shown to pay off in Hedmark, where a national framework is enhancing the economic sustainability of SFB with the promotion of SFSC.

On the other hand, the fact that most public subsidies are targeted for farm-based SFB (interested in) carrying out activities like on-farm processing and agro-tourism shows the limited scope of the frameworks, and hints at the need to redefine the wide spectrum of SFB. For instance, businesses in catering, retailing and distribution activities can play an essential role in the integration of small farms in food systems, yet they rarely fall under this umbrella. These off-farm SFB can be a pathway for small farm products, and thus enhance local food systems.

Our data confirmed that SFB can help small farms recover their bargaining capacity in a fragmented food system by participating in SFSC and/or by collaborating with small producers' cooperatives. These two forms of interrelationships might encourage actors to cooperate in 'alternative', local, and direct food initiatives that are crucial for the local economy, communities and also sustainable food systems (Brunori et al., 2016). SFSC can offer unconventional market spaces and relationships where SFB can be better positioned in the food system (Roep and Wiskerke, 2013), granting small farms with the flexibility of marketing conveniently from the farm shop or road stand, plus giving them control over price and the possibility of selling ad hoc (Mundler and Laughrea, 2016).

Cooperative SFSC (including producers' associations/cooperatives and 'food hubs') are another way to increase integration of small farms

in regional food systems, as revealed in our results. Producers' cooperatives promote technological collaboration and support collective processes (e.g. production planning, storage, logistics, distribution, and marketing, etc.) that can enhance the efficiency, viability and competitiveness of small-scale producers (Yacamán Ochoa et al., 2019). These initiatives help with the scaling up of SFSC in places where there is increased demand for local foods, thus the need to satisfy in large volumes. To avoid opting for conventional food production that de-territorialise local food systems, the role of the public administration is essential in supporting small farms and SFSC. For instance, by promoting public procurement contracts via SFSC in school canteens, hospitals, etc. (Yacamán Ochoa et al., 2019).

6. Conclusions

Our study adopted a food system approach to further knowledge in entrepreneurial studies, by exploring the interrelations influencing SFB behaviour in food systems, in terms of recognizing their capacity to be embedded in regional food systems. Three key aspects were found in our case studies to determine the capacity of SFB to link small farms to food systems: value chain collaboration, product branding, and public support. These areas hinted at key nodes of interrelations between SFB and other food system actors that shape the specific set of values, norms and institutions promoting or hindering small farms integration in the food system through SFB. The degree of integration that SFB enable for small farms in regional food systems was considered in terms of three structures: market, reciprocity and redistribution.

We recognise our evidence stems from a limited sample of businesses and sectors, serving mainly to hint at behavioural trends. We discovered that, in general, SFB are more closely connected to small farms when the businesses are farm-based, for small farms act also as in-house product suppliers and can benefit from the agriculture-driven supporting frameworks available for SFB. A lesser connection was evident when the positioning of SFB in the food value chain is weak, whether because of their inability to enter secure markets that can help add value to their activities and products, the absence of a brand identifying 'small farm' products, or due to a lack of financial or social support. Ways to circumvent SFB limitations were found to be the promotion of SFSC, deployment of clear added-value labelling schemes, and support through public governance frameworks like the EU Farm-to-Fork programme.

Further studies on SFB marketing strategies could deepen knowledge about the entrepreneurial decisions behind SFB, enlightening about the motivations and drivers of participation in certification schemes and SFSC. Assessment tools could benefit from more empirical case studies to examine the various structures affecting integration of small farms in regional food systems via SFB, and, thus, inform policy makers about the steps needed to re-territorialise food systems.

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Annex 1: NUTS3¹ regions considered in our study



Annex 2: Questionnaire to Small Food Businesses

Section 1: Background.

1. Age (yrs)
2. Gender (F/M)
3. How long have you been in this business? (Include time helping as a child in the family’s business or as an apprentice) (No. of yrs)
4. Why did you start this business (Family tradition, Marriage, New business opportunities, Lifestyle change, Other)
5. In the last 10 years, what has been the most significant turning point that has affected your business? And how did you deal with it?

Section 2: Description of production.

6. What activities do you carry out? (Approximate share of your business’s time that is spent in: Baking/cooking, Refining, Other processing, Retailing, Marketing, Other)
7. What products do you produce, cook or sell? (approximate %): Vegetables, Fruit, Grapes, Olives, Meat, Milk, Eggs, Cereals, Other
8. What is the distance from your business to the nearest urban centre (more than 10, 000 people), in Km?
9. How long does it take you to travel from your business to the nearest urban centre (more than 10, 000 people), with the transport you normally use? Type of transport:

Section 3: Labour and Income.

10. What is the total annual turnover of the business? (€)
11. What is the total annual income of the business including subsidies (if relevant)? (i.e. what remains from the sales after all the expenses have been paid) (€)
12. How important is this business with regards to your total income? (%)
13. How many Family (non-paid) members work in your business permanently? And occasionally? F (NP): Permanent/Occasional
14. How many Family (paid) members work in your business permanently? And occasionally? F (NP): Permanent/Occasional
15. How many (paid) non-family members work in your business permanently? And occasionally? (Friends and neighbours) NF (NP): Permanent/Occasional
16. How many non-paid non-family members work in your business permanently? And occasionally? (Friends and neighbours) NF (NP): Permanent/Occasional
17. Could you potentially produce, cook or sell more quantity? If yes, what is constraining you from doing it? If not, why? (Y/N) If yes, what is constraining you from doing it? (cost of labour, inputs, too risky, etc.)? Reasons.
18. What are your main expenses? Specify the expense, list and rate in order of importance, 1 being the most important expense

Section 4: Links with Food System.

19. What are your main raw materials? List of raw materials.
20. Who supplies your raw materials? Suppliers.
21. Who are your main clients and in what proportion do you sell to them? (%) (Wholesalers, Other processors, Small Retailers, Supermarkets, Sold directly on business, Farmers markets, Restaurants, Hotels, Sold to consumers through purchasing groups, Through e-commerce, Others)

Section 5. Governance.

22. Do you have access to subsidies or other forms of public support? (Y/N) Which?
23. Approximately what percent of your income do these subsidies represent? (Ask in relation to turnover if necessary) (%)
24. Do you have access to credit or finance when you need it? Who provides it? If not, why? (Y/N)
25. Are you a member of a cooperative or an association? If so, how important is it? If not, why not?
26. Which government regulations do you have to deal with? Describe.
27. Are there government or other regulations (e.g. supplier purchasing standards, hygiene regulations) that make it easier or more difficult for you to produce, cook or sell? If so, what are these?
28. Do you participate in third party certification schemes i.e. like fair trade standard, organic certification, PDO, protected geographical indication etc.?

Section 6: Perceptions and Perspectives.

29. What are the points of strength of your business? And weakness?
30. What are the main external sources of risk for the business?
31. What are your objectives and priorities for the future of your business? what would you need for this to happen?
32. How do you see the future of food businesses like this one in the region in the coming years (10 years approx.)?
33. What is your plan for the continuity of your business after you retire? Will children, other family members or others take over? Will you sell?

Annex 3: Questionnaire to Small Farms (specific questions relevant for SFB)

Section 4: Market Relations.

37. Do you do some on-farm post-harvesting processing? If so, describe (Y/N)
38. How important is processing as a source of revenue? 1. Not important, 2. Somewhat important, 3. Very important.

Annex 4: Food System Regional Report (specific questions relevant for SFB)

5. Governance.

- a. Main interactions of small farms and SFB with governance structures in the region
- b. Levels of governance and their relative importance to small farms and SFB
- c. Constraints impairing full participation in the food System
- d. External policies, decisions and social norms affecting food systems
- e. Gender issues intersecting governance issues
- f. Other actors and processes important for the regional food System
- g. Forms of collaboration and organization between small farms
- h. Forms of collaboration and organization between small farms and consumers
- i. Relationship between small and large farms, and between small and large businesses
- j. Other governance issues

7. Role of Small Food Businesses.

- a. Main insights and patterns
- b. Labour in SFB work
- c. SFB income
- d. SFB households' coping mechanisms

Annex 5: Scope and reach of the data collection methods

Region	Key products	SFB	Key experts	Focus Group	Regional Workshop
Alentejo Central (PT)	wine grapes, olives, tomatoes, lamb	5	11	24	18
Oeste (PT)	pears, potatoes, wine grapes, chicken eggs	13	5	20	17
Lucca (IT)	vegetables, olive oil, fruits, wine	8	6	47	26
Pisa (IT)	vegetables, wheat, beef, wine grapes	12	6	61	21
Latgale (LV)	wheat, cow milk, potatoes, honey	11	10	16	17
Pieriga (LV)	wheat, cow milk, vegetables, apples	9	11	62	21
Hedmark (NO)	dairy, potatoes, berries, lamb	11	27	8	11
East Scotland, ESc (UK)	beef, lamb, mixed-horticulture, potatoes	9	7	12	16
West Scotland, WSc (UK)	chicken eggs, salad leaves, lamb, beef	7	7	10	10
<i>Sub-total participants</i>		<i>85</i>	<i>90</i>	<i>260</i>	<i>157</i>
<i>Total participants</i>		<i>592</i>			

Annex 6: Data analysis - SFB_Q19 and SFB_20

SFB_Q19: 'What are your raw materials?' (list and number of products)

SFB_Q20: 'Who supplies your raw materials?'

Simple method (Y/N): based on the number of SFB respondents
 Y– yes (direct connection with small farms, or zero intermediaries between SFB-small farms)
 N– no (indirect connection with small farms, or one or more intermediaries between SFB-small farms)

	Direct connection SFB-small farm	No	Yes	Grand Total
Alentejo Central	1	4	5	
ESc	9	0	9	
Hedmark	2	9	11	
Latgale	9	2	11	
Lucca	2	6	8	
Oeste	10	3	13	
Pieriga	8	1	9	
Pisa	7	5	12	
WSc	7	0	7	
<i>Grand Total</i>	<i>55</i>	<i>30</i>	<i>85</i>	
<i>Percentage (%)</i>	<i>65</i>	<i>35</i>	<i>100</i>	

2. Broader method: including all 143 responses

Raw material supplier to SFB	self	farm in region	local processor/ coop	retailer/ supermarket	farm outside region	wholesaler	Total suppliers
Alentejo Central	2	4	1	1	0	0	8
Esc	3	3	2	8	1	3	20
Hedmark	8	3	1	2	0	0	14
Latgale	7	5	2	3	0	5	22
Lucca	7	0	1	0	0	1	9
Oeste	0	7	7	4	0	3	21
Pieriga	6	4	2	6	0	3	21
Pisa	7	0	2	5	0	2	16
WSc	0	4	2	4	2	0	12
<i>Grand Total</i>	<i>40</i>	<i>30</i>	<i>20</i>	<i>33</i>	<i>3</i>	<i>17</i>	<i>143</i>
<i>Percentage (%)</i>	<i>28</i>	<i>21</i>	<i>14</i>	<i>23</i>	<i>2</i>	<i>12</i>	<i>100</i>

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