

# A territorial approach to social learning: Facilitating consumer knowledge of local food through participation in the guarantee process

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## Abstract

Recognition of the link between the origin of local food, farming practices and their territorial settings is important in increasing consumers' trust and perceived value of quality schemes. Using the concepts of social learning and Participatory Guarantee Systems (PGS), this study aims to strengthen consumers' knowledge regarding local food and its territorial anchoring, by associating product quality with territorial attributes while facilitating consumer participation in the guarantee process. First, a total of 199 online questionnaires assessing consumer preferences for local food showed limited awareness and knowledge of practices connecting products, production processes and quality attributes. Additionally, based on an existing PGS for a local cheese with (Thessaly, Greece), we combined consumer expectations and producers' guarantees through farm visits and a participatory focus group facilitated by interactive visualisation technology. Results showed that visualised knowledge of intangible and tangible territorial resources raised consumers' awareness and appreciation of specific quality attributes while helping co-construct shared meanings related to the place of production, local know-how and historical and cultural

practices. Thus, it appears that this approach further prepared the ground for consumers' future 'physical' or 'virtual' engagement in a bottom-up collaboration for the ongoing negotiation of trust and social control built on trust.

#### KEYWORDS

dairy cluster, local food, participatory guarantee systems, social learning, territorial food networks, territorial labelling

## INTRODUCTION

There is growing evidence that the dynamic of 'quality change of consumption' (Goodman, 2003) enhances more localised food distribution networks and small-scale production associated with the natural and cultural characteristics of the place of origin (Campagne & Pecqueur, 2014; Fonte, 2013; Renting et al., 2003). The link between farming systems and their territorial settings has emerged as a critical issue that reflects the unique relationship between product quality, place of origin and society. The so-called sociospatial anchoring of agricultural and food production has become a widespread concern that focuses on several quality attributes that interrelate place, 'terroir' and the presence of local know-how, traditions and various agro-food cultures (Barjolle, 2016; Damary et al., 2017) while resisting the homogenisation of food production systems (Colletis & Pecqueur, 2005; Goussios & Anthopoulou, 2016). In this context, the quality certification of agro-food products has gained importance within the European Union through the promotion of origin-linked products that are associated to a territory through cultural identity, heritage and production methods.

Despite the fact that an extensive range of labels that signal the product's origin and quality (e.g., Protected Designation of Origin – PDO, Protected Geographical Indication – PGI, etc.) have acquired particular importance to both consumers and producers, the quality recognition and safety of local products are not strictly guaranteed by existing certification schemes (Aprile et al., 2016; De Rosa, 2015). Producers that adopt such quality schemes have the chance to improve a product's image, reputation and competitiveness in the globalised market. However, the high costs, rigidity and bureaucracy of statutory/conventional certification procedures by third parties often create serious barriers and exclusions, especially for small family farms and producers in rural areas. From a consumer perspective, the perception of 'local food' and the relationship between food quality and local resources are not yet consolidated (Belletti et al., 2012). Although food quality labels seem to be important factors that should ensure the authenticity and special quality of local products, they do not always have a positive impact on consumers' interest, confidence or willingness to pay. One fundamental problem limiting the latter's quality perception is the inadequate level of knowledge in relation to their ability to identify and recognise the specific characteristics strongly linked to the geographical name (Di Vita et al., 2013). More importantly, little shared knowledge between producers and consumers on this specific territorial 'link', especially when it comes to production processes often creates mistrust in relationships. How could we better certify this quality by including consumer opinion and perspective on quality and

certification? How can we enhance the recognition of the territorial dimension of the information associated with the product?

Responding to certification and consumer awareness issues concerning the local food quality, innovative 'bottom-up' collaboration schemes known as Participatory Guarantee Systems (PGS), just like third-party certification (TPC), aim to provide a credible guarantee for consumers seeking organic produce, PGI or other local/quality food products. According to the official definition of IFOAM, a PGS is defined as a 'locally focused quality assurance system that certifies producers based on active participation of stakeholders and is built on a foundation of trust, social networks and knowledge exchange'.<sup>1</sup> PGS are mainly used to outweigh the high costs and overall insufficiencies<sup>2</sup> of the dominant regulatory mechanism of TPC (FAO, 2018; Kaufmann & Vogl, 2018; López Cifuentes et al., 2018; Nelson et al., 2015; Peeters, 2015). Instead of using an external certification body, the process focuses on involving citizens and relevant stakeholders in a territorial area (producer groups, consumer groups, associations and other local and territorial actors) in the decision-making process (FAO, 2018; Kirchner, 2017). The active participation of all peers enhances a common vision among members, reciprocity, transparency and confidence in the quality of local products (IFOAM, 2005; Paltrineri & Spillare, 2018; Weatherell et al., 2003) and can help to reduce mistrust through involvement, information sharing, and greater stakeholder participation (Sacchi & Caputo, 2015). This process can create environmental, social and economic benefits for local communities while enhancing trust, horizontality, shared vision and transparency (IFOAM, 2018; Kirchner, 2017; López Cifuentes et al., 2018; Padilla-Cuéllar & Ganuza-Fernandez, 2018; Paltrineri & Spillare, 2018; Sacchi & Caputo, 2015; Weatherell et al., 2003).

Focusing our attention on the consumer perspective on quality and certification, our approach aims at exploring how knowledge of the wider territorial context in which local farming systems are inscribed can be exchanged between farmers and consumers through a social learning process integrated in a PGS. In this way, we try to establish a better understanding of the relationship between perceived product quality and its territorial links with the place of origin and local market that could be built on trust and knowledge exchange while facilitating future consumer participation in the guarantee process.

The concept of 'social learning' is used as an educational concept (Hole et al., 2013) that characterises a learning process based on the collaboration of the 'producer community' and the 'consumer community' who are engaged in a dialogue in order to achieve a common understanding that helps reflection on the construction of meaning and identity. This dual interaction can be viewed as a community of practice for ongoing negotiation of trust (Wenger, 2010). 'Social learning can therefore contain four related elements: social interaction; knowledge sharing; knowledge creation and identity-building' (Li et al., 2009 in Hole et al., 2013). In this regard, we intend to portray the consumer's 'link' to the place of production and the authenticity and specificity of the geographical indication, and support a common vision of quality between consumers and producers by enhancing knowledge exchange, participation, reciprocity, transparency and trust concerning farming practices, growing conditions and cultural backgrounds. The core research questions (RQs) leading the empirical analysis of the case study explore: (1) how consumers perceive information about origin, local food-systems and certification (level of knowledge); (2) what kind of local knowledge pertaining to the links of the product to the territory, the guarantee process and quality recognition can connect farmers with consumers; and (3) how can these links be visualised through a participative pedagogical approach to social learning that intersects consumer opinion, local producer guarantees and scientific knowledge.

We focus on a new PGS set up among small agro-food businesses and farmers of the cheese-dairy sector in Thessaly (Greece) producing a PDO cheese. Given that this PGS did not take

consumers into account, we intended to improve and reinforce its effectiveness and legitimacy by encouraging consumer participation in the guarantee process while sharing knowledge of the local food system and its territory. The study consists of two parts. The first provides the theoretical background to the case study by highlighting the role of information and knowledge in local food and origin-linked products. It further analyses how PGS can serve as a knowledge platform and a social learning process by emphasising the role of consumers and their link to the territory. The second part explores the potential integration of consumers in the existing PGS and the general framework under which it can serve as a social learning tool and an educational platform.

The analysis uses a preliminary online survey to assess prior learning and experience connected to consumer perceptions and preferences for local food, and a participatory focus group to integrate consumers in the PGS while educating them on the quality features of the origin-linked product. This is attempted with a 'comprehensive' and interactive territorial learning tool that links the agro-food chain with its territory and explains the circumstances of production through visualisation of the territorial resource. Previous research is enriched with an updated theoretical framework and further reflection on the social learning process and territorial anchoring, by analysing the symbolic interaction between a local territory and its agro-pastoral production systems.

## **LINKING LOCAL FOOD WITH ITS TERRITORY: CONSUMER PERCEPTIONS AND UNDERSTANDINGS OF QUALITY AND THE ROLE OF KNOWLEDGE**

Although the term local food is generally regarded as familiar, consumers may understand 'local' in different ways (Roininen et al., 2005). Depending on the contexts, different perceptions of 'local' are based on proximity, quality, trust and support for local farming and employment while opposing globalised food systems and big supermarket chains. Proximity ranges from reduced physical distances to wider political boundaries, origin-labels, the emotional, social or ethical dimension such as personal relation with or within the region (Feldmann & Hamm, 2015, p.156; Aprile et al., 2016).

Apart from intrinsic factors (e.g., colour, texture, taste, freshness, nutritional value), perceived quality is also based on accessibility, availability and convenience, appearance, brand names, labels, production methods, raw materials and the local identity of small geographic areas (Arsil et al., 2014, p.583; Burnett et al., 2011; Penney & Prior, 2013; Weatherell et al., 2003), moderated by the demographic and socioeconomic context (Weatherell et al., 2003, p.234) and wider cultural factors (e.g. customs, traditions, consumer education). Local food is chiefly linked to a specific territory of origin that gives the product unique typical identity and quality features that are impossible to imitate due to the cultural, natural and socioeconomic identity of places (Letablier & Nicolas, 1994; Tregear et al., 2007). Localness is therefore an ambiguous term that contains physical, social and organisational features and values embedded in places, enhancing the link between consumers and producers through trust and reciprocity (Bouba-Olga et al., 2008; Grasseni et al., 2013; Paltrineri & Spillare, 2018; Renting et al., 2003; Torre & Filippi, 2005).

Ultimately, a territorial approach to food production contains the tangible and intangible resources of a given territory, and is based on relational interlinkages that develop between actors involved in development processes and local government and the values they co-create. Local or regional food systems are therefore part of a wider values-based territorial food network which is 'constructed' based on a system of local actors and end-users (consumers), and is founded

on the principle of specification of various territorial assets of an economic, cultural, social and environmental nature (Colletis & Pecqueur, 2005; Gumuchian & Pecqueur, 2007; Pecqueur, 2007).

Raising consumer awareness and appreciation of regional and local food was progressively enforced by the promotion of origin-linked products that are anchored to a territory through cultural identity and heritage (e.g., PGI, PDO often related to traditions or a 'terroir' that confers 'typicity', etc.; Vandecandelaere et al., 2010; Barjolle & Vandecandelaere, 2012; Vandecandelaere et al., 2018). The link to origin is based on a territorial identity and reputation, and/or specific modes of production (traditional methods and knowhow) whose quality, reputation or any other characteristics are attributable essentially to their geographical origin (UNIDO, 2017).

Though geographical indications generally have positive connotations for consumers (Slade et al., 2019) revealing the origin and the quality of products (WIPO, 2017), quality recognition mostly depends on the information provided to consumers (Slade et al., 2019). One of the main difficulties that consumers face is identifying local products linked to a guarantee that also addresses their various expectations and worries (Brown, 2003; Feldmann & Hamm, 2015). The increased uncertainty in the definition criteria of what is 'local' and the confusion with organic or geographical denominations, as well as the absence of a comparable system of regulation and certification with which consumers can engage, imply a lack of consumer knowledge and awareness in perceiving the socioeconomic benefits in 'buying local', of understanding of the food supply chain and of trust in existing certification schemes (Weatherell et al., 2003, p.234). This ambiguity reveals the need to encourage knowledge about territorial attributes that consumers identify as characteristic of locality, uniqueness and the typicity guaranteeing the quality while empowering niche markets and territorialised agro-food systems (Fonte, 2013; Dansero & Puttilli, 2013; Padilla-Cuéllar & Ganuza-Fernandez, 2018).

Studies on the relationship between the level of consumers' knowledge and attitudes show 'that those who think a lot about their food choices develop stronger attitudes, and thereby get more interested and search for more information on their food' (Feldmann & Hamm, 2015, p.159). Such consumers, being more aware of the socioeconomic and ecological issues related to food and farming, have a better understanding of the interconnectedness between the product, its origin and the related production methods (Weatherell et al., 2003, p.234). This also explains why trust in certifications is stronger when it is combined with education (Onozaka et al., 2010). In general, consumers' knowledge of the advantages of local food production methods is opposed to conventional/regular products while it reinforces consumption attitudes towards more local and sustainable food production and increases willingness to pay (Brown, 2003, p.218, Feldmann & Hamm, 2015, p.156).

## **COLLECTIVE DIMENSION OF A PGS: SOCIAL LEARNING THROUGH CONSUMER EDUCATION AND PARTICIPATION IN THE QUALITY CERTIFICATION OF LOCAL PRODUCTS**

The aforementioned ambiguities and consumers' general lack of knowledge of the local food supply chain and on the existing certification schemes of origin-linked products raises the following questions: (How) can knowledge, transparency and confidence raise consumer awareness of the local food supply chain and/or specific origin-linked products? What is the role of social learning? Can it be facilitated through a participatory approach to quality certification that includes farmers and consumers?

We take the case of PGS as an example for studying how a participatory certification process involving consumers and producers can facilitate consumer awareness of food quality through a social learning approach. Such systems are, by their nature, collective and require the ‘active participation and engagement of consumers in shared and participatory control of product quality’ (Paltrineri & Spillare, 2018, p.147; Weatherell et al., 2003). Consumers can therefore be at the heart of the certification process, playing a leading role in the joint assessment of producers, production control and the recognition of product quality (Fondation Nicolas Hulot, 2015; Sacchi & Caputo, 2015; Kaufmann and Vogl, 2018). The main characteristics of PGS can be summarised as follows (IFOAM, 2018, 2019):

- adaptation to local ecosystems, the regional situation and support for the local economy;
- fighting homogenisation and standardisation;
- creating links between peers;
- supporting producer groups and encouraging co-operation with a view to improving agricultural practices through the exchange of knowledge and experience between actors in the region, from producers to consumers;
- strengthening links between producers and consumers and increasing incentives for producers to develop their production;
- participation, responsibility and organisation;
- learning and knowledge transfer among farmers, consultants and consumers;
- accessibility: fewer administrative tasks, lower costs;
- trust, transparency and equality of responsibility.

Knowledge sharing through social learning can be a valuable aspect in developing a PGS, as such an approach is based on the ideas of consumer participation and education as leading principles in the process of guaranteeing the quality of a local product, challenging new behaviours and practices (McGregor, 2009). Furthermore, understanding it draws from a very broad range of theories of communicative and transformative learning (Muro and Jeffrey, 2008).

According to the traditional approaches of Milbrath (1989) and Habermas (1987), learning is a communicative action through negotiation, deliberation, co-operation and agreement leading to a consensus, while Bandura (1986) focused on cognitive learning through imitation. Muro and Jeffrey (2008) emphasise the dynamic interaction and communication in participatory processes that create communities of shared knowledge, experiences, ideas and values, thus a common social reality between people and the environment. Reed et al. (2010) argue that a process of ‘social learning’ occurs through social interactions and processes between actors within a social network and must demonstrate a wider change in understanding that influences broader social units or communities of practice (Wenger, 2010). Therefore, the concept of social learning refers to learning processes among a group of people who is engaged in a dialogue to better understand different points of view and develop processes for collective action and reflection in the construction of meaning and identity over time.

Consumer participation and education can really be important elements of social learning (Van Koppen, 2017) by changing complex behaviours through learning while empowering those who are more likely to engage in sustainable consumption (McGregor, 2009). Given that consumerism influences social learning, it is essential to analyse the criteria which consumers use to choose their products (Van Koppen, 2017), and how they can be influenced by the sharing of collective knowledge and resources through social learning (Leta et al., 2018, p.5). As specific quality criteria of local food are recognised by consumers, this can lead to the creation of value – economic,

social, environmental and cultural – that is spread along the value chain among producers, processors, middlemen, retailers and other local stakeholders, in particular the tourist sector or the local population (Barjolle, 2016).

In our study, consumers, producers and researchers are seen as co-operating communities that can potentially enable social learning processes through a PGS as a basis for a common understanding of the complexity of a given local production system and co-creation of knowledge (Padilla-Cuéllar & Ganuza-Fernandez, 2018, p.5). Such knowledge can be co-constructed by all actors, developing capacities in their effort to elaborate and verify the principles and rules that will certify the quality of the products. For this reason, a PGS should provide comprehensive and accurate information that guarantees the origin and quality of the production or manufacturing methods through a permanent process of learning (IFOAM, 2018, 2019).

To conclude, this collective learning process can facilitate a widely shared understanding of a given territorial food system (Kopainsky & Nyanga, 2017), re-embed knowledge of local food into consumers' imaginaries and valorise traditional artisanal knowledge (Fonte, 2013). Learning through participation in the guarantee process creates a dynamic interactive exchange community that combines farmers' local knowledge and the needs/expectations of consumers through social interaction, mutual learning and transparency. In this way, a PGS could potentially reshape wider actor networks within the territorial dimension of a cluster through consultation, negotiation, co-operation and mutual agreement regarding territorial issues and sustainable rural development (such as resource management, local practices, supply chains, etc.) (Sutriadi et al., 2017; Coudel et al., 2017).

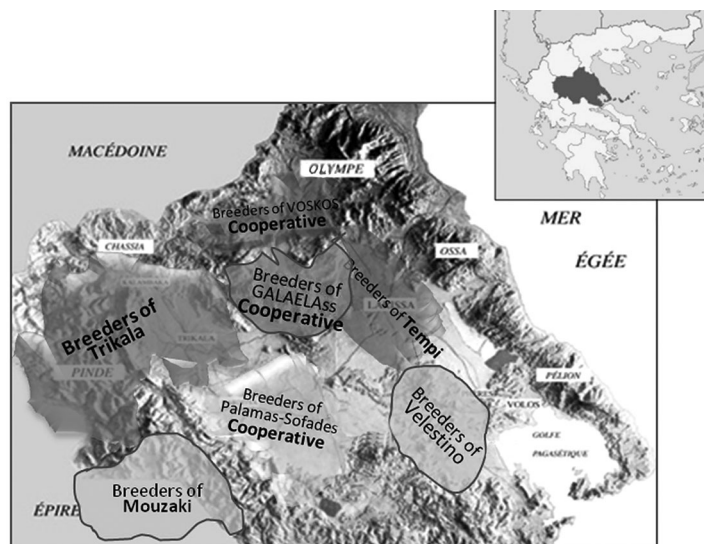
## CASE STUDY SELECTION AND RESEARCH METHOD

### The PGS of '*Terra Thessalia*': a participatory example of an innovative dairy cluster

This study focuses on the dairy cluster of *Terra Thessalia*<sup>3</sup> which is based on a multistakeholder network spread over seven small territories of Thessaly<sup>4</sup> in Greece (see Figure 1). These territories have a strong pastoral gastronomic tradition giving prominence to dairy products with a significant competitiveness in livestock (number of farms, local animal breeds, dairy production) and several distribution networks established at different market levels, including short circuits (Goussios et al., 2014). Among a variety of local traditional dairy products from this cluster (cheeses, yoghurts and desserts) that are made from goat and sheep's milk, our study selected the iconic PDO *feta* cheese under the brand of *Terra Thessalia*. This cheese is characterised by a strong, Greek and Mediterranean image with local, regional and national market loyalty for *feta*.

The main objectives of the cluster are to guarantee to consumers, through a PGS, the origin-linked quality and authenticity of products deeply rooted in the territory by revealing and fostering the specific characteristics of the dairy resource. This PGS was the result of a participatory process based on a broad co-operation structure among specific local producers, value chain actors and research centres<sup>5</sup> that aimed at enforcing existing certification and traceability of the dairy products (linking the production of sheep-goat milk with the territory). At present, *Terra Thessalia*'s small cheese makers and livestock farmers that participate in the PGS have set up criteria that guarantee their quality claims and product ties with the production place (animal welfare and milk quality, proximity of raw materials, feeds and cheese production units, indigenous breeds, milk collection and maturation period).

**FIGURE 1** The case study of seven dairy territories in Thessaly, Greece



## Methods used

Our approach intended to relate, as Lacquement and Chevalier (2016) propose, the territorial capital (the cluster of *Terra Thessalia*) to the tangible and intangible resources of the territorial area (the dairy resource) and local government (via the integration of consumers). Based on a social learning approach between producers and consumers to sharing and ‘co-producing’ knowledge (Treakle & Krell, 2014, p.23), we combined quantitative and qualitative as well as social research and participatory tools (an online consumer survey, a participatory workshop and visualisation technology) that intend to increase the level of knowledge, dialogue and mutual trust.

The proposed method consisted of a two-fold analysis that mainly aimed at:

- (a) Exploring consumer perceptions and knowledge on origin, local food and the certification of dairy products (RQ1).

In the first phase, we conducted an online preliminary consumer survey on local food preferences using mainly closed-ended and few open-ended questions.<sup>6</sup> Our methodological approach involved a two-stage non-probability sampling for the collection of data that consisted of ‘conscious’ and ‘non conscious’ consumers<sup>7</sup> located both in proximity to Thessaly and further afield.<sup>8</sup>

The purpose of this preliminary questionnaire was not to have a statistically accurate survey but to capture different perspectives and narratives of ‘local food’ and understand how consumers perceive information about origin, local food-systems and certification as well as explore their future role in the PGS. It goes without saying that this methodological approach gave us some insights concerning the level of consumers’ knowledge. However, the sample was not representative of the population and bias of self-selection could not be eliminated, so we cannot produce generalisable results; which was not our goal on the first place. This stage helped us analyse and interpret a set of responses that structure and design the discussion topics in the second participatory phase of the research.



- (b) Integrating consumer opinion into the existing PGS through the creation of a pilot social learning platform (RQ2 and 3).

In the second phase, based on the results of the preliminary survey, we further explored consumers' opinion on visualisation of quality assurance issues by better explaining the links between a specific *feta* cheese product, its existing guarantees and territory. Selected 'conscious' consumers that represented nine consumer groups and co-operatives<sup>9</sup> that also participated in the preliminary survey, were brought to Mouzaki, one of the areas of the regional cluster of *Terra Thessalia*, and took part in field visits to local dairy farmers and cheese makers as well as in a one-day participatory workshop with a mixed focus group.<sup>10</sup> In order to facilitate territorial learning, we developed a pilot interactive digital web-based platform that maps the main local resources required in the production of *feta*, by identifying the connection of material and immaterial elements of the resource with the production process and local actors. This served as a participatory learning tool that visualised the existing guarantees proposed by local producers and intersected them with consumer opinion and scientific knowledge. It helped consumers understand the links between the product and the territory by specifying various territorial assets of an economic, cultural, social and environmental nature that are connected to the specific local cheese (Colletis & Pecqueur, 2005; Gumuchian & Pecqueur, 2007; Pecqueur, 2007). At the same time, it actively involved them in the guarantee process of the existing PGS by integrating their opinion concerning the range of information consumers seek on visualisation linking product to place.

Despite in-person attendance limitations,<sup>11</sup> focus group data analysis (based on detailed notes, concept schemas and audio recordings) helped to co-construct shared meanings about the visualisation of the product guarantees and to re-reflect on the development of the platform that is intended to serve as a future governance model of the PGS features to be guaranteed through co-operation and feedback between consumers and farmers.

## **CONSUMERS' PREFERENCES FOR LOCALLY PRODUCED FOOD AND KNOWLEDGE OF PDO LABEL GUARANTEES FOR FETA CHEESE**

With respect to the first RQ, this chapter discusses the results of the quantitative online survey shedding light on consumers' complex definitions, behaviours and motives to buy local food and their level of knowledge regarding labelling and local production methods so as to enhance information and education (Källander, 2008). The following subheadings summarise the main findings.

### **What is local? Ambiguity in the definition and attributes of local products and scaling**

Most of the people who answered the questionnaire have a positive perception of local food which is formed through non-targeted and general information. In this context, it is interesting to point out that when consumers think about 'local' they are relating it to a shift towards Mediterranean diet products (e.g., pulses) and dairy products. At the same time, there is an idealistic picture of

the quality and authenticity of small producers, which is not necessarily based on corresponding elements and existing guarantees.

Consistent with the literature, present results have demonstrated several ambiguous definitions of locality and proximity,<sup>12</sup> even when we deal with more 'conscious' and sensitised consumers. According to the 'non conscious' consumer from our sample, the taste and organoleptic characteristics seem the most important criteria for buying local food. To the majority of people, 'local' indicates the ability to get seasonal, freshly picked, nutritious food that tastes better, is healthier and is produced by small farms. While the great majority thinks that eating locally implies short transport distances, there is a more multifaceted concept of place. Only a ¼ of the respondents spontaneously relates local food with the place of production and the physical proximity to the consumer (26%). Locality is therefore connected with a preference for buying locally produced food, while at the same time, people are interested in knowing how food is produced, how it affects health, the economy and the environment. A substantial percentage (37%) associates local food with organic production, thus erroneously believing it to be of higher quality. Consumers who regularly buy local food in organic markets (25%) are most likely to have higher education, income over 10,000 euros and an urban residence. The majority of them (93%) would buy local products because they are interested in tradition, which represents some loyalty to location. Another important aspect is its cultural importance and identity, because people usually buy local food or items under a PDO label when they visit a place in order to familiarise themselves with special flavours and the gastronomy connected with the local history and tradition (77%).

The following is an itemised list of the most common thoughts expressed spontaneously, containing diverse reasoning and meanings, in descending order of the number of respondents who mentioned them:

- *Place/location of production*: includes proximity to where they live (up to 300 km), concerns a certain place of production, a belief that all stages of the production process must take place in the defined geographical area, is associated with the village, the countryside, confusing all scales: regional/national/Greek product, linked with the image of the typical products (*feta*, other cheeses, pulses, etc.) and quality associated with geographical origin (e.g., *feta Kalavryton*, *ladotyri Mytilinis* PDO, *fava Santorinis*, etc.).
- *Quality*: is related to freshness/taste/nutritional content, health, good taste, good and locally sourced raw materials, knowledge, low production volume, products that have been produced with less processing.
- *Tradition*: local traditional production methods and authenticity, PDO and local identity, local gastronomy, history.
- *Small scale of the farms*: small co-ops, trust-based relations
- *Support of local economies*: elimination of intermediaries, market integration
- *Environmental footprint*: reducing carbon footprint

There is a high acceptance of all these characteristics (apart from appearance and relationship with the environment) ranging between 70 and 80% of respondents.

To summarise, knowledge and acceptance of attributes associated with local food can be divided into two categories, in accordance with previous research<sup>13</sup>:

- a. intrinsic 'ingredients' of the inherent quality of the product (fresh and seasonal, healthy with nutritional value, flavour-perfume, organic);

- b. the relationship with the place and heritage that affects both the production of the final product and the surrounding physical and social space (production with local traditional methods, environmentally friendly, better appearance, cultivated at close distances, manually, not industrial).

### **Lack of consumer knowledge of labelling and production methods: information, convenience and guarantees**

Our study did not find that age, income or education directly influenced mistrust for local produce. However, 64% of respondents that do not buy local products at all also claim that they have no knowledge of labelling and production methods. Of these: 24% have an income of less than 10,000 euros, 53% are over 40 years old, 40% are men while 21% have no university education.

Consumers usually perceive labels as an information umbrella for a variety of ingredients and production practices. However, 25% of respondents admit that they do not trust labels while 28% are indifferent. This means that there are no strong guarantees covering the 'gap' between production and the consumers who are not fully convinced that they make safe and healthy choices. The logo or labels only cover a part of the production links. This has an impact on the lack of confidence concerning small producers as well as the existing certifications or a lack of labelling on production methods. Nevertheless, a great majority of respondents (95%) trust local food because they trust small farming methods regardless of labels or any other guarantee scheme. However, the majority of those that do not buy local products because they mistrust small producers is more likely to search additional information on labels even for PDO products. This indicates a strong need for communicating information to the consumer about certification requirements in an organised and integrated way through a reliable route.

These perceptions also influence the price/quality relation that is questioned: consumers seem to need more specific information on the local food chain in terms of health, taste and indirect contribution to local society, the economy and the environment in order to be convinced to pay a higher price. Despite this inconvenience, only 18% choose local food based on low price while a very high percentage of respondents accept the value of the relationship with the place of production (85%). This probably shows that there is a need to increase transparency and consumer confidence in a way that empowers the consumer as an active receiver of the communicated message (education, understanding, etc.).

### **Market access for local foods: a gap between producers and end users**

The territorial dimension of local food markets is mainly determined by questions of access. Overall, trust it is not exclusively connected to a rural/small-town residence. 46% (92) of respondents claim to buy local products directly from the farmer, of which 63% live in Athens and Thessaloniki.<sup>14</sup> This may be explained by the presence of farmers' markets and represent some loyalty to location or farmer that influences product choice.

Nevertheless, 30% of the sample agrees that local food is not easily accessible and a further 37% does not negate this claim. Consumers rarely buy cheese directly from small dairy units and are very often directed to large industrial labels. This is explained by the fact that production is limited to small and very small businesses, with limited promotion and sales networks and partnerships (territorial marketing). Thus, smallholder dairy farmers are somehow disconnected from small 'niche' markets and direct sales networks, especially in big urban centres.

## Labelling and guarantee issues for PDO feta cheese: contrasting information, quality and trust

Although 54% of respondents pay attention to the label information it seems that information is still not sufficient. Regarding quality signals, almost 40% of the sample needs additional information explicitly noted on the packaging even when buying a PDO *feta*. Quality expectations are highly related to clear indications about antibiotic-free milk, local production, traditional production methods, locally produced animal feed, the use of fresh milk (within a few days), and all stages of production being in the local area. Moreover, information posters, or phrases such as ‘free range’ and ‘certified organic’ are considered as particularly credible. The research shows that there are different levels of importance that consumers attach to different labelling schemes available in the food and *feta*-cheese market. The results indicate that consumers clearly value labelling schemes and certification by third parties while information labels and certification logos are regarded as reliable. However, true images and posters/leaflets that are increasingly being used by mainstream commercial brands highlighting depictions of mountain pastures, pastoral livestock and traditional cheese-making techniques are valued to a lesser extent or are considered unreliable.

When investigating consumers’ knowledge of food labels and how this knowledge guides their decisions, recognition of the PDO is limited and there is confusion about the meaning and content of these symbols and certifications. Very few answered correctly when asked to explain what the criteria differentiating *feta* from other types of white cheese are. Consistent with the literature, this further supports the earlier findings of Di Vita et al. (2013) and Weatherell et al. (2003) concerning the lack of consumer knowledge linked to the geographical name. It also reflects the insufficiency of quality labels in validating the existing guarantees and broadly supports the importance of education in establishing trust in certification (Onozaka et al., 2010; Slade et al., 2019).

When asked to prioritise six given criteria that may have an impact on their choice of *feta*, ‘production by small family farms’ was ranked first among the most important criteria mentioned (47 responses), ‘area/place of production’ had a higher relative importance as the second most important (69) and the existence of ‘label – PDO’ as the third most important (40).

In terms of certification process, the study corroborates the idea that more transparency and trust could be achieved through involvement, information sharing, and greater stakeholder participation (Sacchi & Caputo, 2015). Thus, a PGS might have a direct positive impact on consumers’ food choices and is a way to gain trust, only on the precondition that both producers and local stakeholders and consumers (consumer co-ops, local organisations, citizens, etc.) could take part in the certification process. If we take the example of a *feta* cheese product non-certified by third parties, 63% of respondents would trust a PGS that includes consumers, compared with 30% if it was only guaranteed by producers. The potential participation of consumers would mainly include, in descending order, visits to farms and small dairy units in order to familiarise themselves with the production methods, consumer co-ops, and direct involvement in the decision-making process and the co-formulation of the certification criteria.

To conclude, this preliminary analysis identified an increased ambiguity in the definition and attributes of local food which is related to a lack of consumer knowledge of the food territory and ineffective labelling on production methods that creates concerns regarding quality, trust, labelling and guarantees. Therefore, a better knowledge of the features of the local agro-pastoral chain and their links with the product and its quality guarantees and related labelling information would help reinforce the existing certification scheme and re-establish trust.

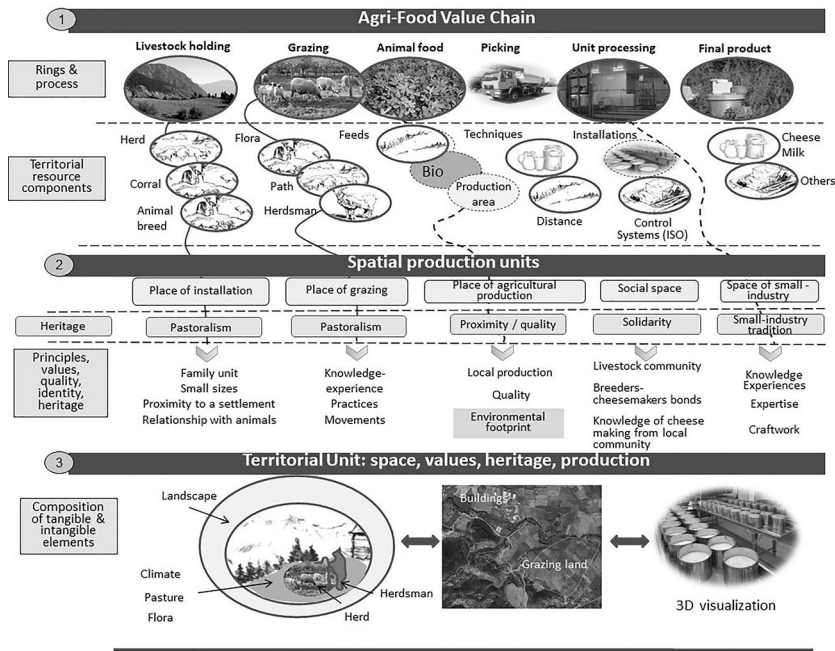


FIGURE 2 Linking the agro-food chain with the territory. Source: Authors

## Social learning through an interactive web-based platform: reorienting consumer education through visualisation of the territorial resource

This section describes the results of the participatory social learning process that took place during the focus group by intersecting consumer opinion, existing local producer guarantees and scientific knowledge. Given the gap in information shared between producers and end-users, we tried to enable a more comprehensive learning environment by interacting through a web-based learning tool that would facilitate consumer understanding of the link between the local PDO cheese and its territory while helping us consider consumer preferences when choosing appropriate methods for the visualisation of guarantees.

More specifically, during the participatory process our interaction with consumers followed three steps:

(1) *Rediscovering features of the territory linked with the local PDO cheese and the PGS.* We first aimed to explore territorial resources of the local agro-pastoral chain that are connected to the specific PDO product and their influence on the proposed PGS by using an interpretation scheme that we produced as a basis for guiding the dialogue. This scheme explained the links between tangible and intangible features of the local agro-food supply chain and the PDO cheese and its guarantees, and how these are embedded within ‘Spatial Production Units’ (place-based production – ‘anchorage’) creating a ‘Territorial Unit’ based on production, spaces, values and heritage (Figure 2):

- *Agro-food value chain:* It consists of rings and processes which are influenced by territorial resource components that add value to the final product (e.g., *feta* cheese). In particular, ‘livestock holding’ is a territorial resource of the agro-food value chain which consists

of 'herd', 'corral', 'animal breed' and 'place of installation'. The 'grazing' unit consists of 'flora', 'path', 'herdsman' and 'grazing area'. 'Animal food' consists of 'feeds' and 'place of agricultural production' and so on.

- *Spatial production units*: Every part of the value chain is projected onto a series of spaces and places that engender certain principles, values, identity and heritage (e.g., pasture lands contain traditional knowledge and the practice of grazing land economy and a local know-how in animal husbandry). They include all phases of the activation of tangible and intangible elements of the local resources and the production of the final product. Intangible elements are related to quality and identity and they fit the categories 'heritage', 'pastoralism', 'proximity', 'quality', 'solidarity' and 'Small-industry tradition' (Authors' reference 4).
- *Territorial unit*: It depicts how territorial resource components are associated with tangible (landscape, water, buildings, paths, etc.) and intangible (heritage, sustainability, prosperity, historical event, etc.) elements that characterise and enhance them. Going beyond simple spatial representations of pastoral activities, the discussion revealed that various values and qualities that guarantee the quality of the final product result from the combination of territorial resources based on a local network of actors. This network reflects the role that different actors play in the appropriation of these resources and their capacity to use their traditional skills and knowledge to promote new territorial marketing techniques.

The main result of this interaction combined previous knowledge on tangible intangible territorial assets<sup>15</sup> in order to give a widely shared understanding of a given territorial food system (Kopainsky & Nyanga, 2017). It further linked consumer perceptions of quality and expected benefits with existing producer-run guarantees of *Terra Thessalia* (production method, maturation, milk, breeds, etc.), as a way to integrate their opinion into the existing PGS (Figure 3). For example, questions on how to guarantee animal welfare and feeding quality inquired on specific (direct/indirect) effects have been raised as important issues affecting the overall quality of the product, consumer's health, ecosystem management and territorial identity.

- (2) *Educating consumers through the visualisation of territorial resources*. Discussions were complemented by the use of visualisation tools as a way to consult consumers, share information and get their feedback on developing guarantee instruments. We developed a pilot interactive web-based platform<sup>16</sup> for the *Terra Thessalia feta* cheese that simulated full, and in some cases, dynamic, digital spatial representations of all linkages of the PDO product with the place of origin (see Figure 4). We attempted (Kouzeleas et al., 2020): (a) to visualise the spatial anchorage of material and immaterial components and the relation of the local product to the specific territory, as well as (b) the quality and identity characteristics of the territorial resource, and their relation to the final product, and (c) to integrate consumer opinion regarding the importance and effectiveness of the existing guarantees and the possible methods of their visualisation through interactive consumer participation in a digital online combinatorial platform. A mix of visualisation tools (2D maps, aerial photos and elevated views of the territory and 3D 360° images and spatial representations of the dairy resources (artisan cheese companies, traditional cheese-making practices, natural landscapes, nearby villages), existing formal certifications – HACCP, PDO, etc.<sup>17</sup>) were used for spatial orientation and understanding of the territorial context and the sociocultural dimension of farming processes. In this way, consumers had the chance to agree on a common perception of the links between prod-

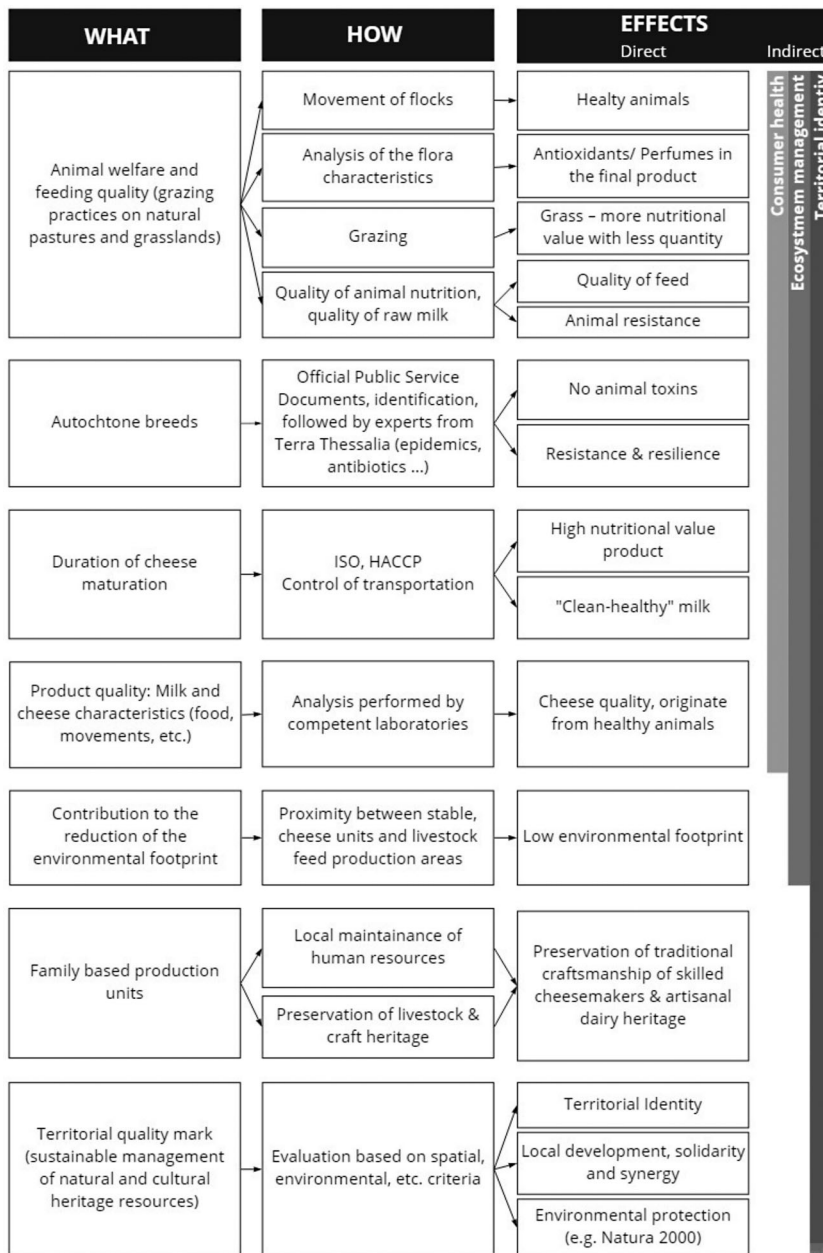


FIGURE 3 Linking guarantees with quality and expected effects. *Source:* Authors

uct, resource and territory (natural diversity, traditions, culture and relationships with nature) that are linked with specific guarantee procedures via a territorial approach (Treakle & Krell, 2014).

The findings suggest that there is no 'all-in-one' visualisation method. The perceived credibility of the visualisation tools is improved with additional information about the territorial context. The more participants know about the territorial resources connected to the product,

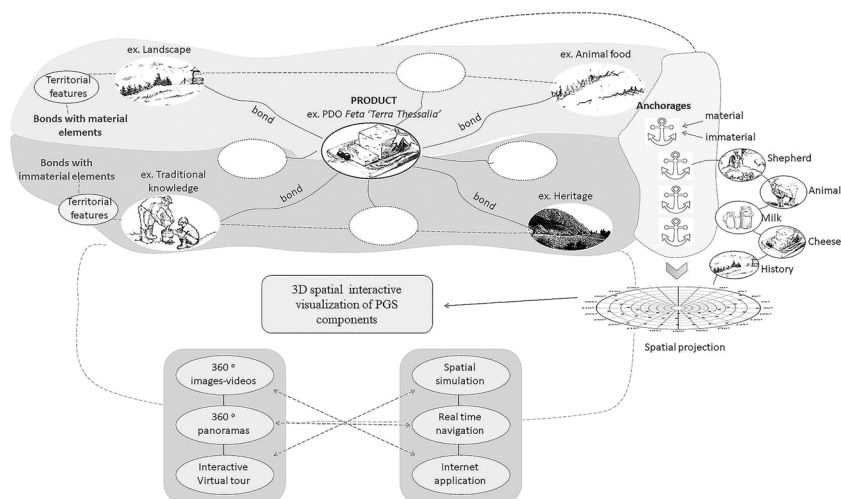


FIGURE 4 Conception of a 3D spatial representation of PGS features. Source: Authors

the better they can judge how well the visualisation represents the product's guarantees in a reliable way and make informed purchasing decisions. This was substantiated by the finding that consumers considered detailed or realistic images and 3D views (or even possible future videos of producers talking, showing their animals, stables, etc.) more credible than 'idealised' folklore images of pastoral life or official certifications and quality seals. Social learning is therefore enhanced through a territorial learning process facilitated through a 3D virtual tour of the area's agro-pastoral production systems (visualisation of local knowledge) and the incorporation of the consumer forum tool. The tool's technical operating framework permitted and enhanced the active participation of consumers so as to help them evaluate the existing guarantees.

- (3) *Identifying the priorities for broader future consumer integration in the guarantee process.* Given that a PGS is based on direct personal relationships, trust and transparency, consumers suggested establishing direct active participation in addition to the online forum, that will function as an open community in this learning process mainly through: (a) visits to learn about sustainable traditional agricultural practices of the farmers and cheese makers that preserve a close connection with the territory, or during important events (opening of a barrel aged *feta*, or during the process of traditional cheese making, local food festivals, or during specific grazing periods, e.g., spring pastures) and, (b) creating a joint committee with interested consumer representatives that will be regularly informed about how internal and external processes (i.e., where animal feed is purchased from or how production is being managed) ensure specific guarantees. They would also like to have the chance to be invited to annual meetings to exchange views and complaints about quality control or the production process as well as to visit new farmers or cheese makers that would like to participate in the cluster. These actions are regarded as opportunities for the improvement of their role in the certification, therefore reaching common understandings and mutual trust with producers. However, social distancing due to the recent pandemic restrictions had a negative effect on the outcome of the workshop by temporarily cancelling all participatory approaches that would



involve rural field visits or further engagement/agreements to build trust and co-produce knowledge.

## CONCLUSION

This study demonstrates how a participatory approach can indeed be an appropriate and useful tool in a social learning process by integrating consumers in the certification of a local product while ensuring reciprocal benefits. Consumers were considered important social actors included both in the design and feedback of the PGS, contributing and facilitating a bottom-up quality optimisation process through participatory deliberation. Participation contributed to the re-conceptualisation of the features of a territorial (pastoral-dairy) resource and their influence on consumer opinion concerning the quality guarantee of a specific local cheese, and helped us select the appropriate visualisation tools and participatory methods. Territorial knowledge associated with the local product was used as a lens for guaranteeing quality recognition and connecting farmers with consumers.

Returning to our RQs, limited recognition of PDO labels or product links with the territory encouraged the need for additional, more reliable quality criteria and confirmed the importance of education in establishing consumer trust in certification. Interpreting linkages among various tangible and intangible features of the territorial resource integrated in the product and the PGS had a positive learning effect on consumer perceptions regarding quality. Thus, recognition of origin-linked quality and authenticity was reinforced by the ability to connect the dairy product with the cultural heritage and value of the production region while it increased awareness of the guarantee scheme and its benefits.

A significant experience that appeared to be helpful in the process of social learning was the visualisation of the particular territorial setting of the specific dairy product that made more understandable to consumers the complex material and immaterial relations between local resources and actors. This accords with our earlier observations, which showed that learning from a digital platform enriched with interactive 3D-views and other types of product guarantees (e.g., PDO, ISO) can help consumers explore, better understand and evaluate detailed information on the dairy production value chain (Kouzeleas et al., 2020). Nevertheless, further reflection on the social learning process and territorial anchoring provided a new understanding of sharing and co-producing knowledge through participation. This process simulated their indirect involvement in guarantee procedures while helping us to identify their potential future expectations and collaborative aspects, their notion of participatory governance and how they see themselves in this guarantee process. Accordingly, this increased credibility and accuracy of the information provided by the PGS.

However, these findings may be somewhat limited by possible participant bias because of the small sample and producers' absence during the workshop. Contrary to expectations, additional limitations because of the recent pandemic further disrupted the social learning process, an effective follow-up and the collaborative nature of our participatory approach. Therefore, our mediation was restricted on exploring consumer quality perceptions on existing producers' guarantees while educating them about how territorial resources are linked to the genuine qualities of the specific feta cheese production process. Notwithstanding these limitations, it could be argued that farm and on-site visits were proved vital in shaping important relationships and further motivated consumers to acquire new knowledge through a more active learning process which developed a sense of inclusion and awareness. In this way consumers identified the main gaps to

be filled and felt that they can share responsibilities and co-establish rules or standards through collective reflection that allows reciprocity, transparency and trustworthiness in decision-making. It can thus be suggested that an effective PGS in which the participants share a sense of actually 'having been heard' during any consultation process is more likely to be truly embedded in participatory processes.

Overall, the current findings are significant in the whole participatory process as an exploratory interaction for raising awareness, knowledge sharing and knowledge creation which intended to lay the groundwork for a more complete social learning process in the future. This digital visualisation tool can be a starting basis for a better integration of a wider consumer community in the PGS by facilitating direct and ongoing negotiation of trust, social control, through which consumers could learn and scrutinise the production process (e.g., via the online forum of the web-based social learning platform and field visits).

Despite these promising results, future challenges are associated with a remote context and difficulties of distanced-based participatory approaches as well as with a future enlargement of collective (multistakeholder) co-ordination of the PGS. Further work is required to ensure continuous participation, engagement, active involvement and interaction of producers, consumers and other stakeholders in order to develop and maintain a community of practice in territorial resource-building processes. This requires increased management ability to co-create, reproduce and develop territorial resources through the advancement of new technologies and collaborative processes that foster relational interlinkages between actors. Additional studies should also be undertaken to establish the viability of the assessment of both the farmer's reliability and consumer education process.

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## AUTHOR CONTRIBUTION

The authors' contributions were as follows. S. N. conceived and designed the research and wrote the manuscript. S. K. created the visual tool, performed the statistical analysis and helped for the production of maps and diagrams. D. G. co-ordinated the research and helped to design and edit the manuscript. All authors have read and approved the final manuscript.

## CONFLICT OF INTEREST

None of the authors had a conflict of interest.

## DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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## ENDNOTES

<sup>1</sup>Participatory Guarantee Systems (PGS), <https://www.ifoam.bio/our-work/how/standards-certification/participatory-guarantee-systems>

<sup>2</sup>High purchase costs for the producer, reduced accessibility, lack of adaptation to the local specificities of production, risk of standardisation and homogenisation of production systems, lack of a support framework for producers, intense bureaucracy, ethical issues) (Källander 2008, Stave 2010, Nelson et al. 2015, Kaufman and Vogl 2017, Kirchner 2017, Kouzeleas et al. 2020).

<sup>3</sup>The dairy cluster was developed in 2018 in the context of the European program 'Lactimed' (2015–2017) within the framework of the I EVP CT MED European portal. It was co-ordinated by the University of Thessaly (department of Urban Planning engineering – Rural space laboratory) and the Union of Chambers of Commerce and Industries of Greece (Goussios et al. 2014, Goussios and Anthopoulou 2016).

<sup>4</sup>Areas of Velestino, Elassona, Kalampaka, Mouzaki, Palamas and Tempi in Thessaly.

<sup>5</sup>The PGS of *Terra Thessalia* was based on a broad co-operation structure that consists of four universities and 12 research centres, the Association of Thessalian Enterprises, seven cheese makers & related farms (400 herds for milk production) representing a potential production of 4 tons of *feta* per year, four breeder co-operatives, three local Development Agencies, one entrepreneurship Institute, two co-operative banks, three professional support organisations and 15 municipalities (<http://www.ter Rathessalia.gr/?LANG=en>).

<sup>6</sup>The preliminary survey was conducted between March and July 2019. The questions were divided into three thematic areas. The first section referred to consumers' local food preferences and distribution channels, investigating their motivation to buy local food and ways in which local foods are conceptualised as authentic or traditional and so on. The second section referred to the quality of local food while focusing on PDO *feta* and on issues of indication and guarantee systems. The aim was to reveal the level of awareness and satisfaction concerning the guarantees of the PDO-*feta* labelling system, the meaning of PGS and consumer willingness to participate in a PGS for *feta*. The third section included personal information and socio-demographic factors and their impact on purchasing habits and local food narratives (e.g., gender, age, education, residential area, familial status, professional status, income, rural/urban areas, etc.).

<sup>7</sup>(a) First, we opted for 'conscious' consumers connected to extended networks of alternative food initiatives who are looking for locally sourced produce and are interested in regional and traditional foods. For this reason, based on our knowledge and previous studies, in total we contacted nine successful and representative examples of consumer co-operatives, grocers' and small shops specialised in local products and asked them to forward the questionnaire to their members (sampling units) via their mailing lists. The geographical focus of the pool of potential respondents was mainly in Larisa and Volos (local markets in proximity to the cluster) and in the major metropolitan areas of Athens and Thessaloniki. The response rate of 40% was acceptable. (b) In the second stage, the sampling units consisted of 'non conscious' consumers, in that they did not participate in co-operatives and other local food initiatives in the same regions. They were chosen through a predetermined exclusion criterion—question regarding their involvement and participation in related co-operatives. Only respondents with little or no involvement were selected to participate in the online questionnaire. Potential respondents were accessed by asking 'conscious' consumers' to indicate a person who did not belong to their network co-operative. Then, through the snowball technique, we stopped sampling this group once theoretical saturation was reached with a total of 75 people. This group was also reached by email (their personal mail-lists and other online mediums and social media, e.g., Facebook). At this point, we have to note that due to a low level of total responses, a fast way to access a large group of online respondents was by using university mailing lists also addressing respondents in other parts of Greece (distant consumers). The total number of 199 respondents consisted of 'conscious' consumers (15+16+6), that is from consumer co-operatives (15%), local grocery, fair trade or small specialised shops (16%) and markets without middlemen (6%), and 'non conscious' consumers consisting mainly of students (through university mailing lists (29%), and other 'non conscious' consumers (snowball method through personal mail-lists and social media) (38.5%).

- <sup>8</sup>Regarding the aggregate sample of the respondents, approximately 20% live in small and medium-sized cities of Thessaly (e.g., Larisa, Volos, Trikala, Karditsa) while 38% percent live in the largest agglomerations of Athens and Thessaloniki (among them 77 are men and 37 women). 39% (78) of the general sample are men and 61% (121) women, 50% are over 40 years old, 32% do not work (unemployed, housewives, students), 63% have an annual income of over 10,000 euros, 85% do not live alone under the same roof and 37% have a high specialisation in education (master, PhD).
- <sup>9</sup>Nine representatives of consumer groups from Thessaly (Federation of Thessalian Commercial Associations, Commercial Association of Larissa, Active Citizens of Larissa), Thessaloniki (Producers-Consumers Cooperative *To Koukouli*, Food distribution Cooperative *Another Way*, Consumer Cooperative Bios co-op) and Athens (Social and Solidarity Cooperative *Synallis*, *Bostani* – Alternative farmers' market, and Market Without Middlemen of *Drakopoulou* in Athens. Markets without middlemen (*Agores Horis Mesazontes*) is a grassroots movement that emerged in Greece during the crisis as an alternative supply chain to mass retailers that cuts out the middlemen in order to support small-scale farmers (Nikolaidou 2020).
- <sup>10</sup>The focus group took place as part of a workshop in the village of Mouzaki on 21–22 June 2019.
- <sup>11</sup>Given that it was very difficult for producers to attend focus groups due to their limited availability and exigent professional engagements ('pastoral' livestock farming) we chose to be facilitators with their consent in order to enable a 'distant' dialogue between the 'producer community' and the 'consumer community'. Having knowledge of territorial marketing and PGS, facilitators comprised four members of the scientific team and three *Terra Thessalia* experts who had also been involved in the participatory creation of the brand, two of them with extra knowledge of visualisation techniques. Our aim was to discuss with consumers the visualisation of existing guarantees and their links with territorial resources, so as to enhance consumers' awareness and knowledge of practices connecting products, production processes and quality attributes and achieve a common territorial understanding (knowledge sharing). After the focus group, consumers talked to farmers, cheese makers and the legal representative of the sales and distribution company of *Terra Thessalia* via field visits, stimulating a sensory experience that finally contributed to a deeper understanding of the production techniques linked to the territory's identity (e.g., cheese-making facilities, livestock and pastures, product tasting, natural landscape, villages, local culture, etc.).
- <sup>12</sup>This accords with the claims of Renting et al. (2003), Bouba-Olga and Carrincazeau (2008), Torre and Filippi (2005), Grasseni et al. (2013), Paltrineri and Spillare (2018) that there is an ambiguity in the definition and attributes of local products as well as with the vague terms of proximity stated by Roininen et al. (2005), Feldmann and Hamm (2015) Aprile et al. (2016), Renting et al. (2003), Bouba-Olga and Carrincazeau (2008), Torre and Filippi (2005), Grasseni et al. (2013), Paltrineri and Spillare (2018).
- <sup>13</sup>This finding broadly supports the work of other studies in this area (e.g., Weatherell et al. 2003, Burnett et al. 2011, Penney and Prior 2013, Arsil et al. 2014) that also associate intrinsic and extrinsic characteristics with perceptions of local food.
- <sup>14</sup>Of which, 35% (33) live in Athens agglomeration and 28% (26) in Thessaloniki.
- <sup>15</sup>Findings are consistent with the work of Colletis and Pecqueur (2005), Pecqueur (2007) and Gumuchian and Pecqueur, 2007.
- <sup>16</sup>For more information, see the pilot visualisation platform: <http://kouzeleas.eu5.org/pano/PGS/index.htm>
- <sup>17</sup>The GPS-tracking system for animals was implemented for the *Terra Thessalia* herds and allows real-time recording of animal movements. This specific information can be offered to prospective buyers of these dairy products so that they 'can verify/certify themselves the extensiveness of the livestock farms since they will be able to follow the movements of the herds in the requested time period' (<http://www.terrathessalia.gr/warranty/animal-welfare/?lang=en>).

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