# Need Analysis Survey Report

Co-funded by
the European Union

**Vocational education and training**

Erasmus+

| | |
|---|---|
| **Main objectives of the project** | Innovation |
| **Project Title** | **Local Food Trace** |
| **Project Acronym** | LOFT |
| **Projects Start Date (dd-mm-yyyy)** | **31-12-2022** |
| **Project Total Duration** | **30 months** |
| **Project End Date (dd-mm-yyyy)** | **31-05-2025** |
| **National Agency of the Applicant Organisation** | **TR01- THE CENTRE FOR EUROPEAN UNION EDUCATION AND YOUTH PROGRAMMES (TURKISH NATIONAL AGENCY)** |

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## 1. ABOUT THE "LOFT" PROJECT

The COVID-19 crisis has affected food systems worldwide and threatened people's access to food via multiple dynamics. Food systems face major social, economic, and environmental challenges. A socially sustainable food chain entails strengthening local food production and culture and building social capital and trust among actors in the food chain. Consumer behaviours today have dramatically evolved into online shopping rather than actual visits to restaurants or markets, following a healthy diet, paying more attention to food safety, and people fear ensuring food security. Since sales through online channels are allowed, sectors that digitally upgraded their operations have successfully run their businesses; the ones that do not miss this transformation are disadvantaged. The pandemic has accelerated digitalization in all sectors and raised the demand for localised and homemade food. This created opportunities for the local food producers (LFPs) to reach more fruitful and close markets.

The main objective of LOFT is to contribute to the EU's policy on developing the potential of digital technologies for teaching and learning with digital skills for small-scale food producers through innovative VET tools (Vocational Education and Training). It aims to decrease the pandemic's negative impacts on food consumers and take advantage of the growth opportunities for LFPs. The project will focus on economically and geographically disadvantaged producers in periurban areas of big cities. LOFT is designed to create solutions to the emerging needs of LFPs as they need digital upskilling to both be competitive and to benefit from the new opportunities of the digital transformation of the sector. In this regard, the four target groups are:

- The existing and/or potential small-scale local food producers
- The local food consumers
- The local level managing authorities (local decision makers) for food-related issues, provincial directorates, municipalities, etc.
- Stakeholders and the general public interested in local food production and consumption

A partnership from 4 Southern European countries (FR, IT, ES, TR) has come together to find solutions for primary needs and relevant opportunities in the digitalization of the agricultural sector:

1. Promotion of local food production systems with shorter and safer supply chains, taking into account traceability and food safety by producers through a triangle strategy; train LFPs, make the consumers aware, and the authorities be engaged.
2. Transformation of the conventional food systems into more digitalized food hubs with VET skills and training methodology.
3. Adopting global digitalization trends with digital tools.
4. Improve public awareness of local food production
5. Researching and databases on local food sectors

Specific objectives of this project include:

- Developing a database to unveil the potential of LFPs and consumption for food safety and food security issues on a trust-based approach between the LFPs and local consumers

- Facilitating the digital adaptation of LFPs by developing their digital skills
- Establishing sustainable food hubs that will act as online markets connecting local food actors, including the LFPs, the consumers, and regional managing authorities
- Generating a flexible VET tool (mobile application) where all the previous objectives combine: database, VET methodology, local food hubs
- Raising public awareness on local food, food safety, labelling, climate change and food security, sustainable growth of the agro-food sector, etc.

To answer those needs, 2 Intellectual outputs will be developed:
1. A training methodology and supporting tools, which include food production methods like urban agriculture, indoor farming, etc.
2. An APP based on the developed methodology for VET training, community building, awareness raising, monitoring, and commercialization.

The project intends to address digital transformation by developing digital readiness, resilience and capacity. It also pretends to adapt VET to labour market needs and increase the flexibility of opportunities in VET.

- The project aims to increase the capacity and readiness of LFPs to manage an effective shift towards digitalization through the use of digital education content, which is an online application. The multifunctional mobile application will develop the digital skills and competencies of LFPs and raise the general public's awareness of the importance of local food production issues.

- LOFT aims to create a balanced mix of vocational skills and work-based learning opportunities for the LFPs through its vocational learning methodology while at the same time supporting their businesses through the app and maps or local food communities. The expected result will also be multifunctional, bringing a digital dimension to their jobs to answer the emerging market needs, helping them in their capacities and building skills intelligence on a lifelong learning approach, and connecting with more target groups who are their potential customers.

- The mobile platform will also be a flexible, non-formal VET tool for the target groups. Each partner will adapt the tool to their local context and create local food hubs. The mobile app will act as a learning tool for food producers and a digital market, bringing together the producers and consumers; it will also act as a monitoring tool for managing authorities.

LOFT Erasmus + project is coordinated by BEUFA (Bureau and Foreign Affairs) of the Governorship of Kocaeli, Türkiye, and developed in cooperation with the following partners: Universidad de Zaragoza, Spain; Alma Mater Studiorum – Università di Bologna, Italy; CDE Petra Patrimonia, France; and Gebze Technical University, Türkiye.

## 2. ABOUT THE SURVEY STUDY

The partnership comprises 5 partners from France, Türkiye, Spain and Italy. All partners are from the southern part of Europe, which is mainly devoted to agriculture, which has been at the forefront of the economic and social crisis caused by the pandemic. In addition, these partners come from regions that are particularly exposed to the effects of climate change in urban areas.

### Purposes

The first output of the project is a DATABASE to unveil the potential of local food producers (LFPs) and consumption for food safety and food security issues on a trust-based approach between the LFPs and regional consumers. Specific data to deeply examine the focus groups, the exact needs, and expectations are needed for the second output of the project, which will be a training methodology aiming at acquiring the required technical skills and knowledge of the digital transformation framework.

Therefore, in the first phase of the project, all partners will conduct specific training needs assessment studies with representatives from three focus groups at local/regional levels.

This work package is dedicated to a specific field analysis study with 3 specific objectives:

- Mapping the existing situation in local food production and consumption
- Identifying the specific educational needs of the two main target groups (LFPs and potential local consumers) as well as the views of local decision-makers (managing actors) as core stakeholders for the sustainability of the project results.
- Collecting "good examples"

A questionnaire that was proposed by UNIZAR and reworked in collaboration with the partners involved in the project was used for the primary data collection from the target groups to examine the specific needs and issues to be addressed in a particular methodology of digital training for LFPs. Each partner is expected to reach at least 15 producers, 30 consumers, and 15 local managing actors and stakeholders.

### Questionnaires

Three questionnaires have been developed according to the target group to get as much helpful information as possible. Surveys were generally structured with closed-ended and some open-ended questions and were divided into several sections. First, the LFPs' questionnaire has a personal questions section asking about age, gender, education, etc., intending to know in detail the characteristics of the interviewed persons (sample composition). The following sections wanted to assess the sector situation regarding local food production: first, the digitalization degree, asking about the use of digital tools and technologies in LFP's work and digitalization needs, asking about training topics and learning formats. These sections were standard to authorities and stakeholders' questionnaires to compare knowledge and opinions about training in digitalization. Finally, the consumers' questionnaire was focused mainly on consumption behaviour, whether they buy local food, what they understand by local, etc.

## 3. SURVEYS AMONG TARGET GROUPS

National desktop research on local food production and consumption provided primary data and additional information on the digital needs of the three target groups of four Mediterranean Nations: Spain, France, Italy, and Türkiye. The three target groups were local food producers (LFPs), consumers, authorities, and stakeholders.

The questionnaires were distributed between May and September 2023 in the four different country partners. They submitted both via form using Microsoft Forms and Google Forms and by telephone and face-to-face interviews, intending to research at least 55 replies in each country: 15 for LFPs, 30 for consumers, and 10 for authorities and stakeholders.

A total of 233 responses to the surveys were registered. The rapport according to the different target groups is distributed as follows: 70 from LFPs, 122 from consumers, and 40 from authorities and external stakeholders, and the rapport among the partners is as follows: 75 from Spain, 44 from France, 52 from Italy, and 61 from Türkiye. Figure 1 shows the numbers among target groups and country partners.
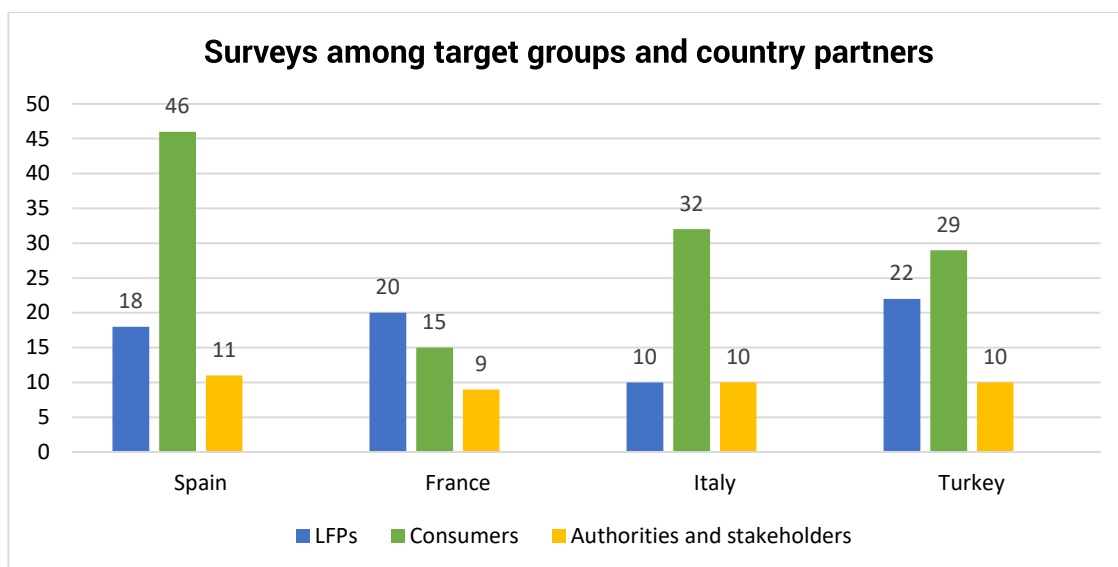


*Figure 1: Number of interviews per target group*

## 4. LOCAL FOOD PRODUCERS

### 4.1. Personal Data

The majority of the local food producers surveyed (37%) are from 46 to 60 years old (Fig. 2). There is a coincidence between Spain, Italy, and Türkiye and a difference with France, which has younger producers (Fig. 3). In terms of gender, the percentage of respondents is 64% male and 34% female (Fig. 4), according to Italy and Türkiye where men stand out while in Spain and France, they are more equitable (Fig. 5). Most of the respondents have a high school or vocational education (36%) or university education (30%). In comparison, only 9% have a master's degree or doctorate, 16% have only secondary education, and 9% have only primary education (Fig. 6). In each country, the majority of studies differ: in Spain and France, a high school degree (perhaps due to the young age of the French respondents), in Italy a secondary education and in Türkiye a university degree (Fig. 7). 67% are owners in the sector (Fig. 8) (although in France are primarily managers (Fig. 9)) and 34% have been in the industry for more than 20 years (Fig. 10), according to Italy and Türkiye, but not with Spain and France with the majority between 1 and 5 years of experience (Fig. 11). Almost no producers are engaged in livestock (14%) or food processing (19%) (except Spain) as most are involved in agriculture (42%) and/or distribution and sales (25%) (except France) (Fig. 12 and 13). 26% of the respondents belong to the fruit and vegetable sector, followed by industries like cereal derivatives, cheese, jams, bovine, and cheese (Fig. 14). Türkiye is the only country that is dedicated to the bovine sector (Fig.15). There number of respondents with conventional exploitation is 33% (in Türkiye with 50%), less than those with certified organic production (37%). However, 23% of respondents have organic production but are not yet certified (Fig. 16 and 17). More than half of producers (65%) sell directly to the consumer (Fig. 18) (in Türkiye, they mainly sell to distributors) (Fig.19). Their main customers are the final consumer, farmers' markets, and wholesalers (Fig. 20 and 21). The people surveyed are small producers with less than 5 employees (79%) (Fig. 22 and 23).
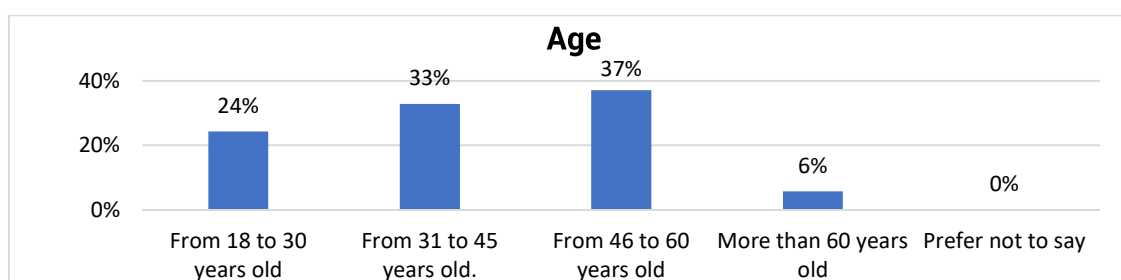


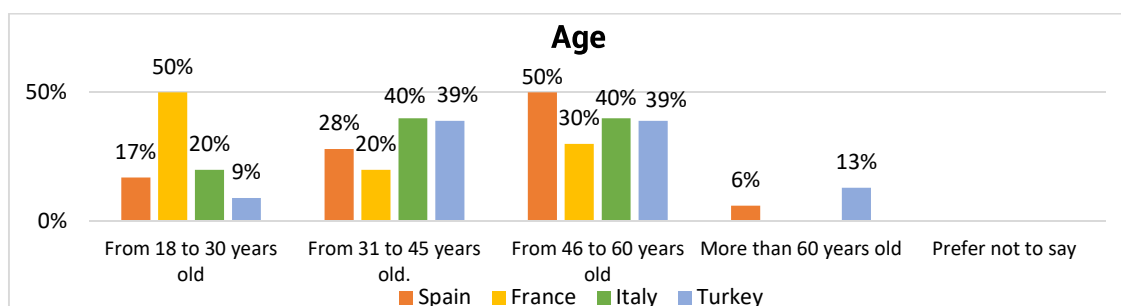*Figure 2: Age distribution among LFPs target group*



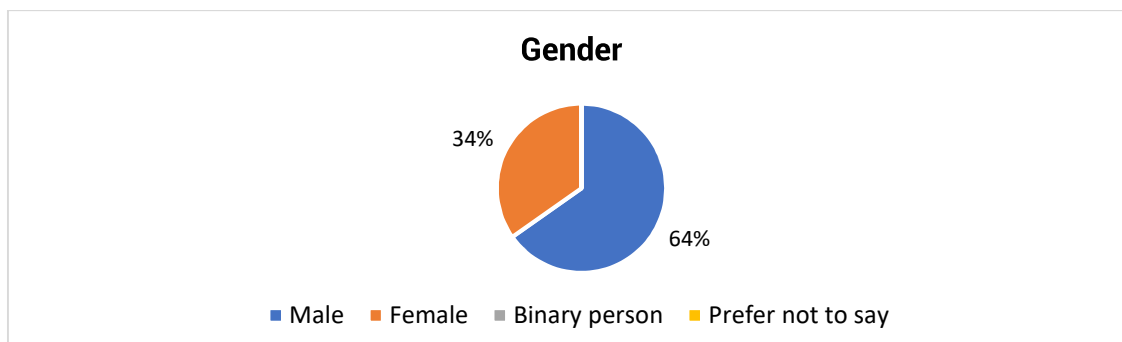*Figure 3: Age distribution among LFPs target group per European Nation*

**Gender**



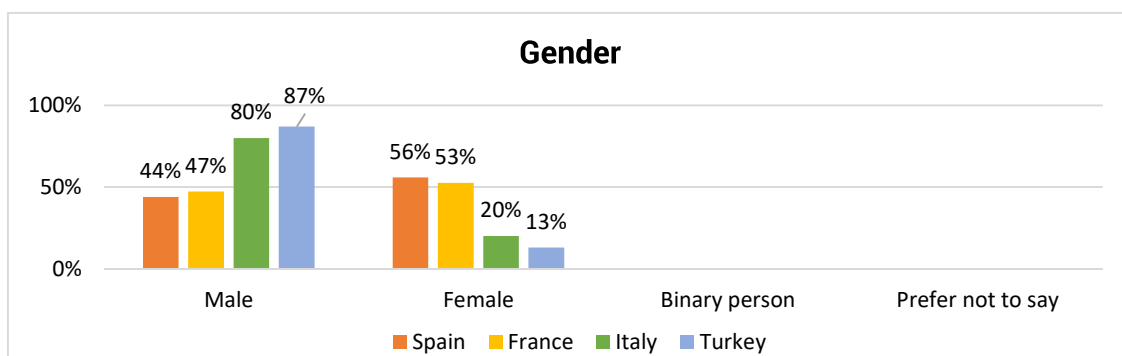Figure 4: Gender distribution among LFPs target group

**Gender**



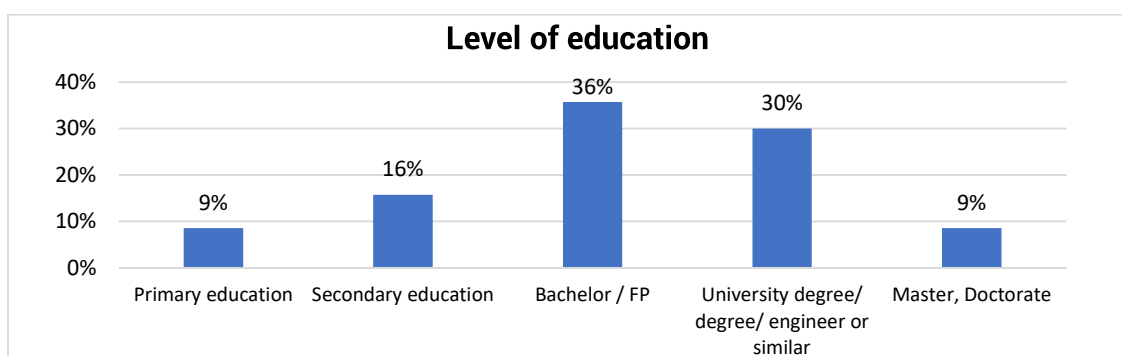Figure 5: Gender distribution among LFPs target group per European Nation

**Level of education**



Figure 6: Level of education distribution among LFPs target group
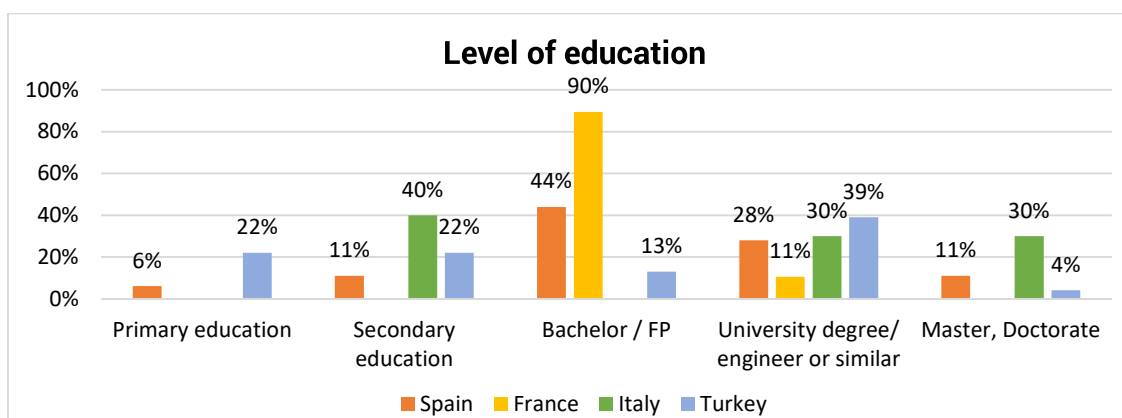
**Level of education**



Figure 7: Level of education distribution among LFPs target group per European Nation

**Job position**

31%    67%

- Owner
- Farm manager
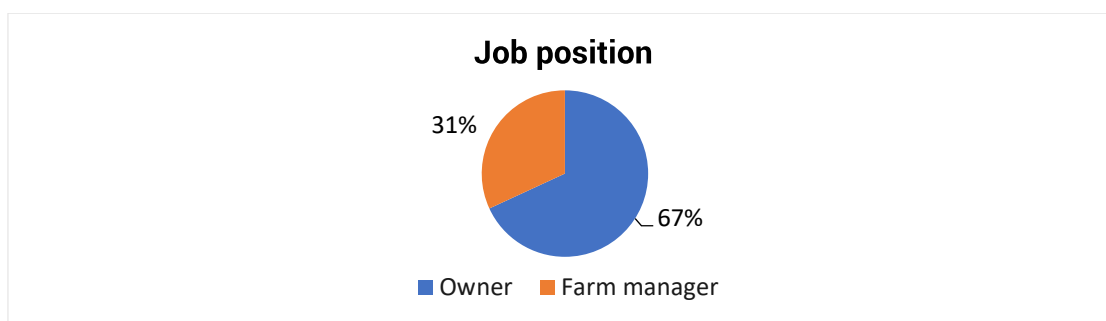
*Figure 8: Job position distribution among LFPs target group*



**Job position**

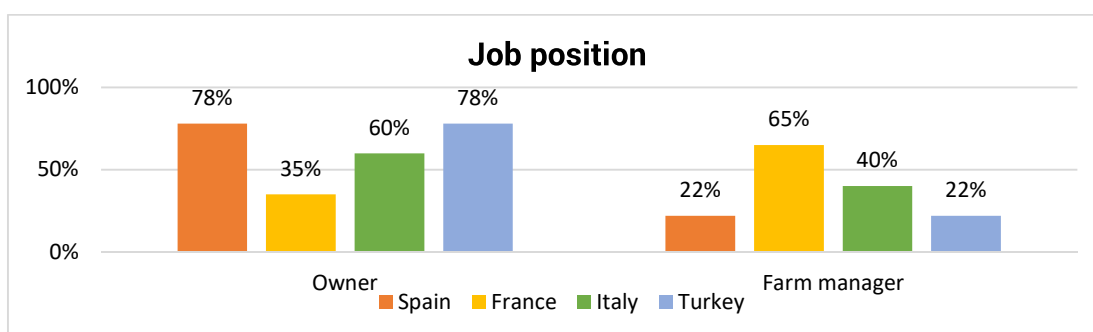| | Owner | Farm manager |
|---|---|---|
| Spain | 78% | 22% |
| France | 35% | 65% |
| Italy | 60% | 40% |
| Turkey | 78% | 22% |

*Figure 9: Job position distribution among LFPs target group per European Nation*



**Years of experience in the sector**

| Less than 1 year | Between 1 and 5 years | Between 5 and 10 years | Between 10 and 20 years | More than 20 years |
|---|---|---|---|---|
| 6% | 30% | 19% | 11% | 34% |

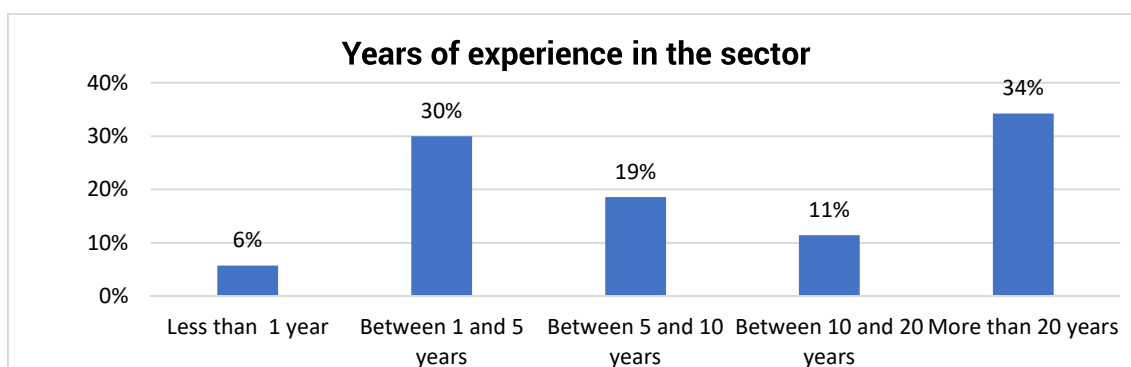*Figure 10: Years of experience distribution in the sector among LFPs target group*



**Years of experience in the sector**

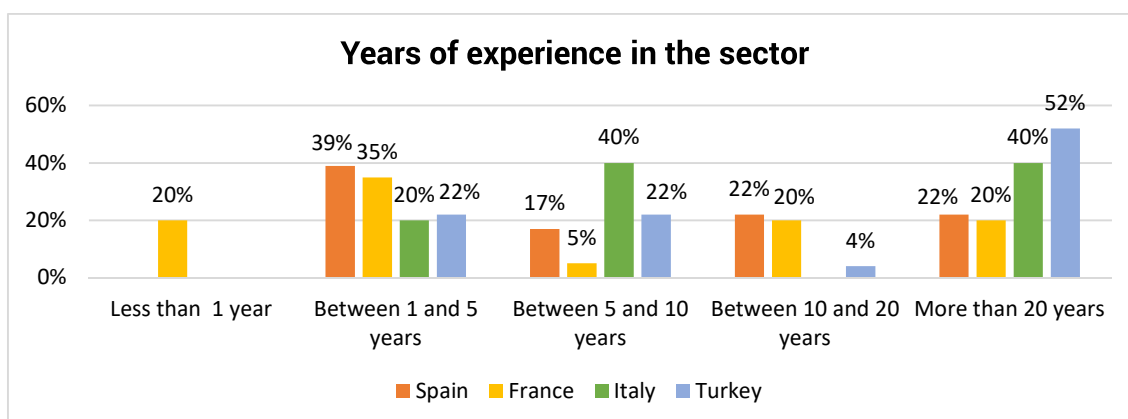| | Less than 1 year | Between 1 and 5 years | Between 5 and 10 years | Between 10 and 20 years | More than 20 years |
|---|---|---|---|---|---|
| Spain | | 39% | 17% | 22% | 22% |
| France | 20% | 35% | 5% | 20% | 20% |
| Italy | | 20% | 40% | | 40% |
| Turkey | | 22% | 22% | 4% | 52% |

*Figure 11: Years of experience distribution in the sector among LFPs target group per European Nation*

## Activities

- Agricultural production / crops: 42%
- Livestock production: 14%
- Food transformation and production: 19%
- Distribution and sale: 25%
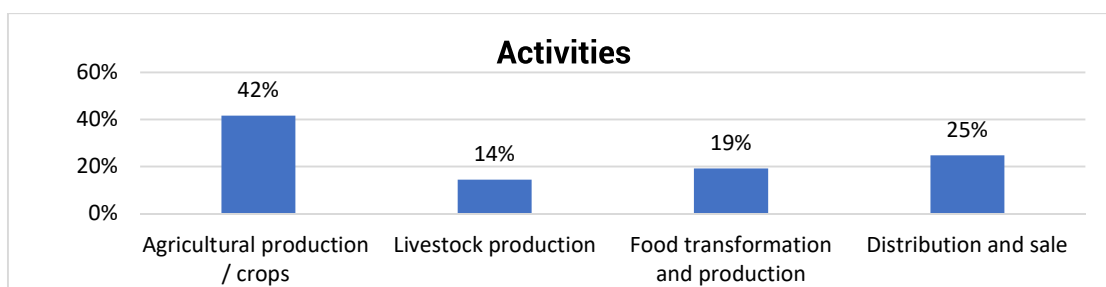
*Figure 12: Activities distribution in the sector among LFPs target group*



## Activities

| | Agricultural production / crops | Livestock production | Food transformation and production | Distribution and sale |
|---|---|---|---|---|
| Spain | 29% | 3% | 35% | 32% |
| France | 75% | 15% | 10% | |
| Italy | 40% | 16% | 22% | 22% |
| Turkey | 35% | 26% | 11% | 28% |
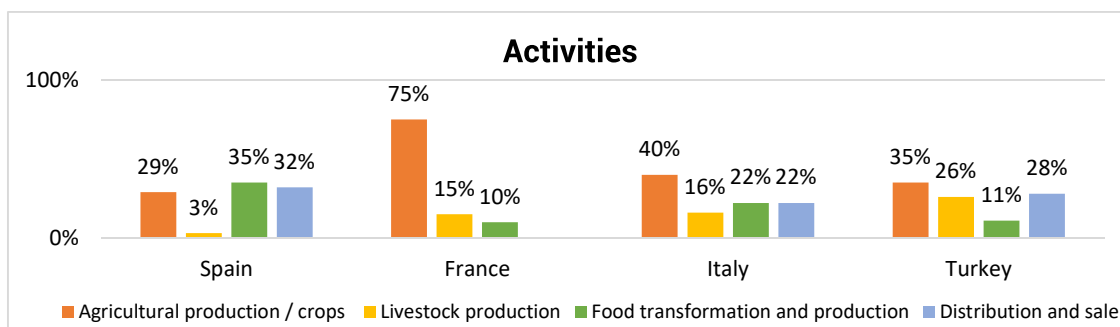
*Figure 13: Activities distribution in the sector among LFPs target group per European Nation*



## Sector

- Fruits and…: 26%
- Cereals: 14%
- Oil: 7%
- Ovine: 5%
- Bovine: 9%
- Birds: 5%
- Porcine: 1%
- Cereal…: 4%
- Cheese and…: 8%
- Jams and…: 10%
- Wine or…: 3%
- Honey: 3%
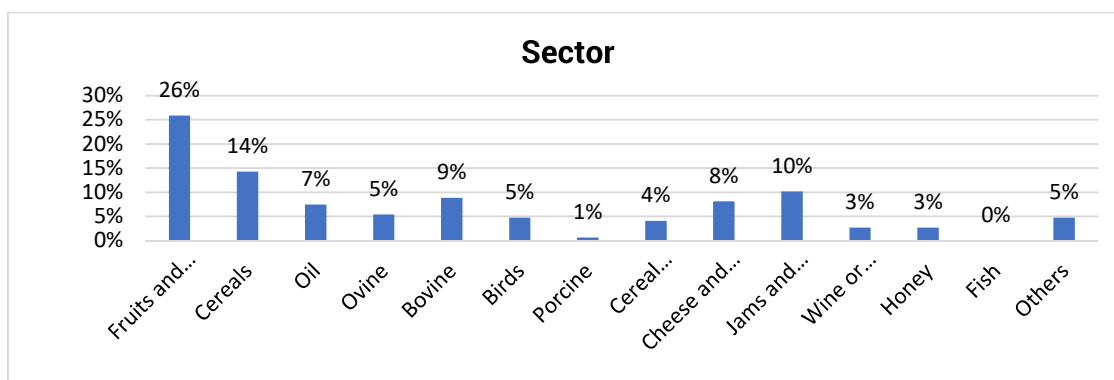- Fish: 0%
- Others: 5%

*Figure 14: Sector distribution among LFPs target group*
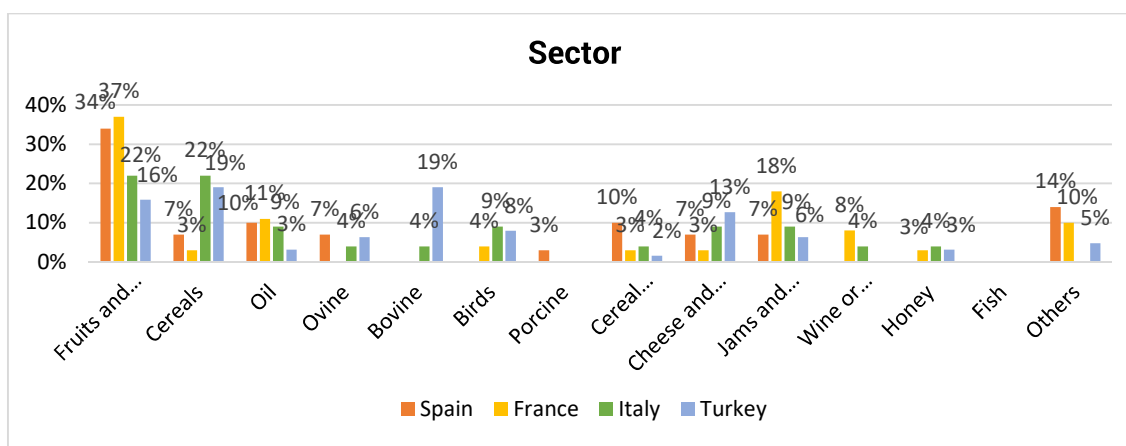


## Sector

*Figure 15: Sector distribution among LFPs target group per European Nation*
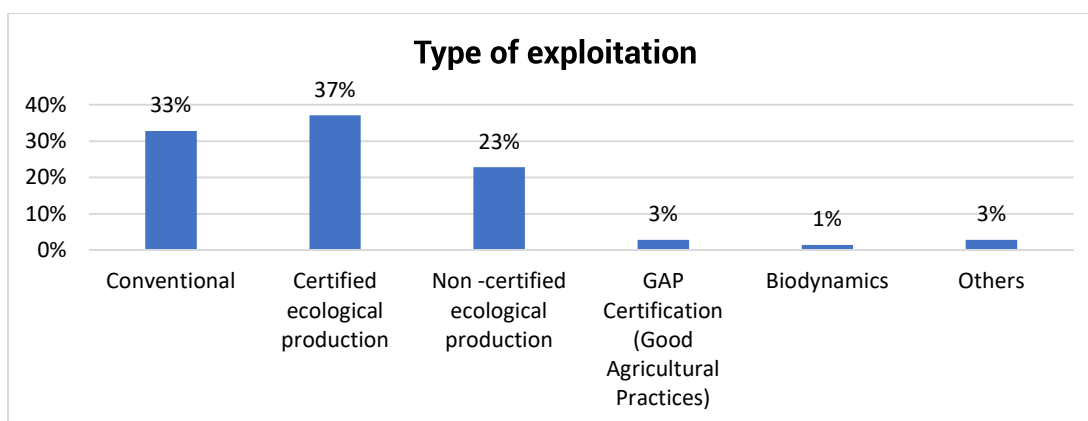
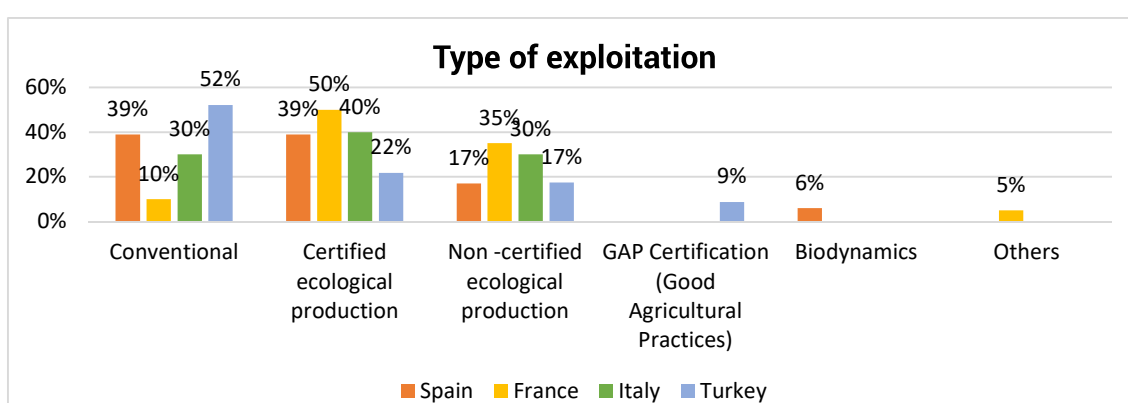*Figure 16: Type of exploitation distribution among LFPs target group*



*Figure 17: Type of exploitation distribution among LFPs target group per European Nation*



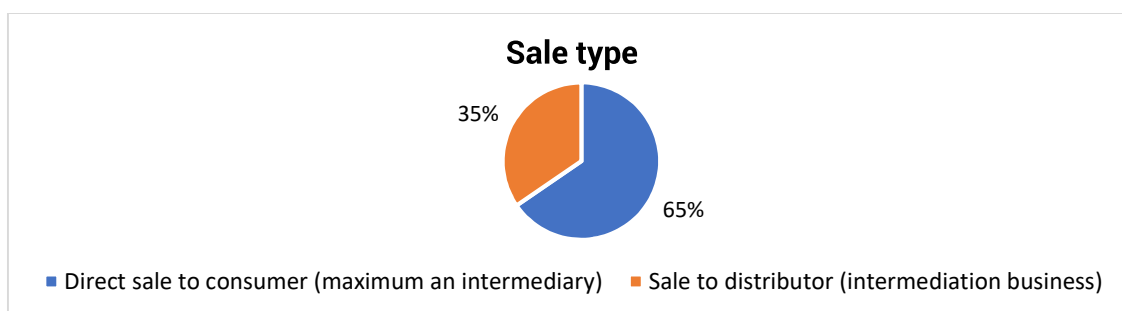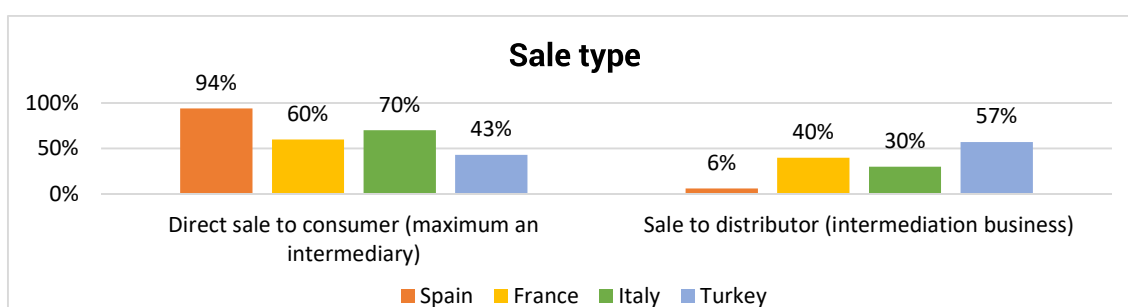*Figure 18: Sale type distribution among LFPs target group*



*Figure 19: Sale type distribution among LFPs target group per European Nation*
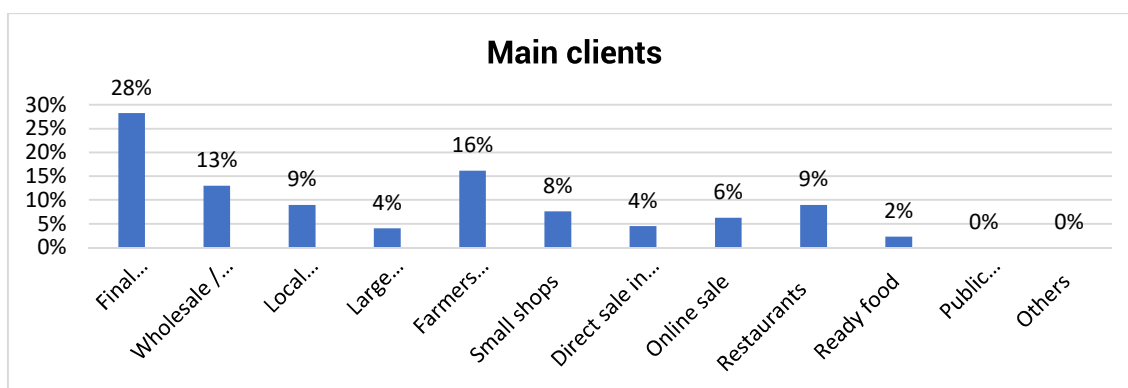
**Main clients**

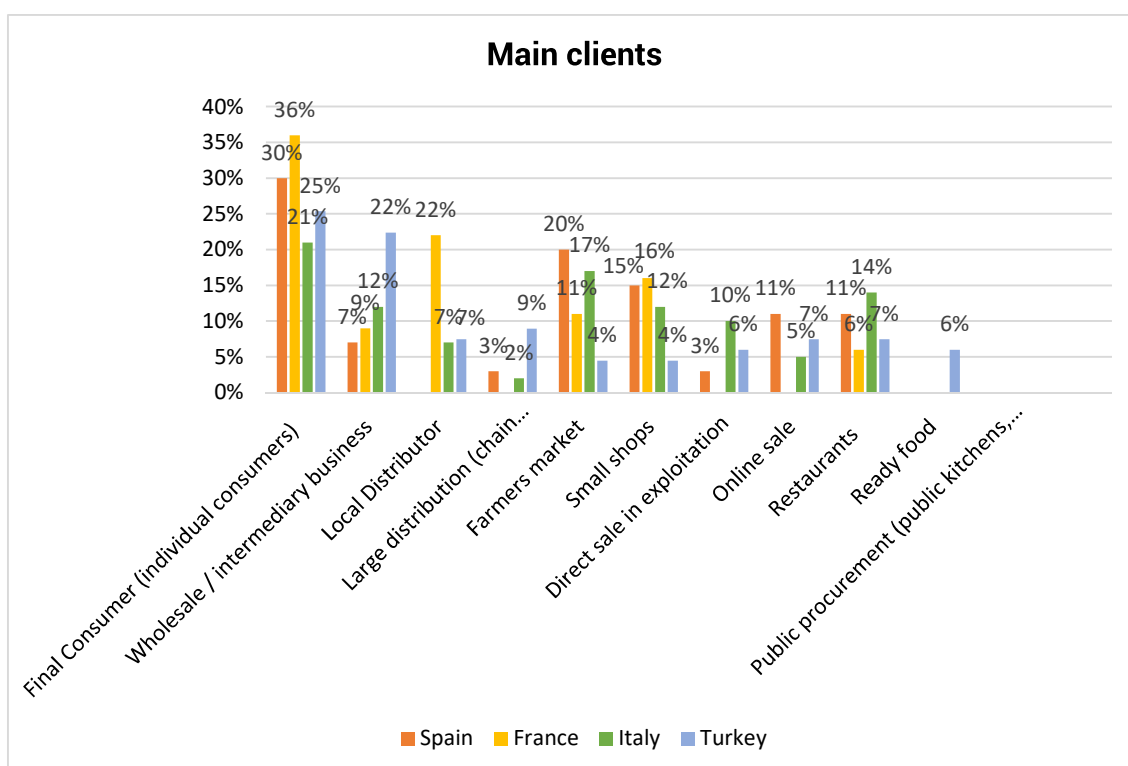Figure 20: Main client's distribution among LFPs target group



**Main clients**

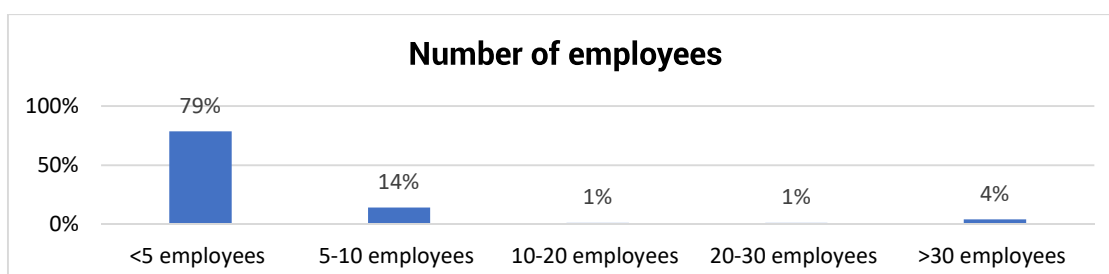Figure 21: Main client's distribution among LFPs target group per European Nation



**Number of employees**

Figure 22: Number of employees distributed among LFPs target group

**Number of employees**
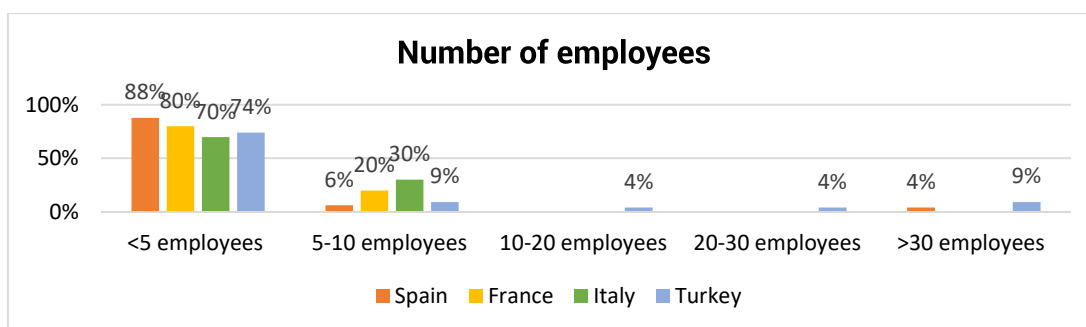


*Figure 23: Number of employees distributed among LFPs target group per European Nation*

## 4.2. Digitalization Level

Regarding day-to-day digital tools, almost all LFPs use e-mail (86%), and nearly half use social networks (47%). However, these are the only tools they work with. Many LFPs do not use online platforms and e-commerce (59%), almost none use intranet networks (80%), and more than half do not use online sales (53%) and apps (70%) (Fig. 24).

There is a difference between countries, especially Türkiye, where they do not use apps or social networks and have very few online stores, like Italy. An order of use of these tools could be established, with France first being the one that uses the most, then Spain, then Italy, and finally Türkiye, where they are used the least (Fig. 25).

**Use of digital tools in the work**



*Figure 24. Use of digital tools in the work distribution among LFPs target group*
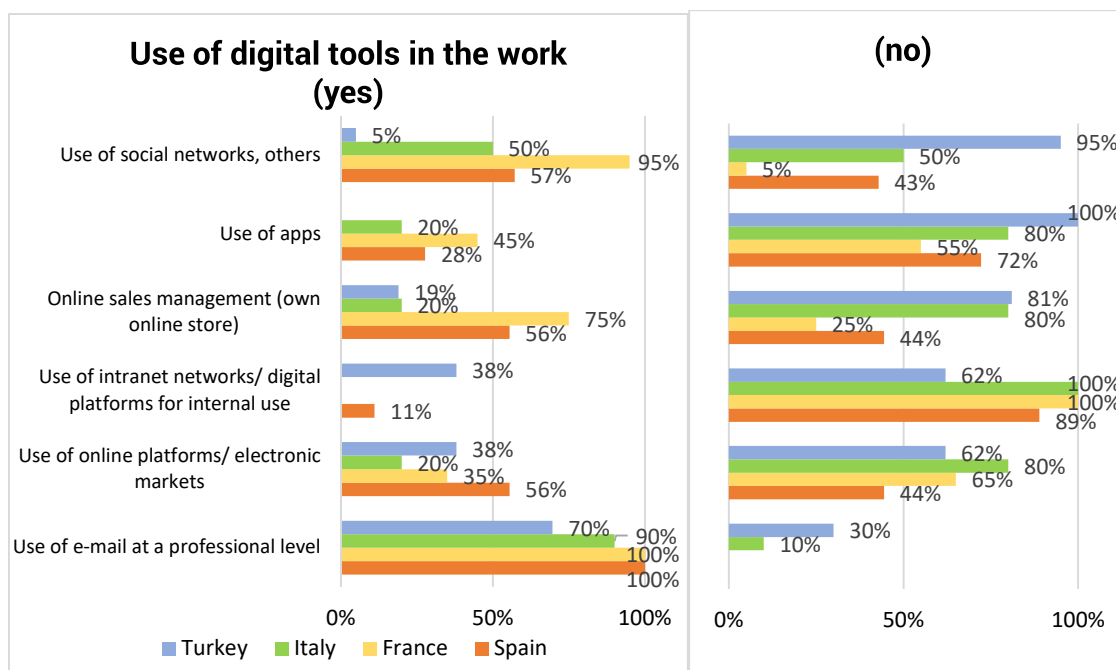
*Figure 25. Use of digital tools in the work distribution among LFPs target group per European Nation*

As far as digital technologies in the field and business are concerned, a general negative trend can be observed. The only exception is the use of management software (48.6%). Almost none use drones (83%), most do not use sensors and monitoring (78.6%), traceability software (77%), hubs or intranet cooperatives (74.3%), production software (74%), digital platforms for promotion (60%) and online commerce (51%). (Fig. 26).

Again, producers from France and Spain seem to be the ones that use digital technologies the most (Fig. 27).
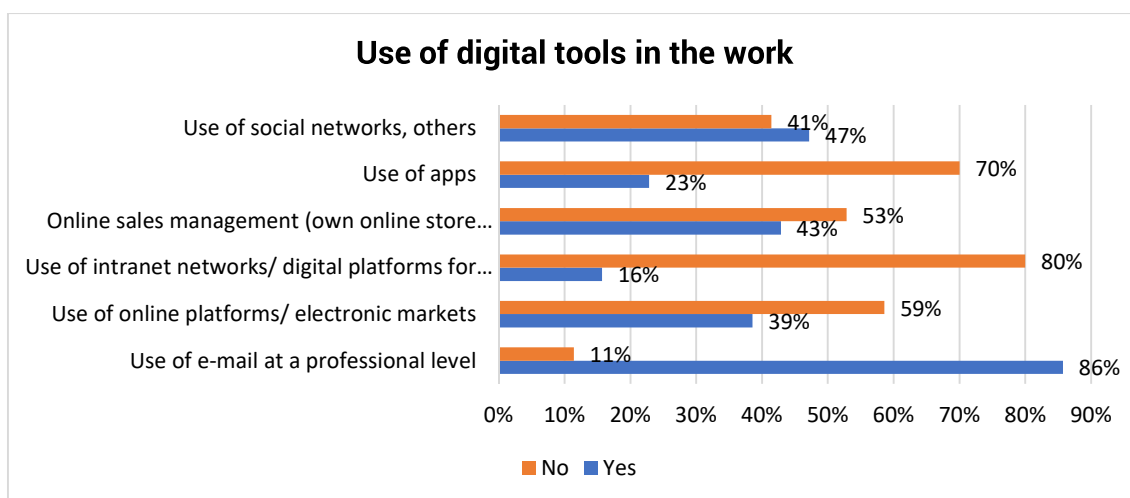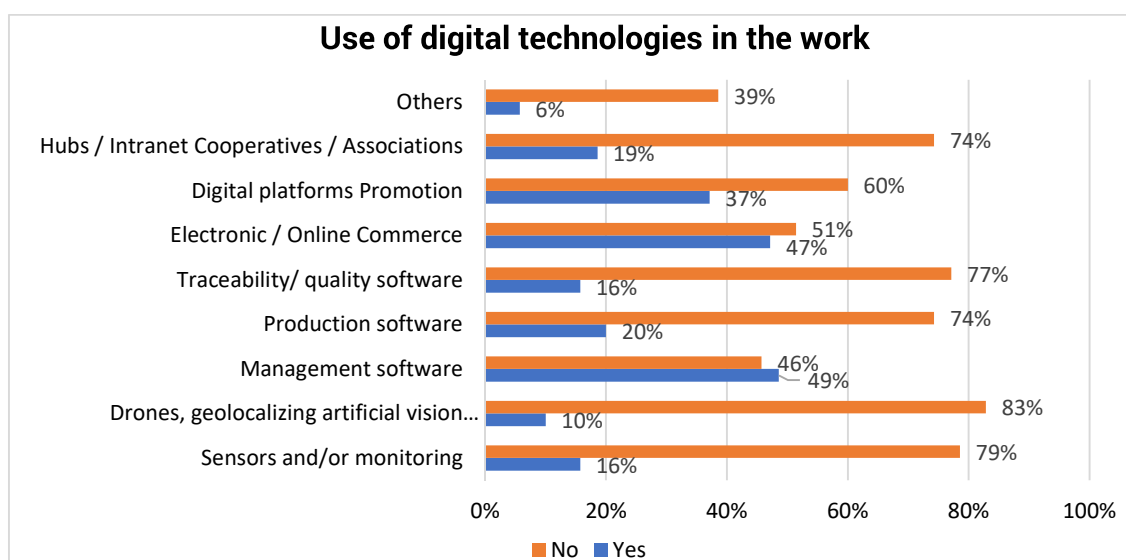


*Figure 26. Use of digital tools in the work distribution among LFPs target group*
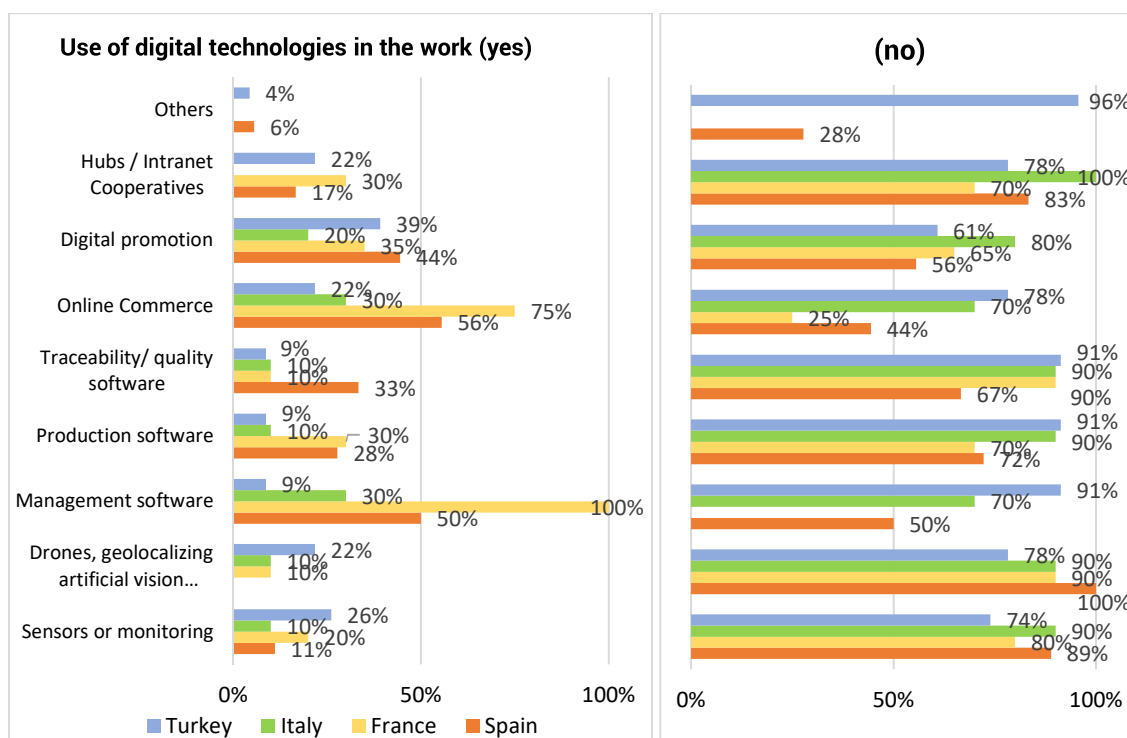
*Figure 27. Use of digital tools in the work distribution among LFPs target group per European Nation*

## 4.3. Digitalization Needs

Very few LFPs (23%) have taken a course on digitalization before, and more than half of them, 76%, have never taken it (Fig. 27). Some comments of respondents who answered yes are about the subject of the course (online marketing, management, excel, e-commerce) or how they took the course (with partnership). Spain stands out as the country with the most previous courses taken (Fig. 28). However, many of them (69%) are interested in doing it in the future (Fig. 29), Türkiye, and Spain especially (Fig. 30).
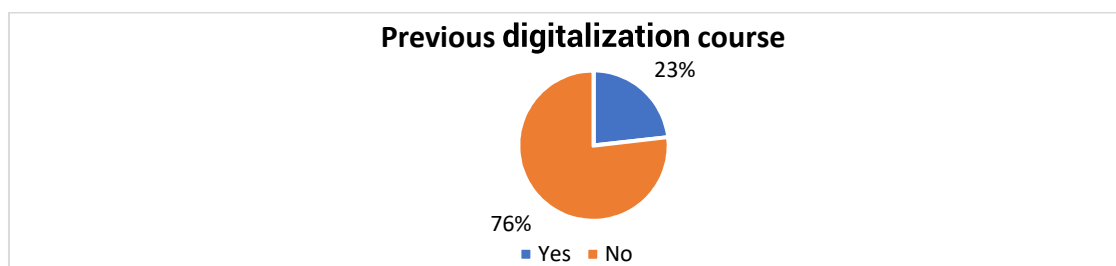


*Figure 27. Previous digitalization course distribution among LFPs target group*
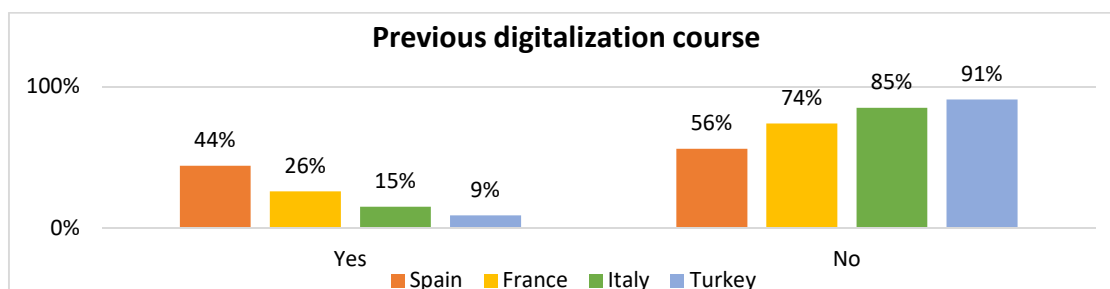


*Figure 28. Previous digitalization course distribution among LFPs target group per the European Nation*

**Interest in future digitalization course**

31%
69%

■ Yes ■ No
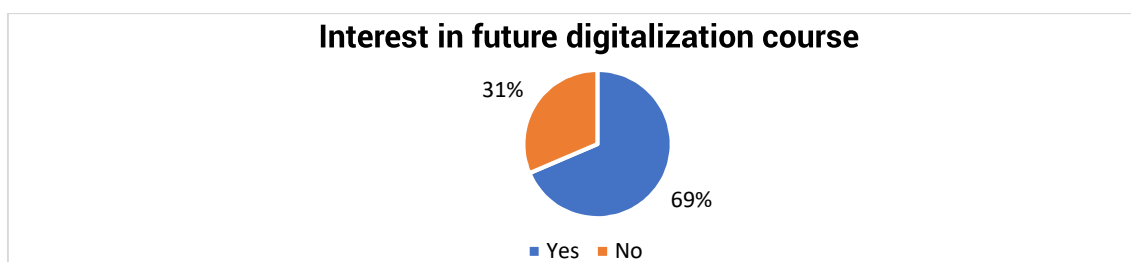
*Figure 29. Future digitalization course distribution among LFPs target group*



**Interest in future digitalization course**

100% — 83% — 87%

45% — 50% — 55% — 50%

17% — 13%

0%

Yes — No

■ Spain ■ France ■ Italy ■ Turkey
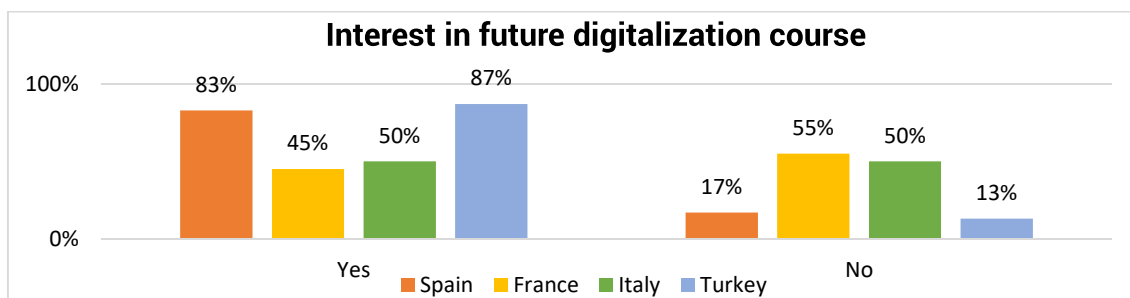
*Figure 30. Future digitalization course distribution among LFPs target group per the European Nation*

As for the digital technologies in which they would like to receive training, the majority of respondents, 32%, agree on training on online sales and marketing, followed by 24% on quality management tools, 23% on traceability tools and finally 21% on innovative farming technologies (Fig. 31). In this case, the countries show agreement on the priority technologies to train: sales and online marketing at first, although then Spain and France prefer traceability tools and Italy is more interested in quality tools and Türkiye in intelligent farm tools (Fig. 32).



**Digital technologies training**

| Category | |
|---|---|
| Sales and online marketing (electronic / online commerce, promotion of digital platforms, business models, licenses, creation and use of websites,… | 32% |
| Quality management tools (follow -up tools, certification) | 24% |
| Traceability tools (Blockchain, QR codes, etc.) | 23% |
| Intelligent agricultural technologies (sensors, drones, geolocators, automation, production software, management software, artificial vision systems, AI… | 21% |

0%   10%   20%   30%   40%

*Figure 31. Digital technologies training distribution among LFPs target group*

**Digital technologies training**
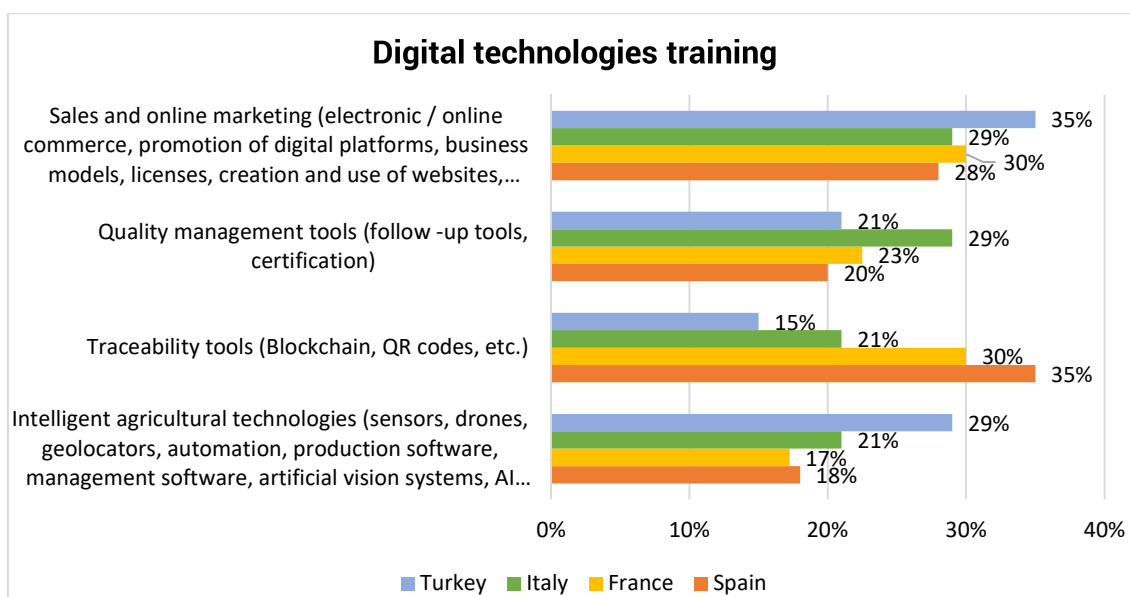
*Figure 32. Digital technologies training distribution among LFPs target group per European Nation*

For learning formats, 26% prefer online education tools, while 20% opt for hybrid opportunities, 18% for face-to-face events, 13% for face-to-face conversations, 12% for mobile applications, 6% for supporting visual materials, and 4% for self-learning (Fig. 33).

In almost all countries, the preference for online coincides, except in Türkiye, where they give more weight to face-to-face events and conversations. This last format is also more relevant for Spain than the hybrid format, and for France, self-learning is ahead. Only in Italy is the hybrid format in second place, followed by apps (Fig. 34).
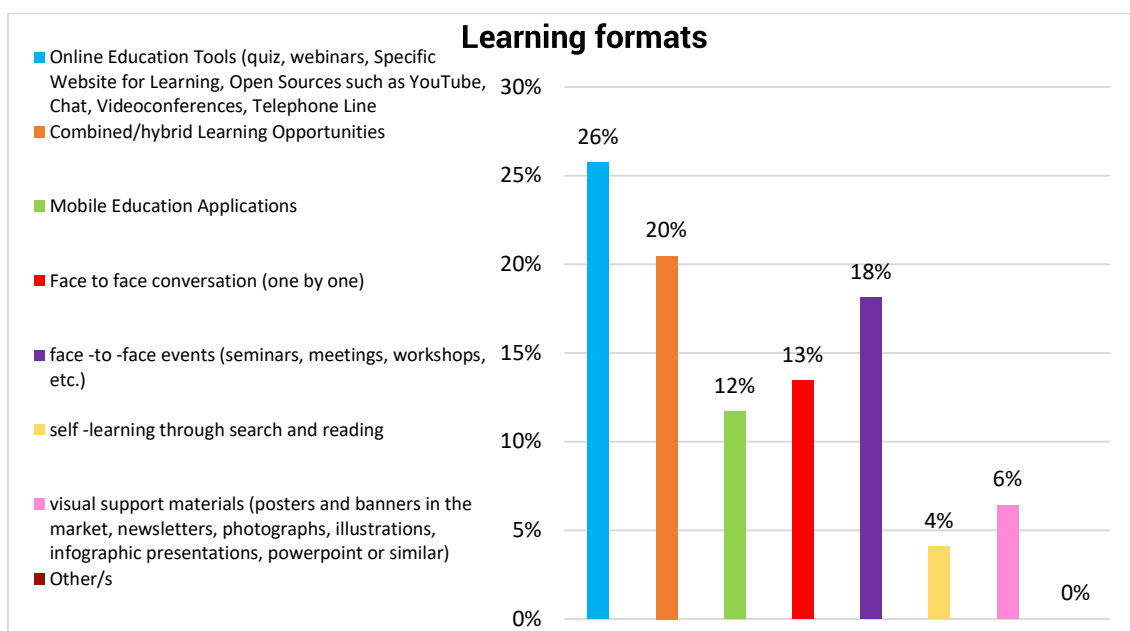


**Learning formats**

*Figure 33. Learning formats distribution among LFPs target group*
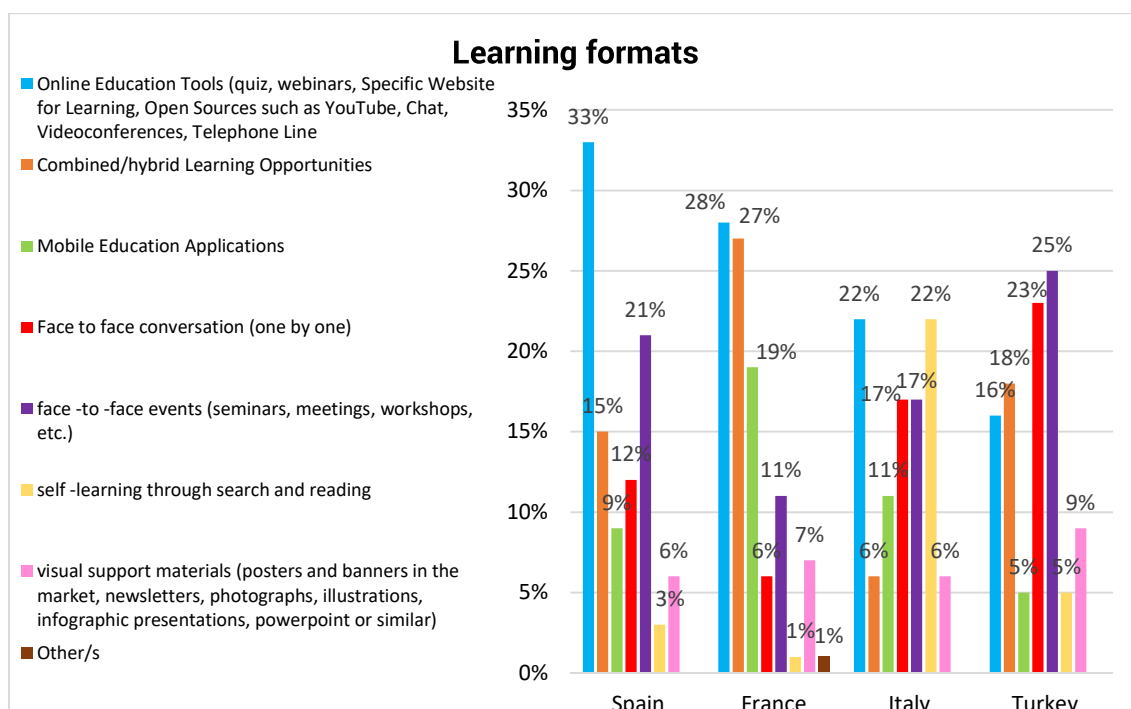
Figure 34. Learning formats distribution among LFPs target group per European Nation

When asked what they believe to be the primary training needs for local food producers, the majority (26%) consider sustainability and digital business transformation to be critical issues, followed by promotion and marketing (14%), traceability and food safety (13%), technical crop knowledge (11%), responsible consumption and production (10%) and labeling and certification (9%). Other needs of lesser importance to respondents were (7%) business development (6%) and legislation (4%) (Fig. 35). According to each country, Spain and Italy meet the global results, Türkiye also, although its results are more balanced. Yet, France highlights that training needs technical knowledge on production, responsible production, and consumption (Fig. 36).
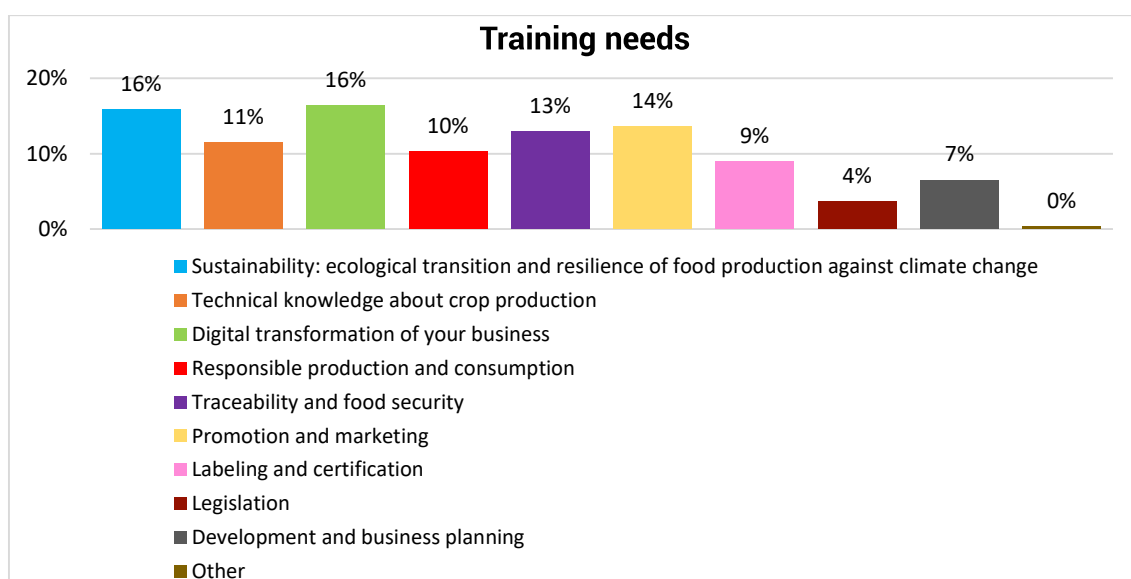


Figure 35. Training needs distribution among LFPs' target group

**Training needs**



Legend:
- Sustainability: ecological transition and resilience of food production against climate change
- Technical knowledge about crop production
- Digital transformation of your business
- Responsible production and consumption
- Traceability and food security
- Promotion and marketing
- Labeling and certification
- Legislation
- Development and business planning
- Other
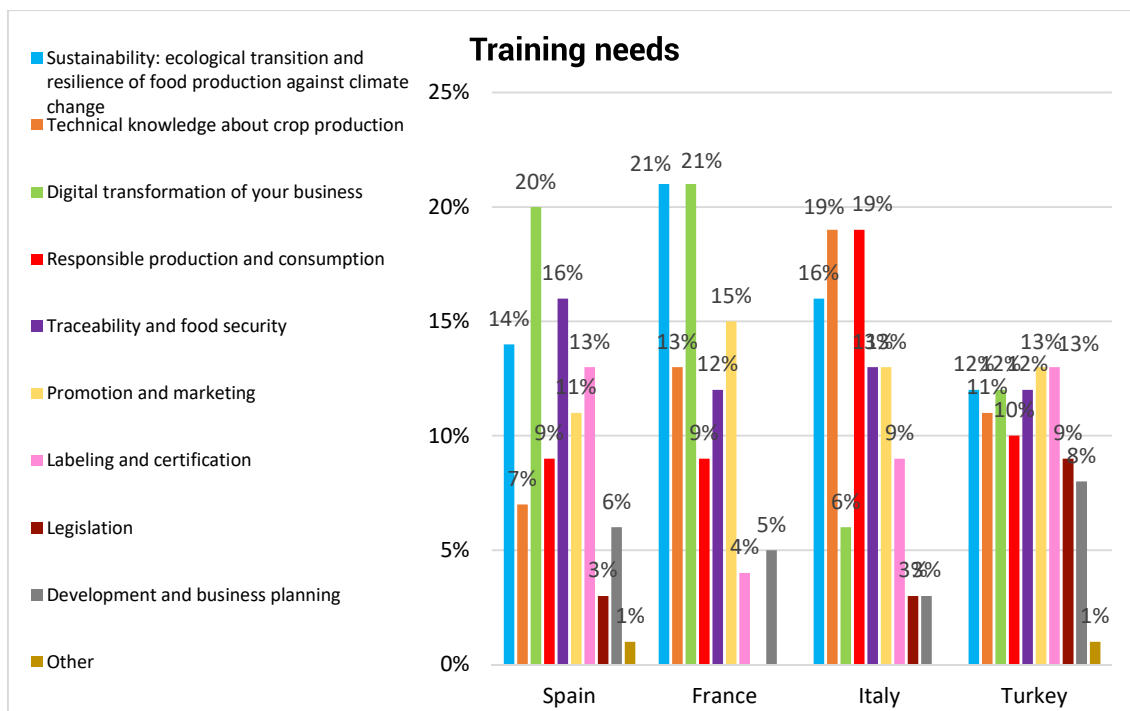
*Figure 36. Training needs distribution among LFPs target group per European Nation*

Most local food producers are aware of the legislation relevant to food production and sales to a large extent. From 1 to 5 is 1 a little and five a lot: 19% answered 5, 34% 4, 27% 3, 7% 2, and 13% 1 (Fig. 37). France and Spain stand out as countries where LFPs say they have more knowledge about local food legislation, followed by Türkiye and Italy (Fig. 38).

**Knowledge about legislation on local food**



1 • 2 • 3 • 4 • 5
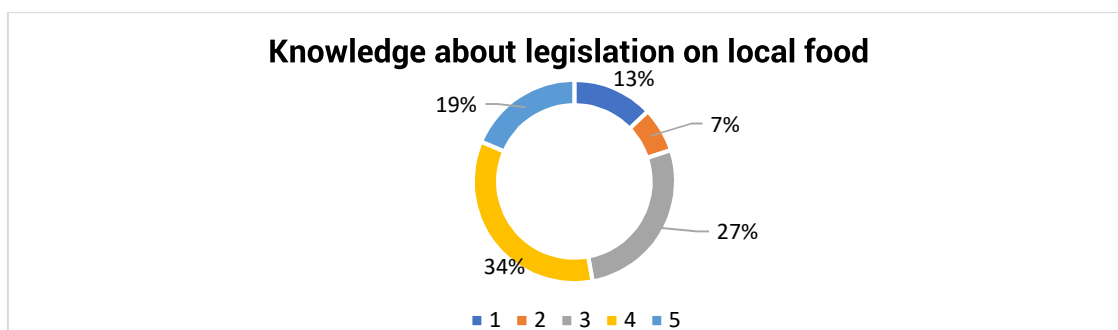
*Figure 37. Legislation knowledge distribution among LFPs target group*

**Knowledge about legislation on local food**



France • Italy • Turkey • Spain
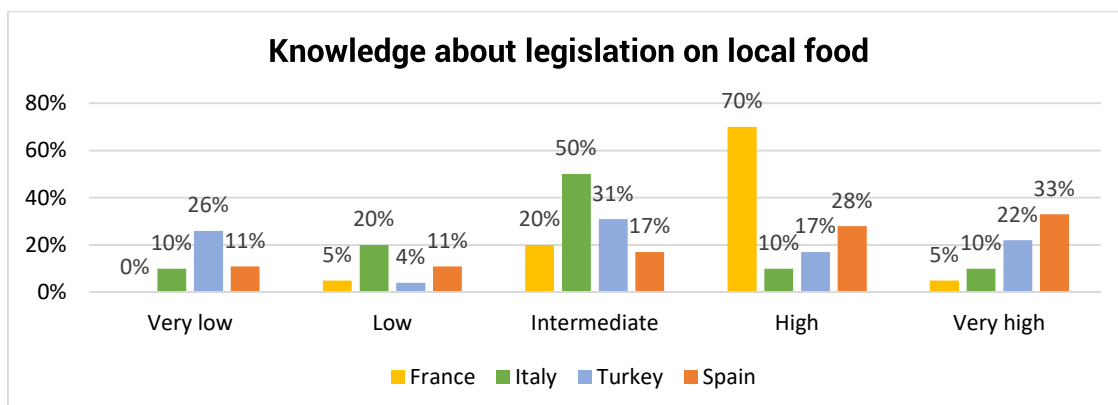
*Figure 38. Legislation knowledge distribution among LFPs target group per European Nation*

Moreover, the vast majority do not receive professional support of any kind (80%), and only 20% receive it (Fig. 39). In Spain, 2 of them do it through the "Instituto de Fomento Aragonés," 2 through "gestorías" and one by subcontracting digital services for the website, WordPress. Some answers in Türkiye were: "I get agricultural activity-livestock support from the state," "Foreign Trade Support, BRC Certificate, Internal Audit Consultancy, IK Consultancy within the scope of ISO9000 ISO22000".
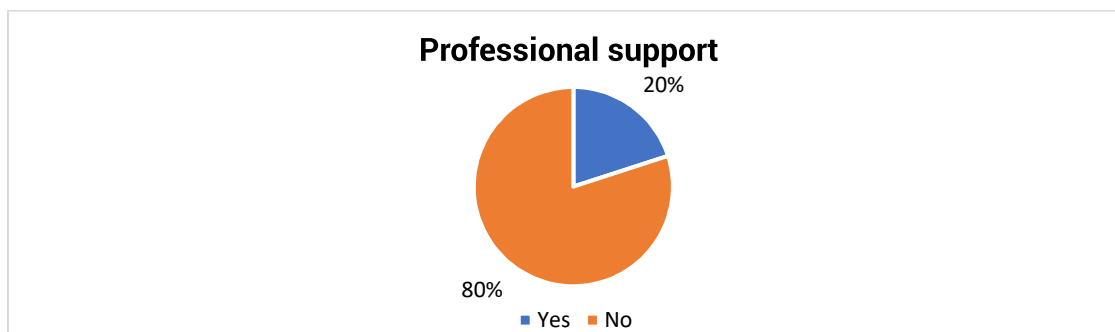


*Figure 39. Professional support distribution among LFPs target group*

### 4.4. Participation in LOFT

Finally, the graphs show support for and a positive concept of the Local Food Trace project since 73% of the surveyed LFPs are interested in participating in the project (Fig. 40).

One interesting comment from a Turkish LFP was: "On-site training will be more beneficial for food production. We don't have time to go to the city to study. We would like to receive applied training on-site".
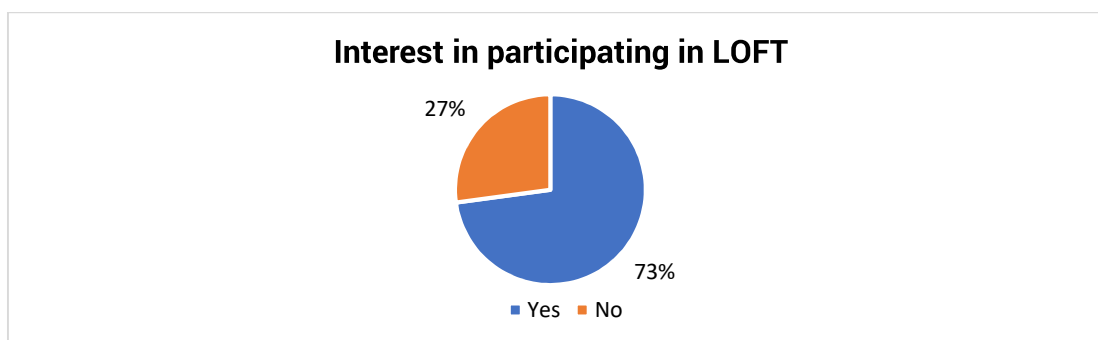


*Figure 40. LOFT Participation interest distribution among LFPs target group*

## 5. CONSUMERS

### 5.1. Personal Data

A total of 122 consumers responded to the survey. 34% were between 18-30 years old, and 30% were between 31-45 years old (Fig. 41). This majority of young consumers is since 88% are young in Italy. France and Türkiye are between 31 and 45 years old, and Spain is between 46 and 60 (Fig.42).

The majority were female (56%) compared to 43% of men and 1% who preferred not to say their gender (Fig. 43), except in Türkiye, where there are more male consumers (Fig. 44). 79% of consumers surveyed lived in an urban environment, while 21% lived in rural areas (Fig. 45 and 46).
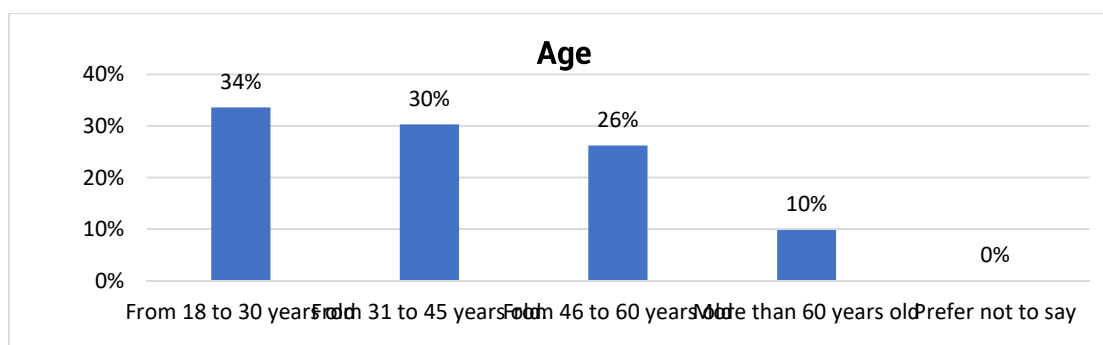


*Figure 41. Age distribution among consumers' target group*
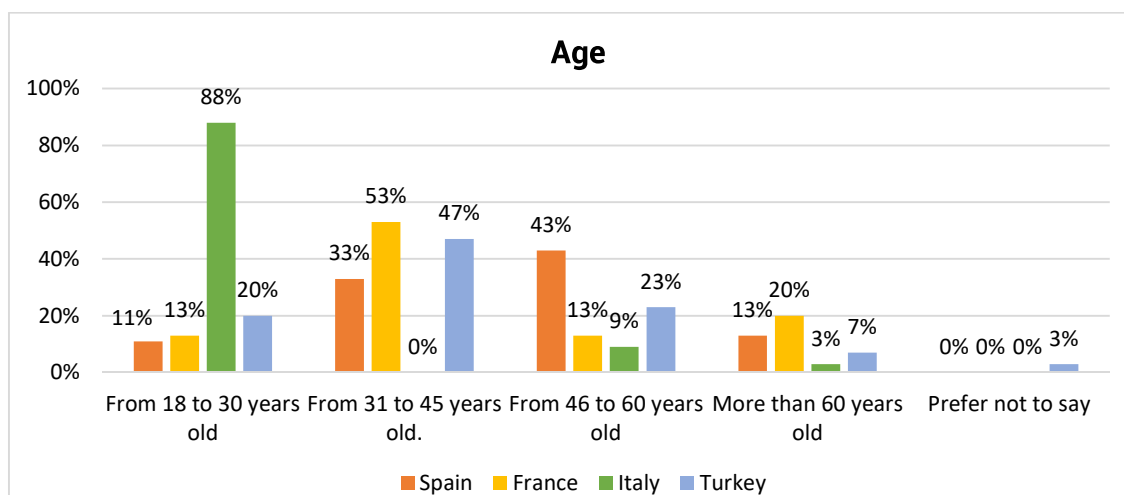


*Figure 42. Age distribution among consumers' target group per European Nation*
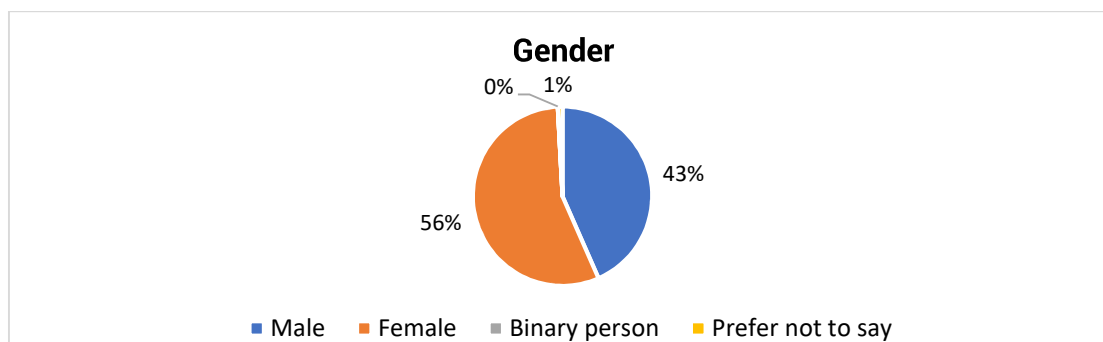


*Figure 43. Gender distribution among the consumer's target group*
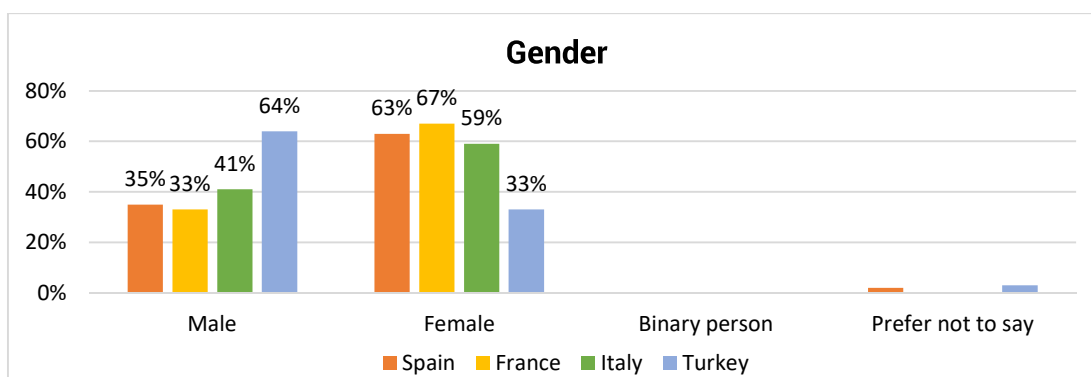
*Figure 44. Gender distribution among consumers' target group per the European Nation*
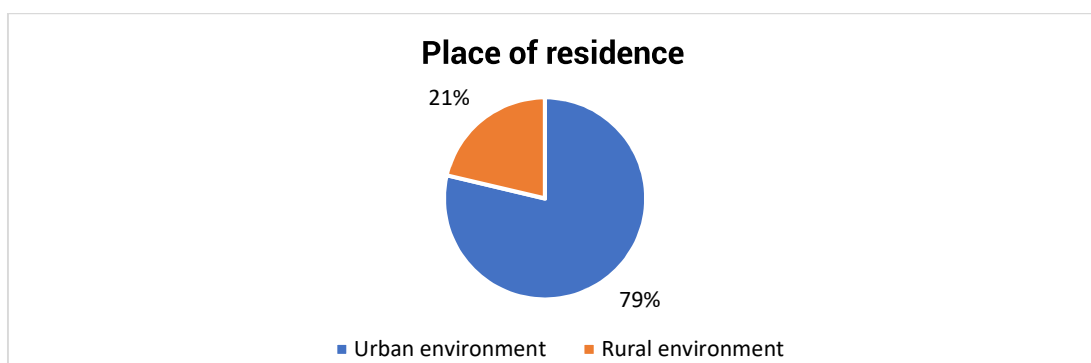


*Figure 45. Residence distribution among the consumers' target group*
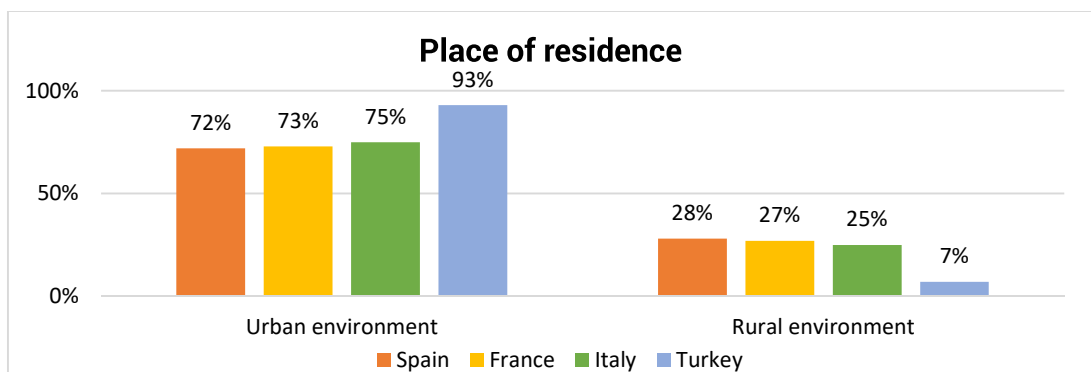


*Figure 46. Residence distribution among consumers target group per European Nation*

### 5.2. Consumption Behaviour

Regarding the importance of certain aspects when purchasing food, the quality/price ratio was considered the most important (47%), followed by trust in the seller (32%). Price, certified products, and distance (local products) were also considered necessary. In contrast, social sustainability was the least important for consumers (Fig. 47).

**Aspects when purchasing**
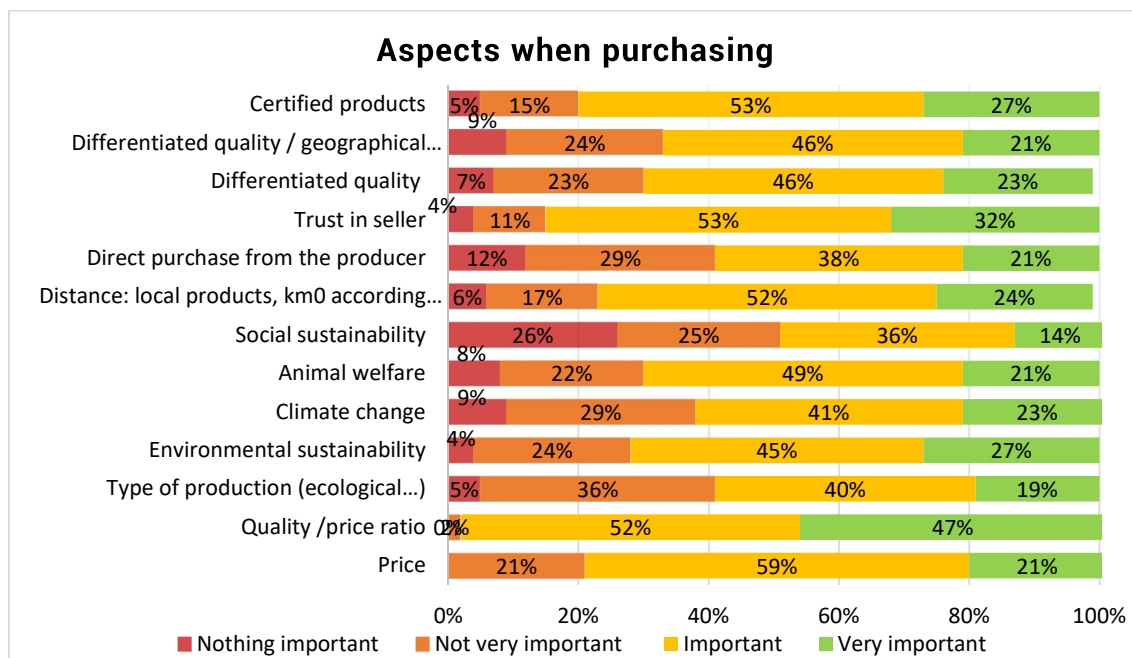


*Figure 47. Distribution among the importance of aspects at the time of purchase of the consumer group*

Regarding the place of purchase of fresh produce, 47.1% and 17% shop quite a lot and always, respectively, in big supermarkets. Many consumers also shop in local specialty shops (42%, which is quite a lot). Generally, the least frequented places for shopping are local general stores, farmers' markets, direct farmers' online shops, and others (Fig. 48).

**Purchasing locations**
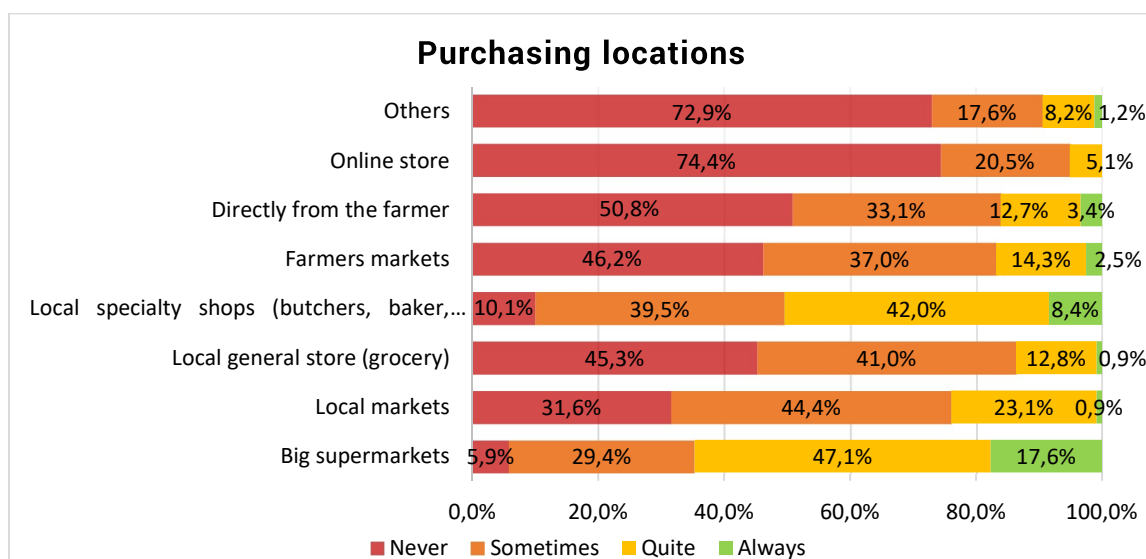


*Figure 48. Purchasing locations distribution among the consumer group*

Many consumers focused on 'local' within the same city or surrounding area and same province (24% and 21%), more closely and internally. However, the term local was also used for the same neighborhood shops, nearest available sources, etc. (Fig. 49 and 50).
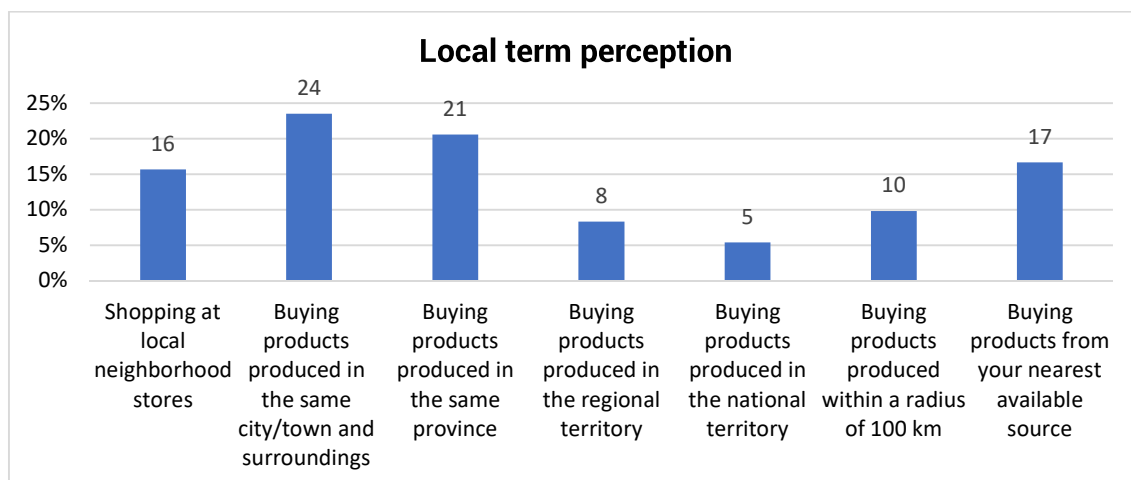


*Figure 49. 'Local term' perception distribution among the consumer group*
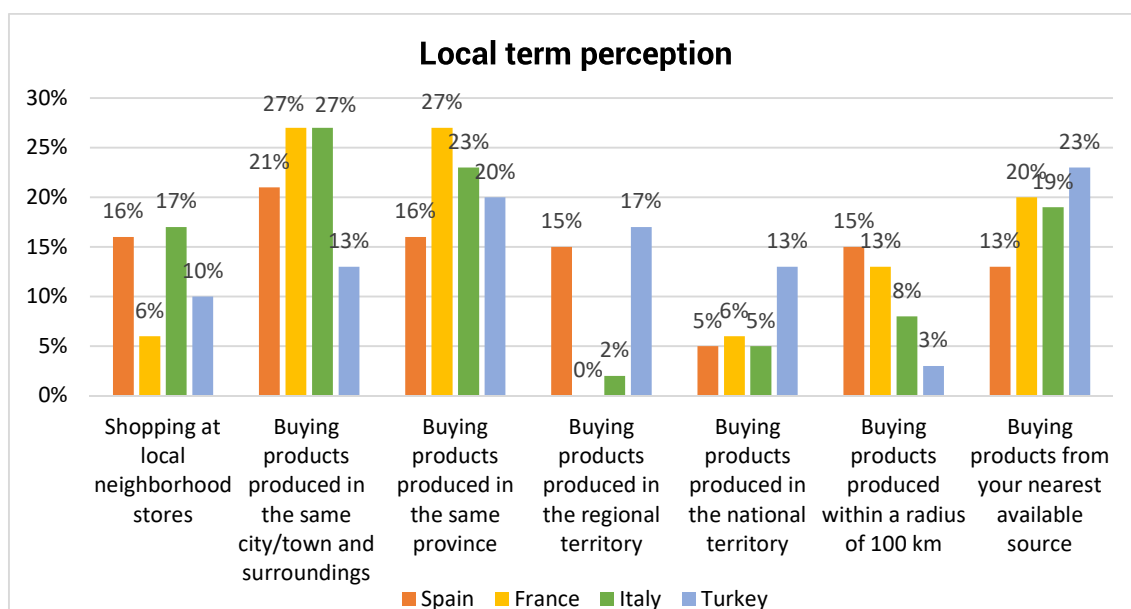


*Figure 50. 'Local term' perception distribution among the consumer group per the European Nation*

Next, the frequency of local food purchases was measured according to food items. Consumers bought Only bread daily and/or several times a week. Vegetables, fruit, meat, and eggs were bought weekly. Fish and dairy as local products were never bought (Fig. 51).

**Local purchase frequency**
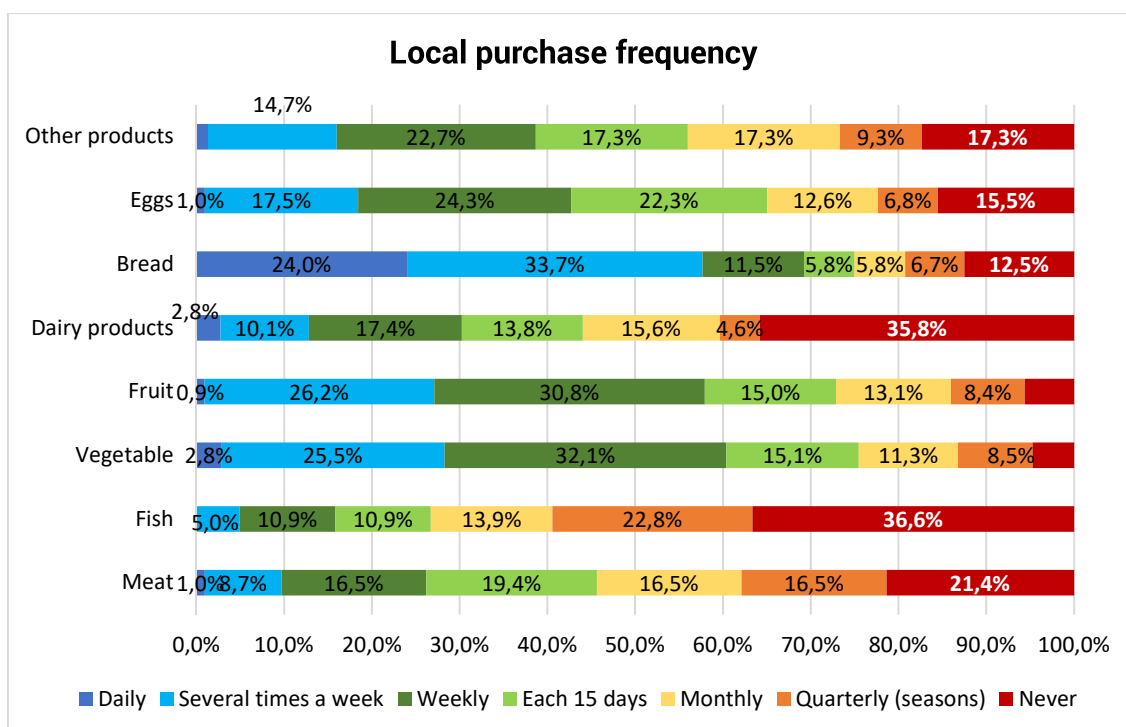


*Figure 51. Local purchase frequency distribution among the consumer group*

24% of consumers affirmed that the main reason preventing them from consuming local food was that it is difficult to find all categories, followed by expensive prices (15%) and poor accessibility (14%). While it is true that 8% do not know where to buy them, 18% do not have any reason that prevents them from consuming local food as they buy it without any problem (Fig. 52).  There are some differences between the countries, in Türkiye the reasons against local food are quite balanced. At the same time, in Spain, the difficulty of finding it in all categories and poor accessibility stands out. France and Italy agreed to buy it without problems but are against it because of its expensive price (Fig.53).

**Reasons against local food consumption**
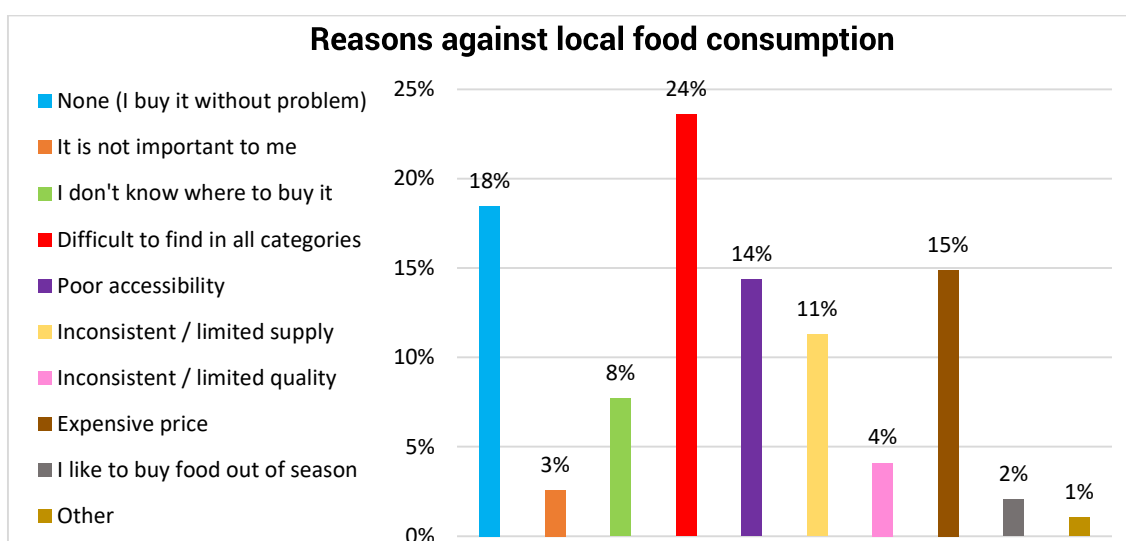


*Figure 52. Distribution among disadvantages for local purchase for consumers group*

**Reasons against local food consumption**
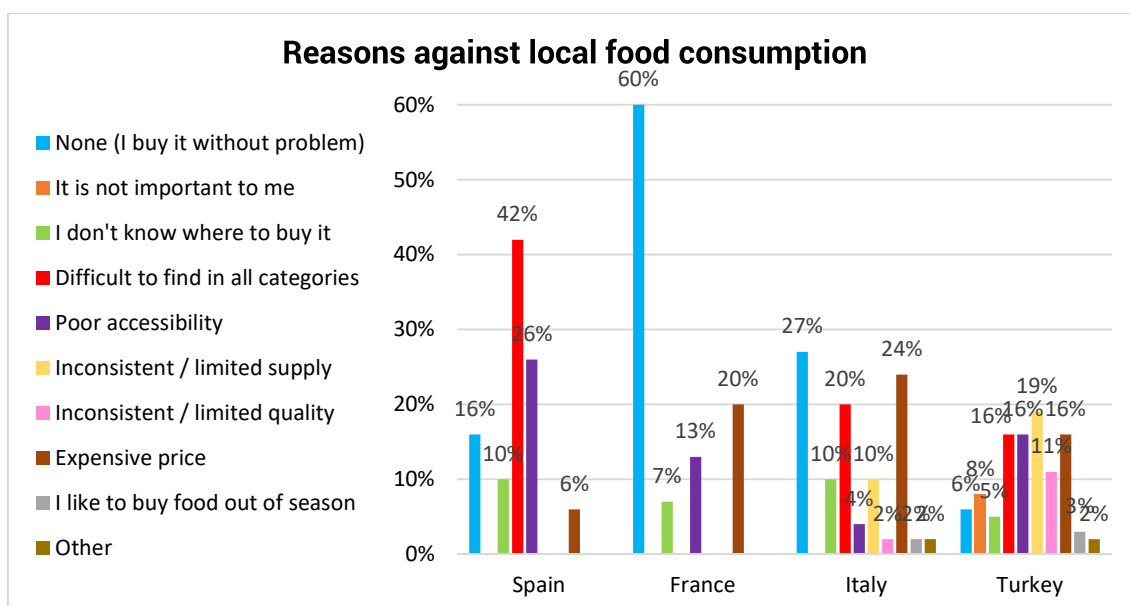


*Figure 53. Distribution among disadvantages for local purchase for consumers group per the European Nation*

On additional information consumers would like to know about local food production that would help them consume food, 31% ticked information on production, farming, and animals, 17% on food safety and security information, 16% information on shelf life, 13% nutrition and labeling, 10% quality control and 7% on recipes and tips (Fig. 54). All consumers agree on the majority and minority additional information to know, except in Türkiye who prefers information on food safety and security. Spain and France prefer information on food shelf life, and Italy and Türkiye prefer information about food safety (Fig. 55).

**Additional information to know**
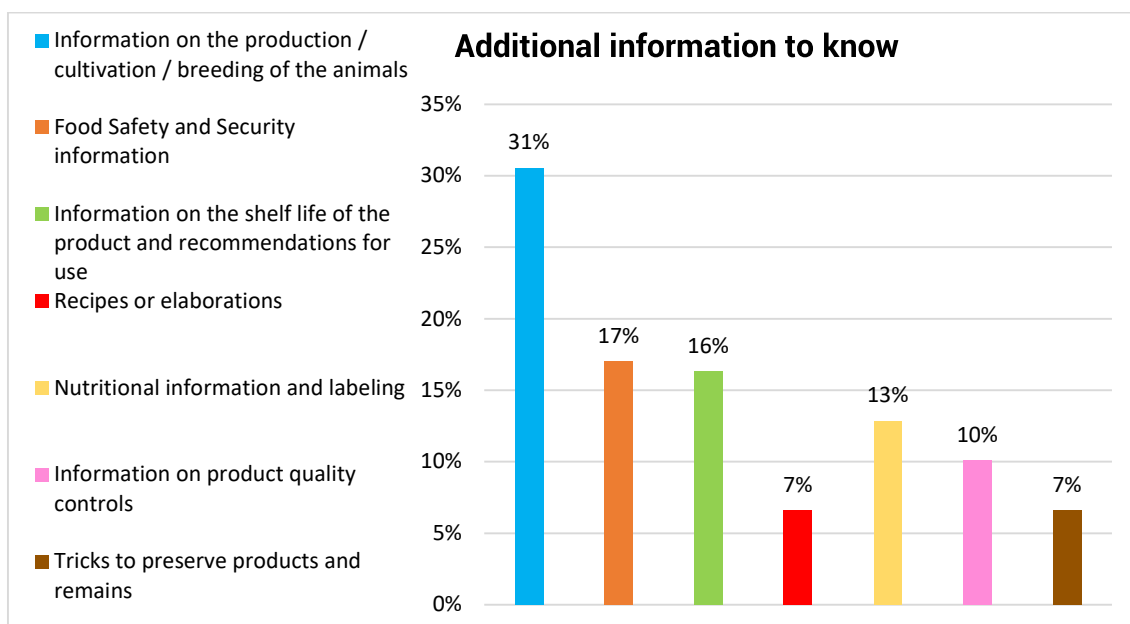


*Figure 54. Distribution of information needed about local purchases for consumer group*

**Additional information to know**

Legend:
- Information on the production / cultivation / breeding of the animals
- Food Safety and Security information
- Information on the shelf life of the product and recommendations for use
- Recipes or elaborations
- Nutritional information and labeling
- Information on product quality controls
- Tricks to preserve products and remains
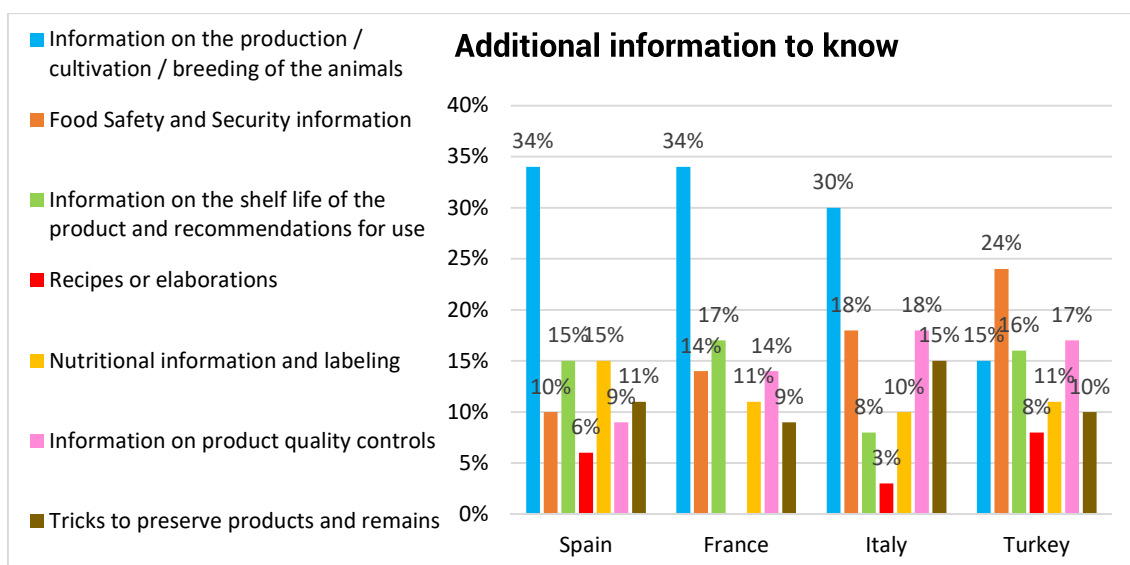
*Figure 55. Distribution of information needed about local purchases for consumer groups per European Nation*

100% of consumers agreed that local food consumption positively impacts the local economy, society, and territory.

When asked openly why the previous question, some of the reasons provided by consumers were repeated among them, so they were grouped, obtaining the following data: consumers attributed it to a lower environmental impact and all related factors, followed by the economy in a rural environment, local growth and sustainability, and product quality. (Fig. 56).



**Reasons in favour of local food consumption**

Legend:
- Less impact on the environment: less carbon footprint, pollution from transport, CO2 emissions, intermediaries, packaging...
- Protection local territory
- Sharing of profits, for producers with a higher % of added value
- Sustainability and product quality
- Economy in rural and local environment
- Local growth
- Employment, positive social impact
- Connection beetwen consumer and farmer

*Figure 56. Distribution among advantages of local purchase for consumers group per European Nation*

The following graphic shows the number of responses and more detail (Fig. 57).



**Reasons in favour of local food consumption**

Legend:
- Less impact on the environment: less carbon footprint, pollution from transport, $CO_2$ emissions, intermediaries, packaging...
- Maintenance of the territory and care of ecosystems and landscape
- Smaller scale production and maintenance of the productive fabric
- Support for local farmers and livestock breeders
- Sharing of profits, for producers with a higher % of added value
- Sustainability and product quality
- Traditions
- Economy in rural and local environment
- Settlement of rural population, avoidance of depopulation
- Employment, positive social impact
- Recovery of local varieties adapted to the climate
- Lower transport costs
- Future of food
- Preserves the origin
- Avoid economic cycle of capitalisation
- Growth of rural areas, rural activity and sustainability
- Investment in the territory itself, local wealth
- Connection beetwen consumer and farmer

Values: 28, 6, 7, 11, 9, 14, 1, 10, 11, 13, 1, 1, 2, 1, 2, 5, 4, 2

*Figure 57. Distribution among advantages of local purchase for consumer group*

Finally, consumers were asked about their knowledge of initiatives to promote local food consumption, where 52% were aware of these ideas (Fig. 58), all countries being relatively equal except France, where they are not aware of these initiatives (Fig. 59). Specifically, some of the initiatives that 37 respondents openly shared overlapped with each other and their responses were also grouped. The most named local initiatives were the agri-food markets in the partner cities and consumer groups (by 16 and 11 respondents) (Fig. 60).

## Knowledge about initiatives releated with local food
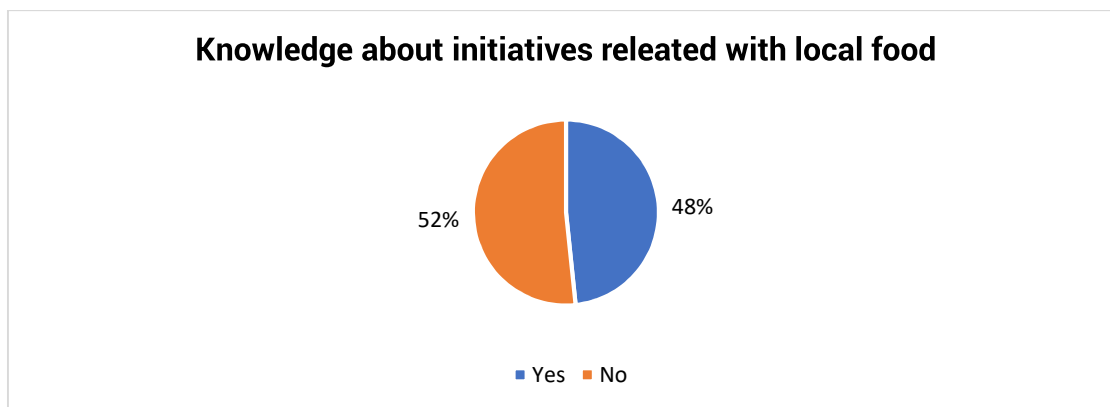


*Figure 58. Distribution among initiatives knowledge for consumer group*

## Knowledge about initiatives related with local food
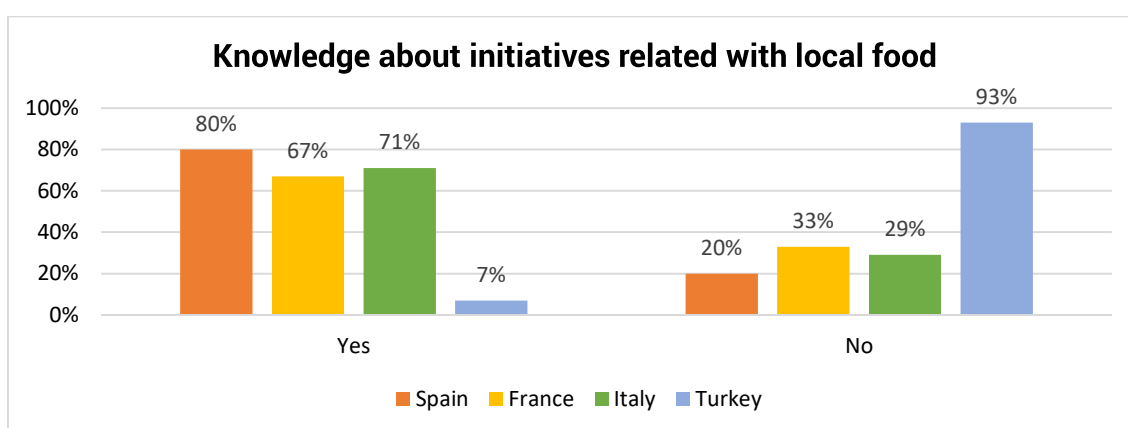


*Figure 59. Distribution among initiatives knowledge for consumers group per the European Nation*

## Initiatives for local food
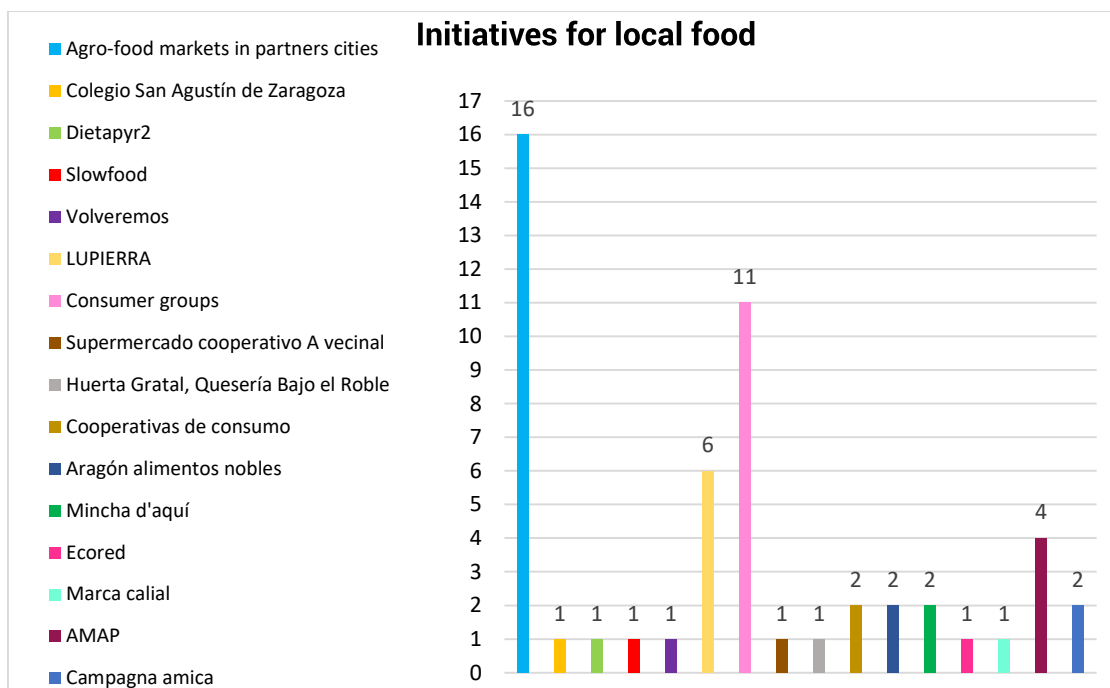


*Figure 60. Distribution among names of local initiatives for consumer group*

### 5.3. Participation in LOFT

Half of consumers were interested in participating in the Local Food Trace project and continuing to receive information (Fig. 61 and 62).
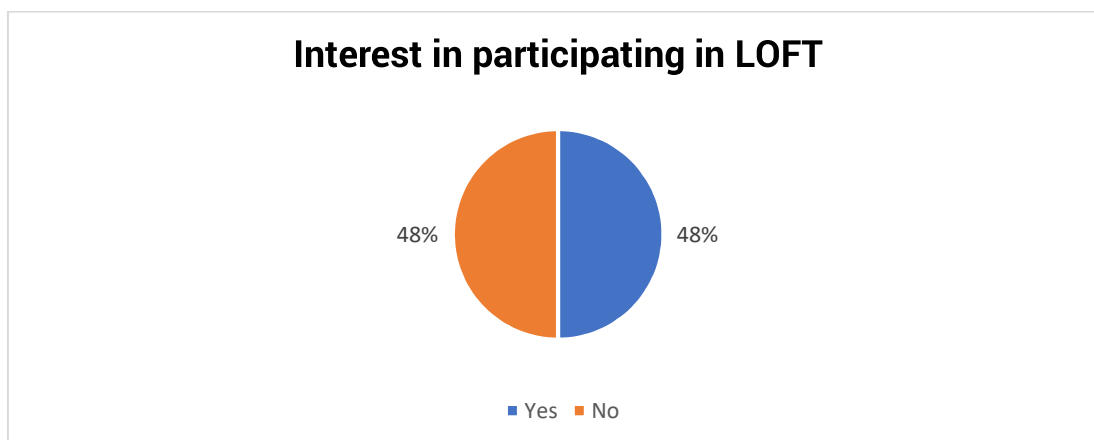


*Figure 61. LOFT participation interest distribution among the consumer's target group*
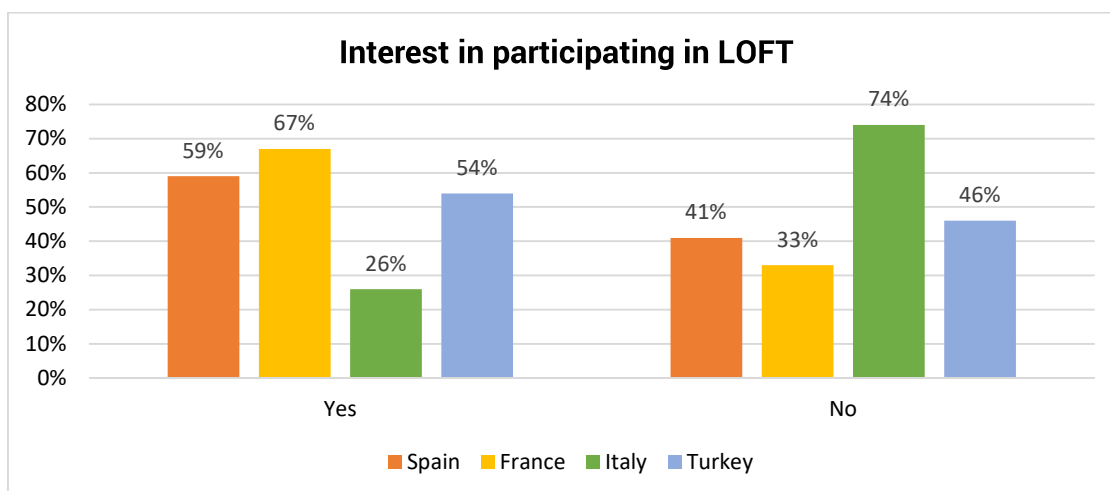


*Figure 62. LOFT participation interest distribution among consumers target group per European Nation*

## 6. LOCAL MANAGING ACTORS AND STAKEHOLDERS

### 6.1. General Data

Between local authorities and external stakeholders, a total of 40 people participated. Table 1 shows their descriptions of their institution and position.

*Table 1. Description of participating entities.*

| | Institution name | Entity Description | Respondent function |
|---|---|---|---|
| 1 | Kocaeli Metropolitan Municipality | Agricultural Services Branch Directorate | Director |
| 2 | Kocaeli Provincial Directorate of Agriculture and Forestry | Local Public Body - The institution that ensures that Food, Agriculture, and Livestock activities are carried out on behalf of the Ministry within the provincial framework | Provincial Director |
| 3 | Izmit Agricultural Credit Cooperative No. 449 | It provides production and services in the food, insurance, private pension, livestock, fertilizer, feed, seed, greenhouse and irrigation systems, logistics, licensed warehousing, and IT sectors. It is considered the most critical farmer organization in Türkiye. Cooperative No. 449 continues its activities in the İzmit district with more than 300 members. | Cooperative President |
| 4 | Izmit (District) Chamber of Agriculture | Chambers of Agriculture are established to provide professional services following the principles written in this Law, to meet the everyday needs of farmers, to facilitate their professional activities, to ensure the development of the farming profession following the general interests, to ensure honesty and trust in the relations of members of the profession with each other and with the public, to protect and observe professional discipline and ethics, to defend the professional rights and interests of those engaged in farming. | Chamber President |
| 5 | Derince (District) Chamber of Agriculture | | Chamber President |
| 6 | Kandıra (District) Chamber of Agriculture | | Chamber President |
| 7 | Kocaeli University | Faculty of Agriculture of the university | Researcher |
| 8 | Kocaeli University | Vocational Higher Education School of the University - Crop and Animal Production | Academic |
| 9 | Gebze Technical University | Biotechnology Institute of the university | Manager |
| 10 | Farmhood (Enterprise) | A Startup working on product development for food waste | Founder |

| 1 | Instituto Agroalimentario mixto de Aragón (IA2) | It is a joint university research institute (UNIZAR-CITA) focused on agri-food R&D&I+d. | Director |
|---|---|---|---|
| 2 | UNIÓN DE AGRICULTORES Y GANADEROS DE ARAGÓN | Agricultural Union in Aragon | General technical secretary |
| 3 | GOBIERNO DE ARAGÓN | Regional Administration | Head of agri-food innovation and transfer service |
| 4 | Slow Food Zaragoza | A movement to support local producers and biodiversity, considering food as an engine of change towards a healthier and more sustainable food system and a way to protect the local products of each territory. | President of the Slow Food Zaragoza Association |
| 5 | ALIANZA AGROALIMENTARIA ARAGONESA | Cooperation Group for the strategic communication of the agri-food sector | Director of communication |
| 6 | ASOCIACIÓN DE INDUSTRIAS ALIMENTARIAS DE ARAGÓN (AIAA) | A business association that brings together companies that produce food and beverages in Aragon | Manager |
| 7 | GOBIERNO DE ARAGÓN | Department of agriculture, livestock and the environment | General director of agri-food innovation and promotion |
| 8 | Centro de Investigación y Tecnología Agroalimentaria de Aragón | Public entity of the Government of Aragon | Managing director |
| 9 | Colegio Oficial de Ingenieros Agrónomos de Aragón, Navarra y País Vasco | Public law entity that brings together agronomic engineering professionals | Technical secretary/manager |
| 10 | Cooperativas Agroalimentarias Aragón | Regional Federation of agri-food cooperatives in Aragón | Head of Innovation and Sustainability |
| 11 | Centro de Transferencia Agroalimentaria | Public centre responsible for the management of training and knowledge transfer to the agricultural sector | Technical Advisor |
| 1 | CFFPPA Aix Valabre | Agricultural Training Centre | Trainer |
| 2 | Cité de l'agriculture | urban agriculture incubator | Director of training activities |
| 3 | Chambre d'agriculture des Alpes Maritimes | agricultural support organisation | Technician |
| 4 | ADEAR | technical support for agriculture | Technician |
| 5 | AgriBio 04 | Technical support for the development of organic farming | Technician |
| 6 | Mairie d'Auriol | local authority | Director of Administration |

| 7 | CFPPA Antibes | Agricultural training centre | Pedagogical director |
|---|---|---|---|
| 8 | CDE Petra Patrimonia | Agricultural incubator | Head of the development unit |
| 9 | DRAF PACA | Regional administration | Head of control administration |
| 1 | COMUNE DI BOLOGNA | PUBLIC ADMINISTRATION (PA) | PROJECTS OFFICER |
| 2 | UNIVERSITY OF BOLOGNA | UNIVERSITY | PHD STUDENT |
| 3 | UNIVERSITY OF BOLOGNA | UNIVERSITY | RESEARCHER |
| 4 | LOCAL NEIGHBORHOOD COMMUNITY | LOCAL NEIGHBORHOOD COMMUNITY | NEIGHBORHOOD MEMBER |
| 5 | ETABETA | SOCIAL COOPERATIVE | AGRICULTURE SECTOR RESPONSIBLE |
| 6 | COMUNE DI BOLOGNA | PA | NETWORK OFFICER |
| 7 | AQUAPONICS DESIGN | INNOVATIVE START-UP | CEO |
| 8 | AQUAPONICS DESIGN | INNOVATIVE START-UP | CTO |
| 9 | COMUNE DI BOLOGNA | PA | SOCIAL SERVICE OFFICER |
| 10 | COMUNE DI BOLOGNA | PA | HYGIENE OFFICER |

## 6.2. Situation of the Sector

Within the module about the sector's situation, from the experience of these managing actors and stakeholders, questions were asked about the limiting factors that prevent local producers from using digital tools. Figure 63 shows the most significant limiting factor considered was the age of farmers (23%), followed by access to digital resources (12%), rural digital infrastructure (12%), educational level of farmers (12%), cost and farmers' reluctance to change (11%) and their low interest and motivation (8%).
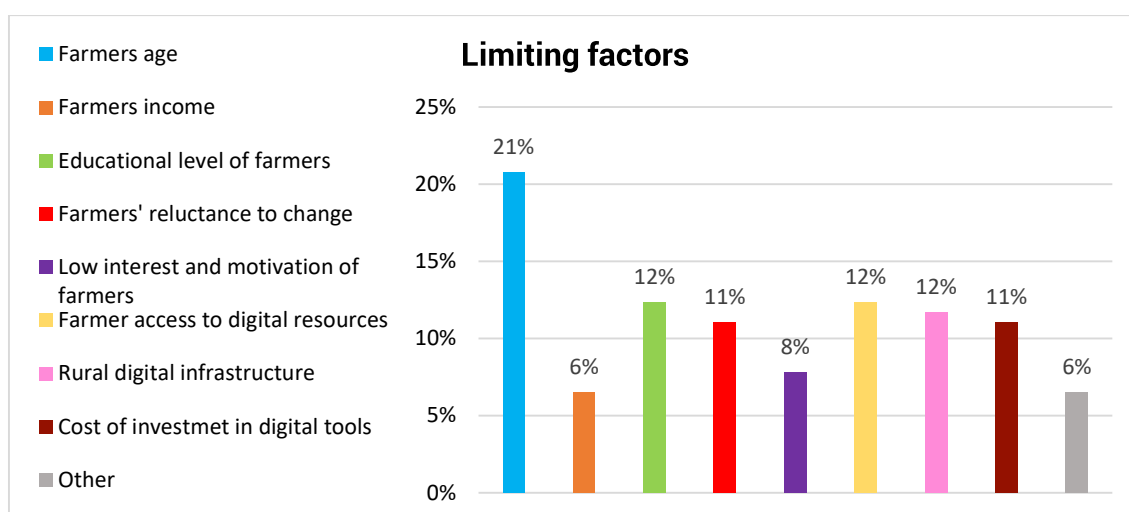


*Figure 63. Distribution among limiting factors for LFPs according to managing actors and stakeholders' group*

Differences are observed between countries (Fig. 64). However, all indeed consider the age of the LFPs to be the most significant limiting factor except France, which considers access to digital sources, Spain considers rural digital infrastructure and the educational level of farmers as highly regarded by Italy and Türkiye.
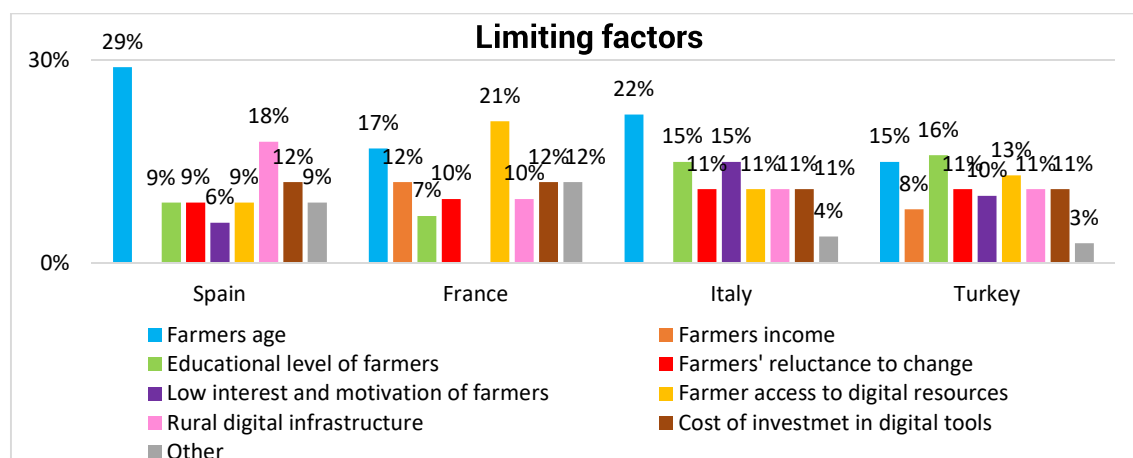


Figure 64. Distribution among limiting factors for LFPs according to managing actors and stakeholders' group per European Nation

While it is true that all actors and stakeholders believe that LFPs use email (75%), apps (55%), online platforms/ electronic markets (50%), they do not believe that they use intranet networks (57.5%), or online sales and use of networks (52.5%) (Fig. 65). Authorities and stakeholders of Italy and France are the ones who most believe that LFPs use digital tools and Spain and Türkiye the ones who not (Fig. 66).

Regarding digital technologies in their work, Figure 67 shows that 60% of actors and stakeholders agreed that LFPs use digital platforms for promotion and online commerce, and 52.5% think LFPs use management software and sensors and monitoring. On the other hand, 70% considered that LFPs do not use drones, geolocalizing artificial systems and automation, 67.5% traceability software, 52.5% production software and 50% hubs and intranet cooperatives. In this case, French and Spanish authorities and stakeholders are the ones who most believe that LFPs use digital technologies, and Turks and Italians are the ones who do not (Fig. 68).

There were some open comments such as: "I believe that there are examples of the use of all these technologies, but those that use them massively are a minority"; "They do not have much time to dedicate to technologies that sometimes overload their daily tasks"; "There are many types of farmers so the answers will not be concrete or adjusted to reality"; "In some cases, the degree of use is very incipient, it varies depending on the tools, mainly sensors, and management software"; "In neither case can it be generalized, the type of tools mixes concepts and technologies"; "importance of online forums and networks"; "depending on advanced technologies also depends on the scale of the operation: some use them (the big ones) and others not (the small producers)"; "The pandemic has accelerated the use of digital infrastructures and e-commerce tools, but the impact is still limited. The proximity size and direct sale in territorial contexts through the farmer's market remains the most used formula"; "Apart from a few manufacturers, the manufacturer using digital technologies is almost non-existent. Although such a potential, the number of qualified/trained manufacturers to

use these technologies is minimal."; "Our members are usually over 60 years of age. Therefore, they are fragile in the digital transformation of the producers."

## Use of digital tools in the work
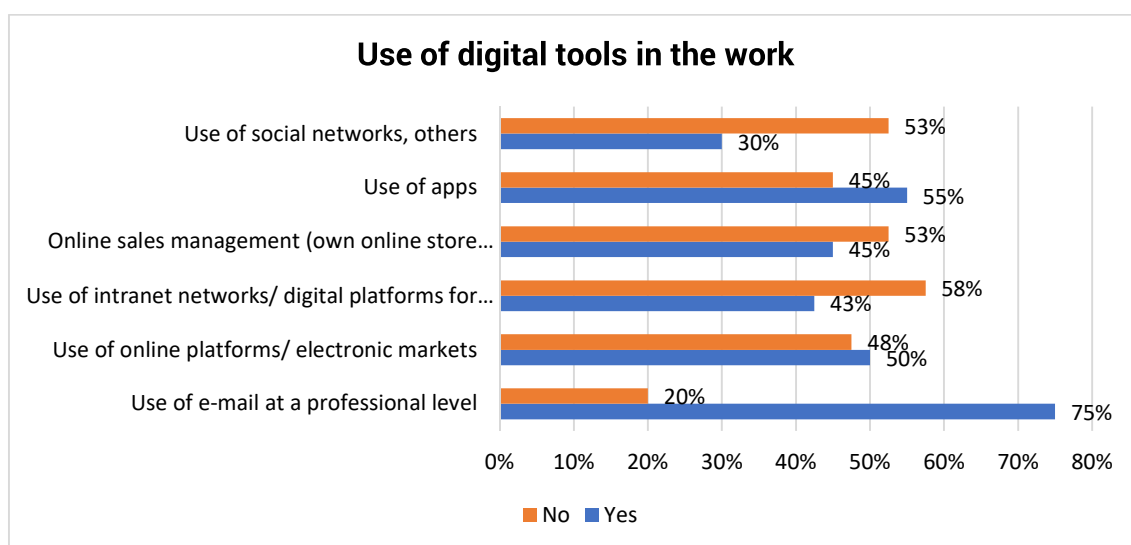


*Figure 65. Distribution among LFPs digital tools used according to managing actors and stakeholders' group*
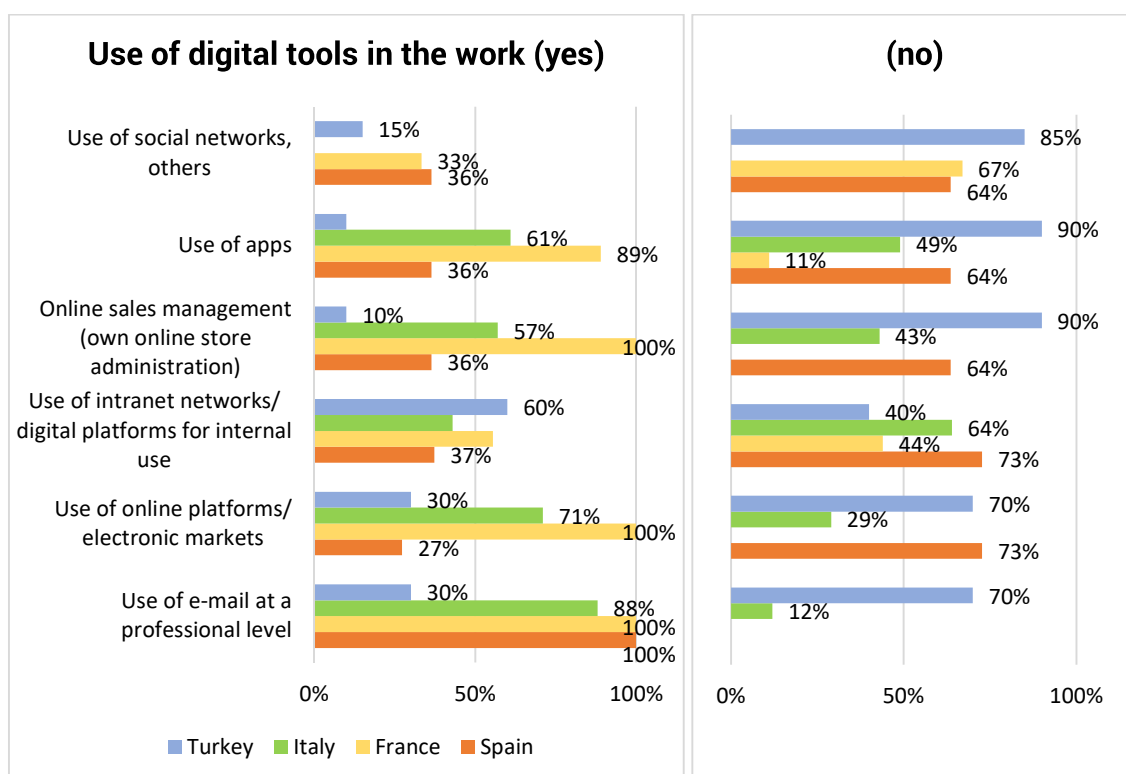


*Figure 66. Distribution among LFPs digital tools use according to managing actors and stakeholders' group per European Nation*
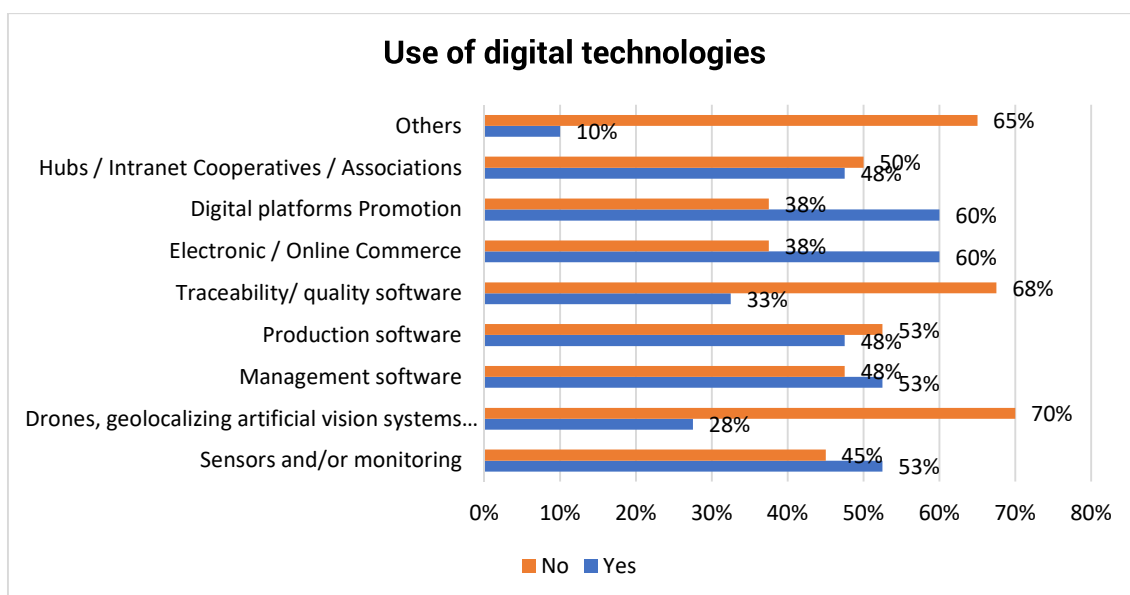
Figure 67. Distribution among LFPs digital technologies use according to managing actors and stakeholders' group
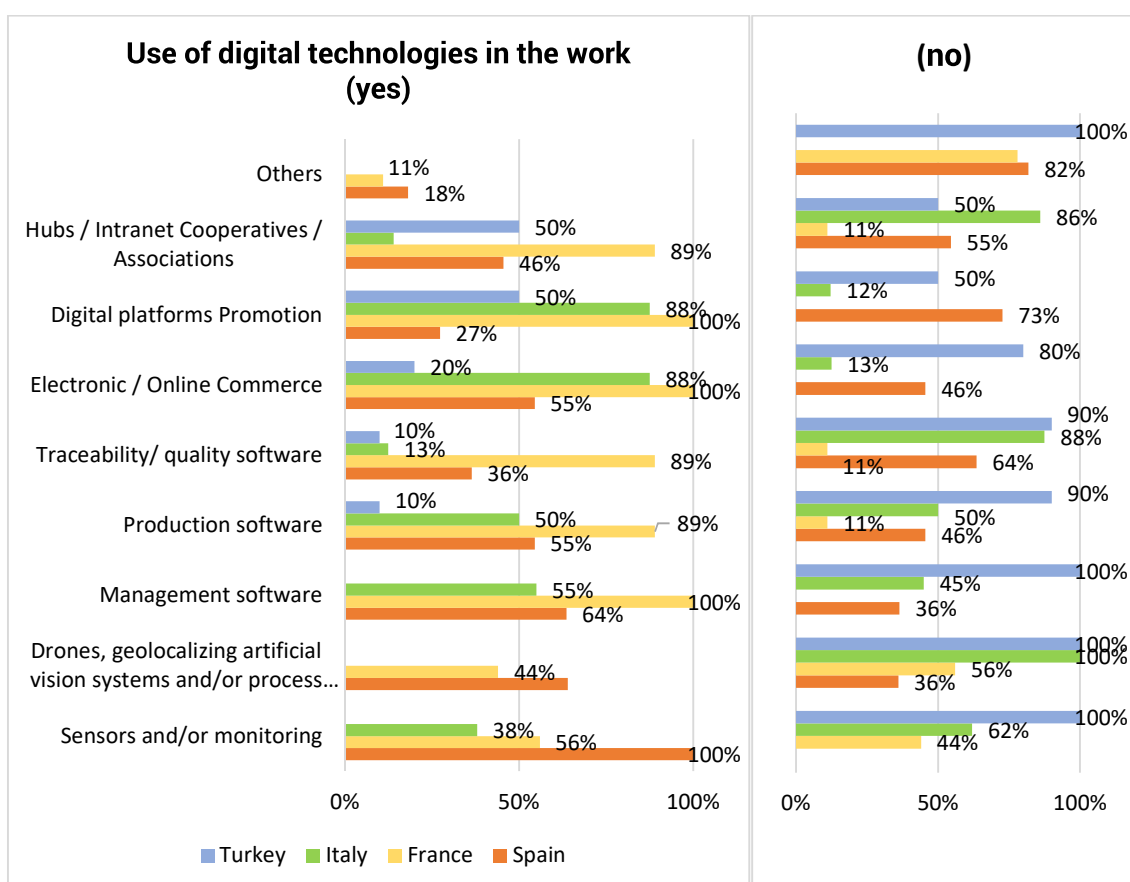


Figure 68. Distribution among LFPs digital technologies use according to managing actors and stakeholders' group per European Nation

Lastly, local authorities and stakeholders believed that the most effective ways of promoting local product consumption were training dissemination and public awareness (19%), followed by active government involvement (18%), social initiatives and business models (15%), and technological innovation in the sector (11%) (Fig. 69).



*Figure 69. Ways to promote local food consumption distribution according to managing actors and stakeholders' target group*

Although results are indeed very balanced, in each country a majority was obtained, being: in Spain the involvement of governments, in France public awareness and training of local food production, as in Italy, and Türkiye technological innovation in production (Fig. 70)



*Figure 70. Ways to promote local food consumption distribution according to managing actors and stakeholders target group per European Nation*

## 6.3. Digitalization Needs

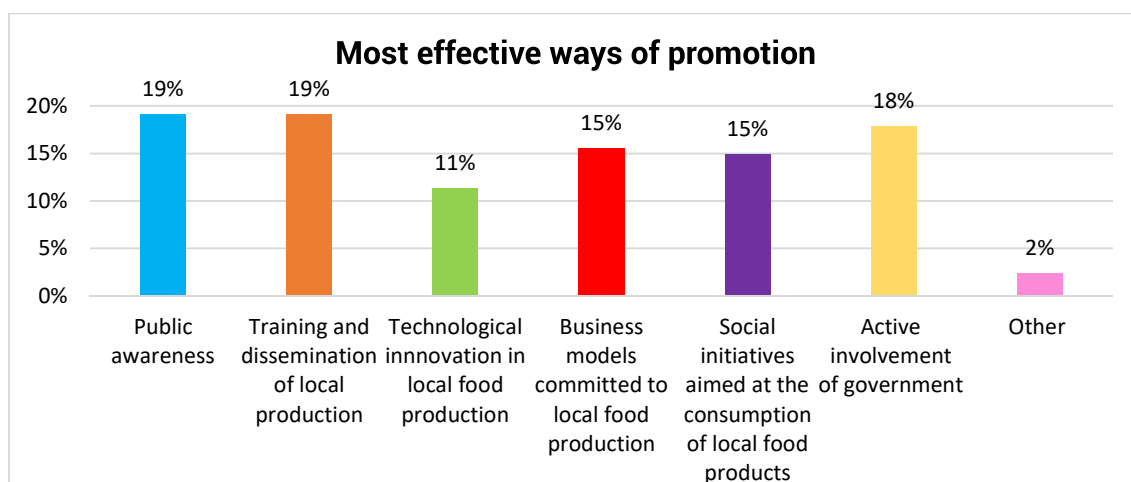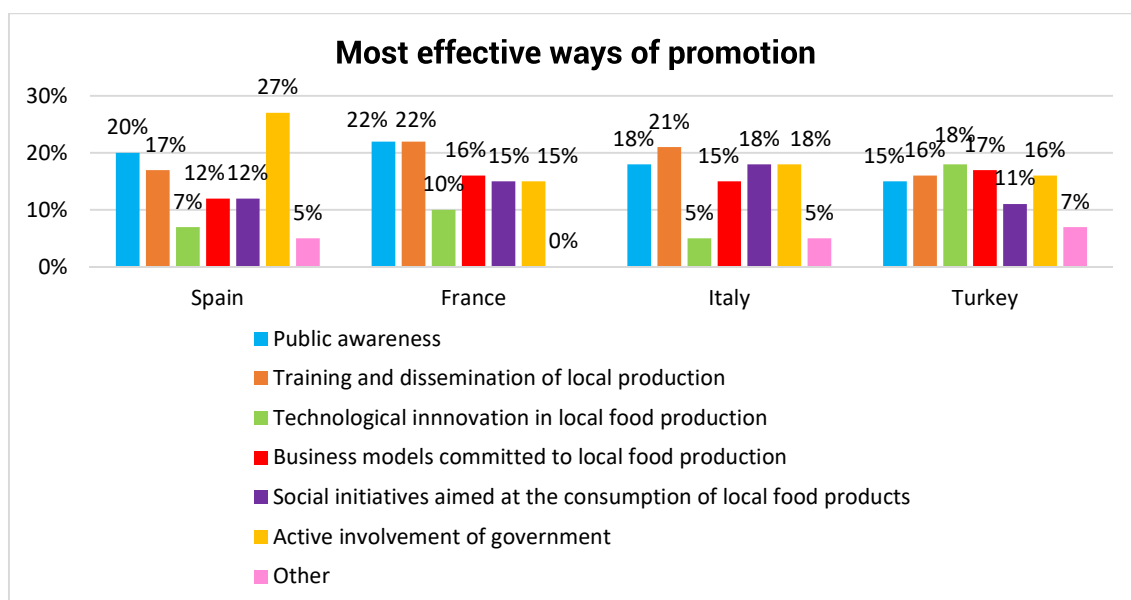In the last module on digitization needs, management actors and stakeholders answered that the topics on which LFPs need to receive training were 26 % online sales and marketing and innovative agricultural technologies, with 23 % quality management tools and 22% traceability tools, and 3% on other topics (Fig. 71) where they openly said: "BI business intelligence" "It is difficult to establish recommendations since it depends on the starting point of each company and the objectives it wants to achieve or where it wants to take its differentiation in the market" "If it is with the objective pursued in the project, training would probably be necessary in all of them, but if it is for a more traditional production, it would be necessary to focus more on the first one." As seen in Figure 72, each country prefers a topic but with little difference.

**Digital technologies training**

| Category | Value |
|---|---|
| Other | 3% |
| Online sales and online marketing (electronic / online commerce, promotion of digital platforms,…) | 26% |
| Quality management tools (follow -up tools, certification) | 23% |
| Traceability tools (Blockchain, QR codes, etc.) | 22% |
| Intelligent agricultural technologies (sensors, drones, geolocators, automation, production software,…) | 26% |

*Figure 71. Digital technologies training distribution among managing actors and stakeholders target group*

**Digital technologies training**

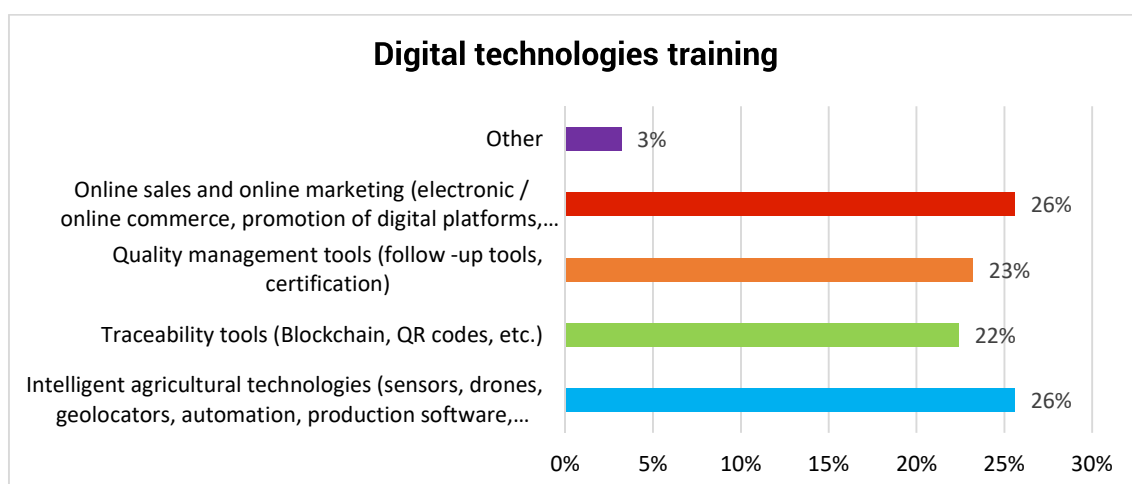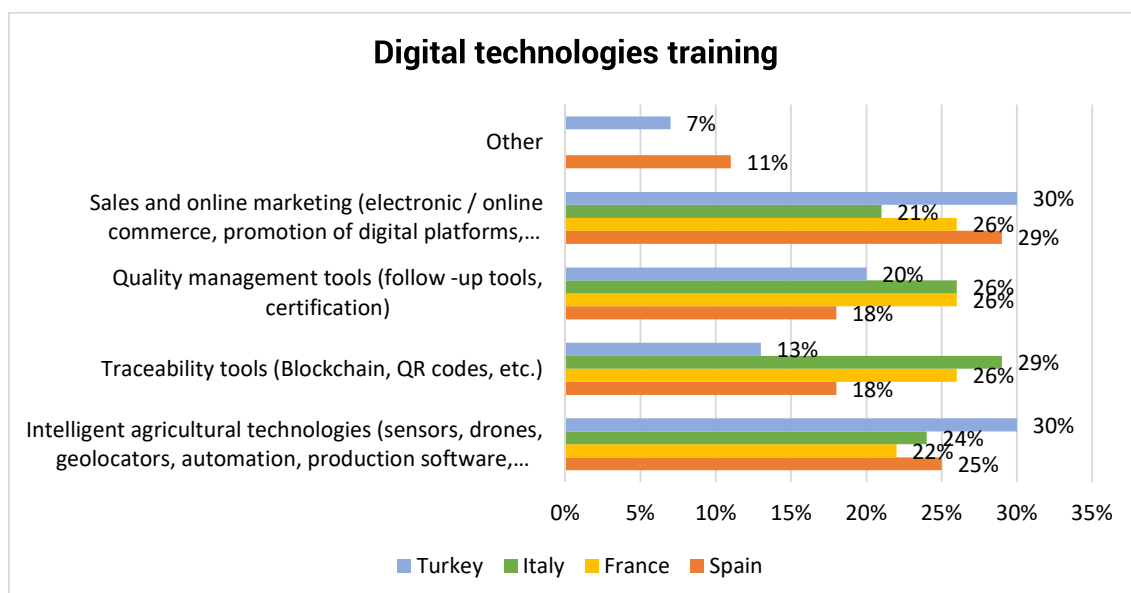| Category | Turkey | Italy | France | Spain |
|---|---|---|---|---|
| Other | 7% | | | 11% |
| Sales and online marketing (electronic / online commerce, promotion of digital platforms,…) | 30% | 21% | 26% | 29% |
| Quality management tools (follow -up tools, certification) | 20% | 26% | 26% | 18% |
| Traceability tools (Blockchain, QR codes, etc.) | 13% | 29% | 26% | 18% |
| Intelligent agricultural technologies (sensors, drones, geolocators, automation, production software,…) | 30% | 24% | 22% | 25% |

*Figure 72. Digital technologies training distribution among managing actors and stakeholders target group*

For learning and training formats, 22% of the majority of stakeholders agreed that face-to-face events, such as seminars, workshops, etc., were most appropriate, followed by online educational tools at 17%, 16% one-on-one conversations and visual support materials, and 14% hybrid learning opportunities. The formats they considered least appropriate were a mobile educational app 10%, self-learning, and others (3%) (Fig. 73).

The responses within "other formats" were: "Visits to different centers (farms, orchards, oil mills, wineries...) to know and evaluate the different experiences carried out by other producers in their area and outside it." "I insist you do not. You can generalize. What is a farmer today?". "In matters that can be complex, such as digitization, we believe that face-to-face training is better." "Producers have little time for the indoors." "Individual reading and researching habits are fragile." "Considering their condition, one-to-one training will be more useful." "Activities are the most effective methods in which especially good sample people describe the works and show the benefit they see as evidence."

The absolute majority learning format of face-to-face events only coincides with a relative majority in Spain, while in France, they prefer online, combined formats and mobile apps; in Italy, face-to-face conversations, and in Türkiye, they also prefer visual materials (Fig. 74).



*Figure 73. Learning formats distribution among managing actors and stakeholders target group*
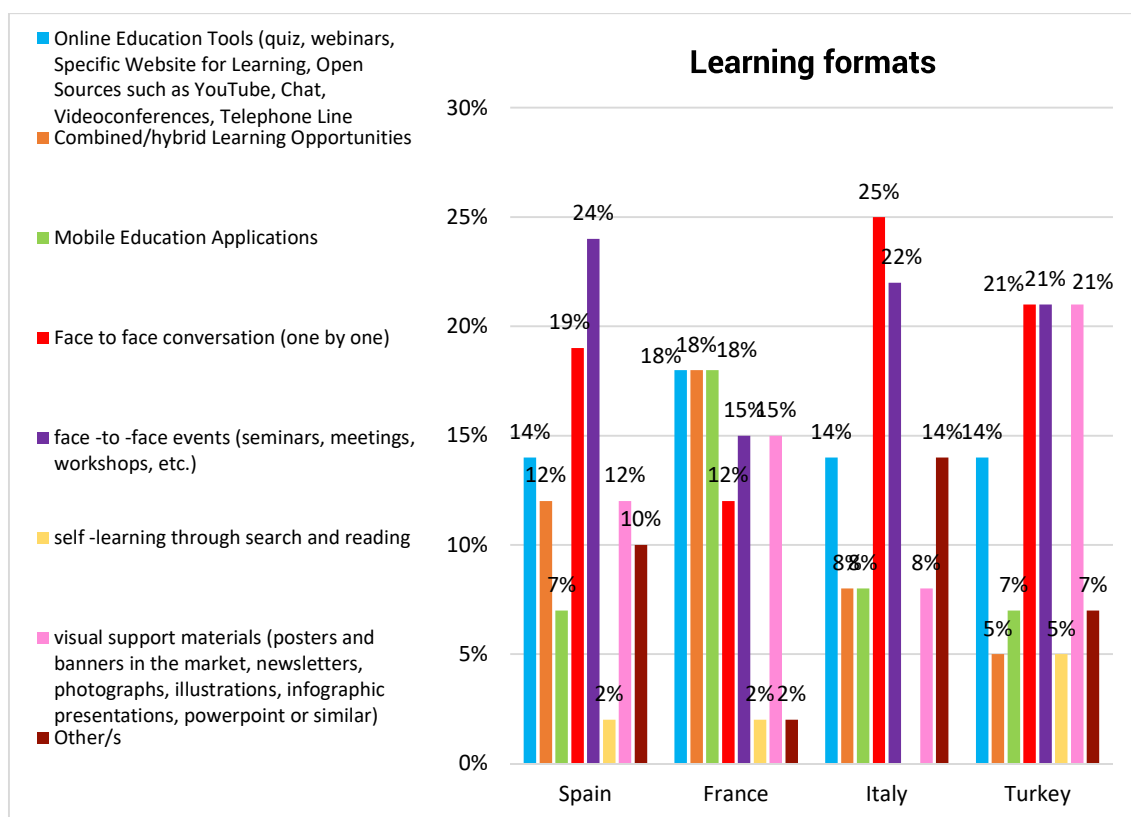
*Figure 74. Learning formats distribution among managing actors and stakeholders target group per European Nation*

When asked what they believe to be the primary training needs for local food producers, all the issues proposed were equally important. 13% considered the digital transformation of the LFP's business and technical knowledge about crop production, 11% sustainability, traceability and food safety and promotion and marketing, 10% labeling and certification, business development and legislation, and 9% responsible production and consumption (Fig. 75).

Within "other needs," the responses were: "BI (Business Intelligence) tools" and "Training should be evolutionary, that is, cover specific needs at the beginning to expand its coverage towards more strategic issues."

Again, in each country, there are different opinions, with the digital transformation of the business being considered a necessity in Spain, in Italy the knowledge in production, and in Türkiye the label and certification. In France, the needs were estimated to be more distributed (Fig. 76).

**Training needs**

- ■ Sustainability: Ecological transition and becoming resilient in food production against climate change
- ■ Technical knowledge about crop production (pest management, fertilization, water management, climate control etc., innovative methods like soilless systems or indoor farming)
- ■ Digital transformation of their business
- ■ Responsible production and consumption
- ■ Traceability and food safety
- ■ Promotion and marketing
- ■ Labeling and certification
- ■ Legislation (EU level, national, regional and local regulations about food production)
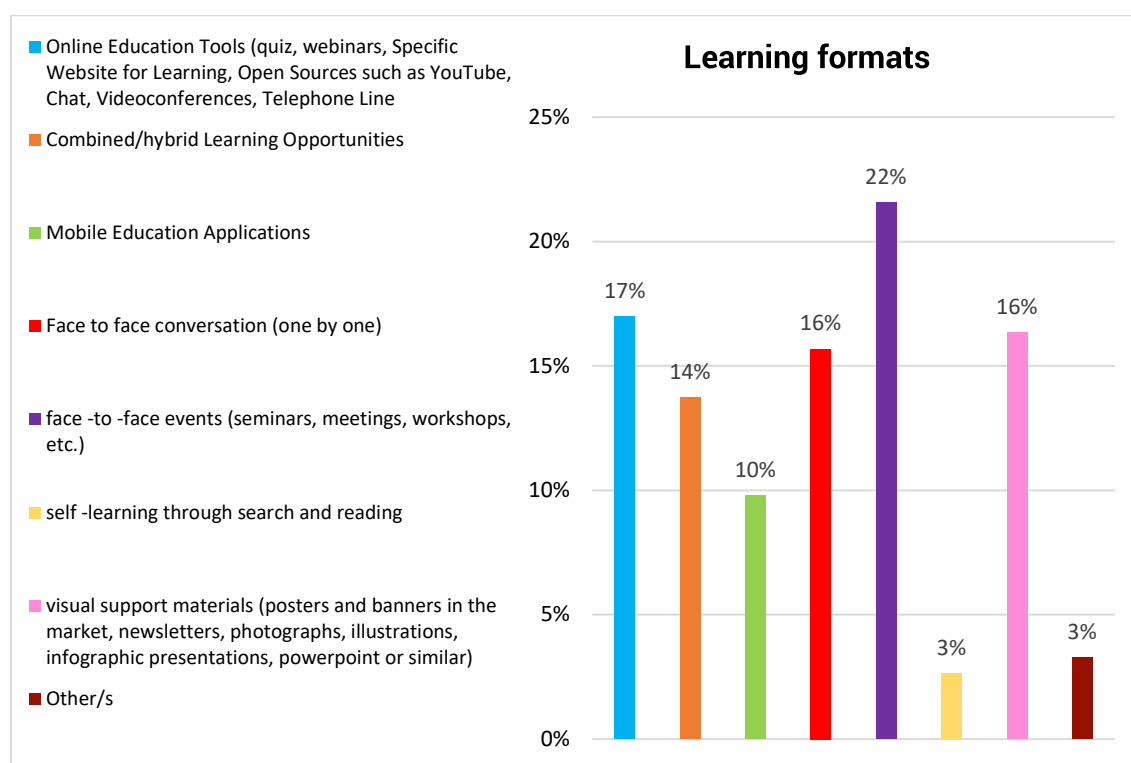- ■ Business development and planning
- ■ Other

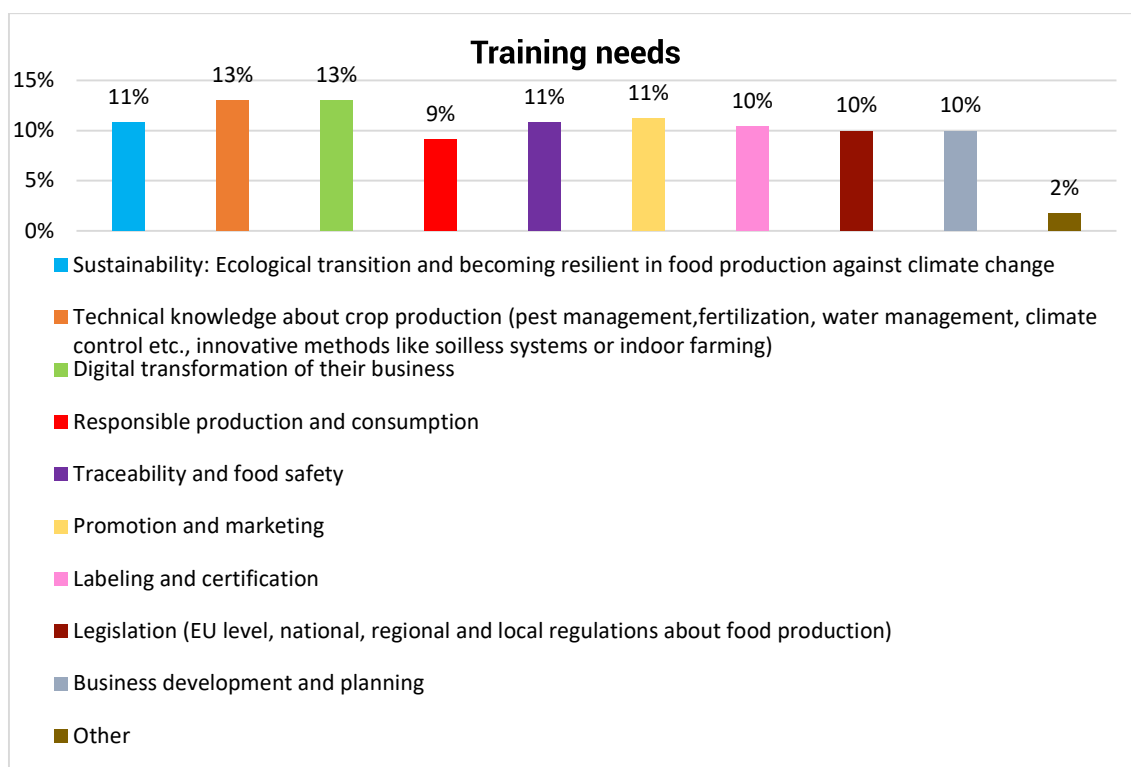*Figure 75. Training needs distribution among managing actors and stakeholders' target group*
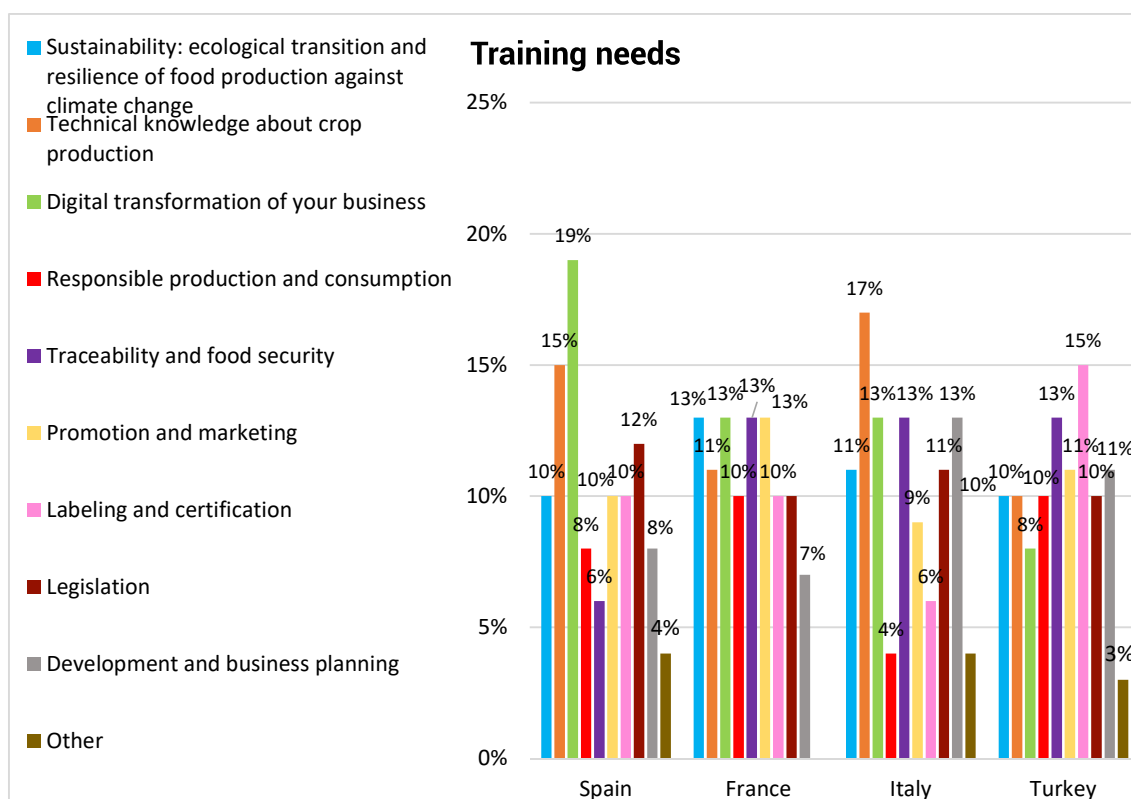


*Figure 76. Training needs distribution among managing actors and stakeholders target group per European Nation*

Regarding the impact of digital tools in the agri-food sector, according to their experience, 25% answered that it impacted the economic aspect, 23% technological, 22% marketing, 17% social, and 13% responded that it impacted the educational aspect (Fig. 77 and 78).
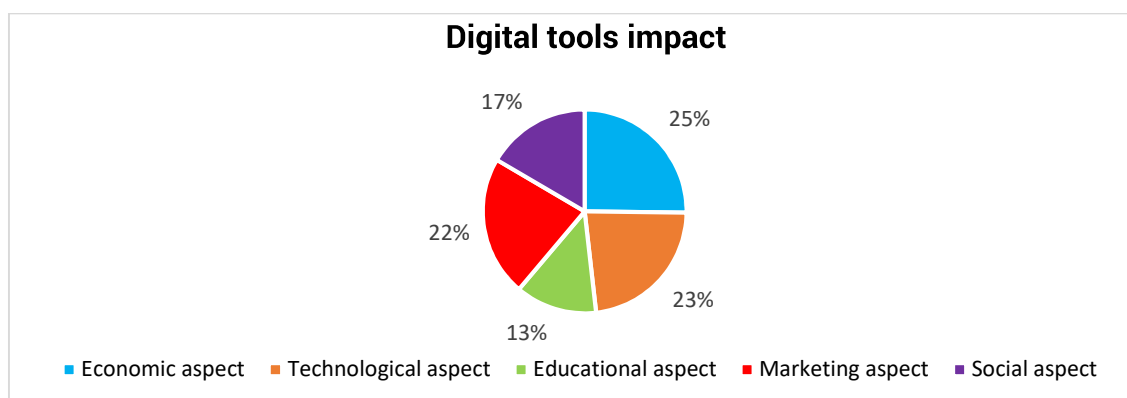


Figure 77. Digital tools impact distribution among managing actors and stakeholders' target group
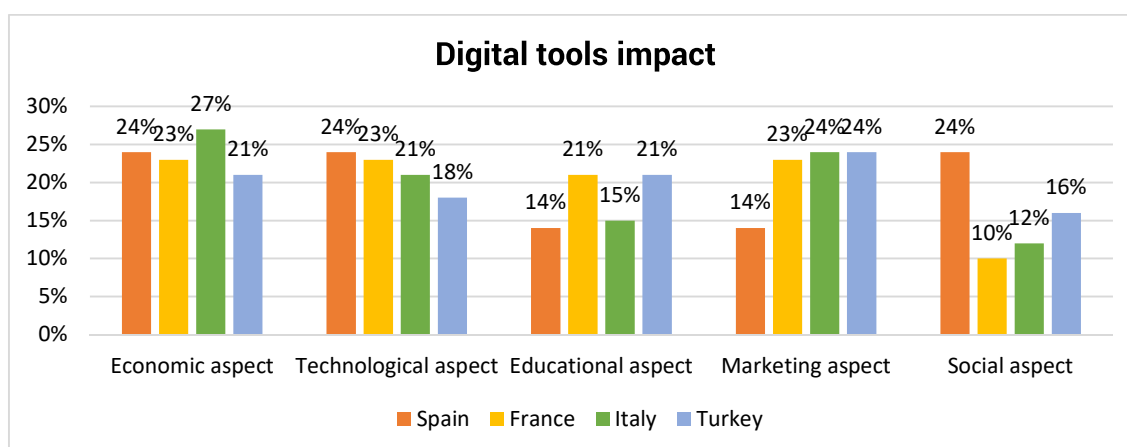


Figure 78. Digital tools impact distribution among managing actors and stakeholders target group per European Nation

When asked for examples they knew of any good practices to promote local food production and consumption, they replied:

- In Spain:

"Knowledge from childhood of the characteristic foods of each area, both of plant and animal origin. It would be convenient to introduce a food subject from kindergarten but with continuity until the institutes."

"The practices that we know are focused on local consumption as a panacea, and we consider that these should not be exclusively the messages. Therefore, we cannot recommend any."

"Our Aragón Alimentos Nobles campaign. What you see is".

"Many initiatives should be carried out with large chains to make local production highly visible. Alcampo and Carrefour have had interesting initiatives in Aragon in this regard".

"Creation of agricultural cooperatives of various kinds to gain visibility, training, and depth through the agglutination of supply."

-   In France:

"Association for the promotion of peasant agriculture"; "City of Agriculture,"; "Welcome to the farm,"; "AMAP"; "Producer night markets".

-   In Italy:

"Local markets"; "Tasting events."

"In some European countries, a city-level food council has been established; I believe it is an interesting experience. The direct involvement of local communities (including informal subjects) and the assignees of urban gardens can be an element of strength".

-   In Türkiye:

"Women's cooperatives are willing in local production"; "Good Trust Platform."

"The Digital Agriculture Platform (Coditap) project was implemented by Kocaeli Metropolitan Municipality. Working in Cooperation with the Provincial Directorate of Agriculture. Promotion and production activities of marked products by taking geographical workshops (Kandıra Powder Pepper, Candidate Watermelon, Candira Hindi, Manda Yogurt, etc.)".

"In recent years, the number of branches of Agricultural Credit Coop Markets has increased in recent years to market and generate income. In these markets, both manufacturers have the chance to market the product. Also, the number of local product vehicles was reduced to meet with the end consumer directly. Kocaeli Metropolitan Municipality İlknur Altıbağ Contact. Medical aromatic chief".

"1. Farge Organik - Fethiye Village (Mahallesi); 2. Akpa Agriculture and Livestock Organic Milk Production Akmeşe Village; 3. Sümeyye Gergerlioğlu Lavender Production and processing (oil, production, etc.). 4. CARRASLAN BROILLER ETLİK Chicken Breeding Kozluca Neighborhood; 5. Hilmi İmamoğlu, Cattle Meat Production Facility - Hakkaniye Village; 6. Hakan Oruç - Coverage Greenhouse Production; 7. Sedat Acar - Fruit Production Walnut Yeniköy Başiskele".

"Orçun Maviş - Milk and Dairy Products use digital marketing; there is a sale through the trendy application. There are also various sales points in the center of Izmit".

## 6.4. Participation in LOFT

Finally, 85% of actors and stakeholders were interested in participating in the Local Food Trace project (Fig. 79 and 80).



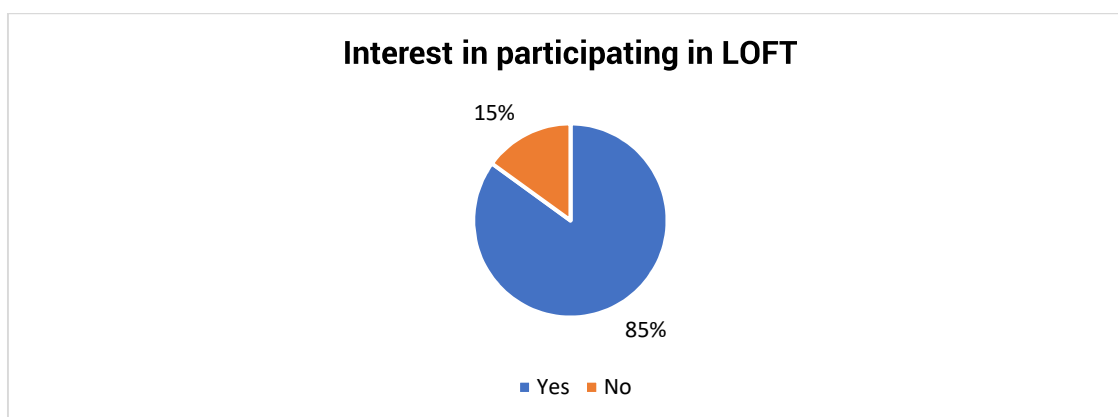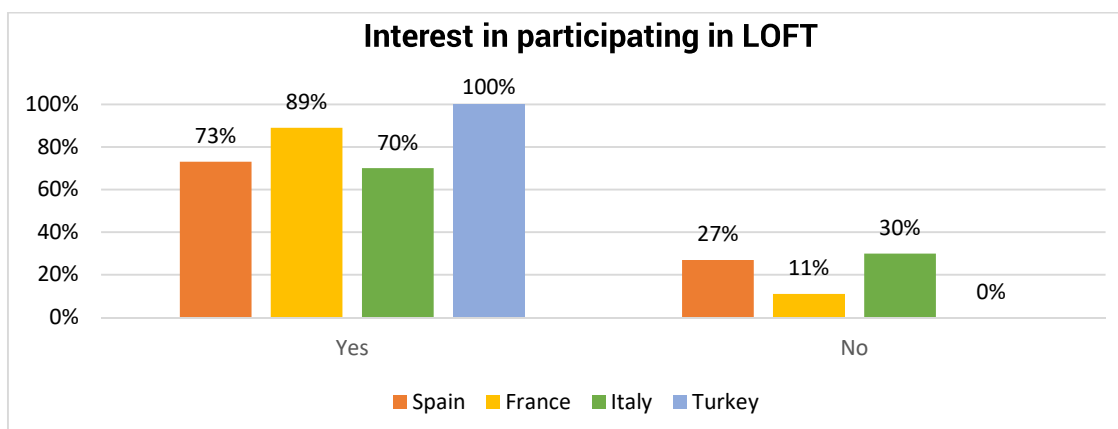*Figure 79. LOFT participation interest distribution among local actors and stakeholders target group*



*Figure 80. LOFT participation interest distribution among local actors and stakeholders target group per European Nation*

## 7. DISCUSSION AND CONCLUSIONS

Although it is difficult to draw clear and definitive trends, given the small statistical sample and the wide variety of responses, the surveys carried out have revealed a positive trend. Although different results were obtained in each country, common conclusions are presented, and it has made it possible to identify a series of work areas for the development of the LOFT project.

- *For digital tools:*

Overall, authorities/stakeholders think that LFPs use a lot more digital tools than they do.

In Spain, local actors know LFP's email and social network habits, and in the disuse of intranet networks, they wrongly assume they use apps and do not use online platforms, e-commerce, or their own store.

In Italy, local actors correctly identified LFPs' email usage. Still, they differed with the LFPs by mistakenly believing that they use apps, social networks, e-commerce, and online when this is not the case.

In Türkiye, while there is common opinion about the lack of app use by both groups of participants, there seems to be an illusion among stakeholders and managers about the use of email; 70% of the LFP group stated that they use email in their work and 30% that they do not, but the responses of the manager/stakeholder group were precisely the opposite of these indices. Another mismatch between the two groups' reactions is the use of online platforms/electronic market options. More than 60% of the LFP group said they do not use them, while 60% of the manager/stakeholder group thought that LFPs use these digital tools.

The general negative trend in both groups' responses can add value to the LOFT app and demonstrate that it is not a redundant application of the many used by LFPs and could have a future in the sector.

- *For digital technologies:*

In Spain and Italy, it is observed that LFPs use much less digital technologies than agents and interested parties believe; however, in Türkiye, it depends on the technology.

In Türkiye, while no group of actors/stakeholders believes that LFPs use sensors/monitoring technologies, drones, geolocation systems, etc., and management software, a slight minority of LFPs use these three digital technologies. Both groups agree on low usage of production, traceability, e-commerce, promotion, and intranet tools. For digital platforms for promotion and intranet centers, LFPs have fewer digital technologies than actors and stakeholders believe. Once again, this supports the need for training in the sector.

This aspect may be due to the clash of perceptions about the concept of LFPs since, as the figure on the number of employees of the LFPs shows, the majority of them had less than 10 employees, which means that our target group has been small producers with little food establishments. Instead, local actors and stakeholders have been able to consider companies with greater reach.

Regarding training, both groups in Spain and Türkiye value online sales and marketing to be essential, and in Türkiye, smart technologies are also necessary. In Italy, however, LFPs consider online sales and marketing more than actors and stakeholders. LFPs prefer to learn about quality management tools, while traceability tools are a higher priority for stakeholders. In contrast, LFPs prefer to learn about traceability tools in Spain, while innovative agricultural technologies are a higher priority for stakeholders. Thus, in both countries, there is a lack of interest among LFPs in intelligent technologies and an interest in tools that they see as more immediate and that facilitate their manual work. This may be because they prefer to spend their time streamlining their work.

In France, the priority given to traceability, quality, and marketing remains valid, as they are among the implications of digital development in agriculture. LOFT partners should validate these priorities and justify this choice to beneficiaries and stakeholders to avoid expectations that are not met, especially in the area of technological support for production.

In Türkiye, there were open responses, and actors/stakeholders wanted to add other training needs: "There should be at least general educational content on each of the above points. Our level of technological literacy is so low that it is not even possible to use simple digital applications. Therefore, training on general digital literacy issues should be provided before the topics above" and "Our biggest problem is market access; we are actually next to Istanbul, and our product is high quality, but we cannot reach the market directly. That is why we need a lot of digital marketing and promotional activities."

- *Learning formats*

Both groups in Spain, Italy, and Türkiye agree on online and face-to-face learning formats. However, LFPs prefer online or hybrid formats due to time of dedication and for their own organization, and interested parties prefer face-to-face meetings since they consider digital issues complex and better understood this way. In France, they also believe that the training model should be based on distance learning tools, with the possible support of online mentors/trainers. The content should focus on practical and operational aspects (this point was not raised in the survey but came up several times in the face-to-face and telephone interviews).

- *Training needs and topics*

Finally, training needs and topics are diverse and repeated. In Spain, Italy, and Türkiye, both groups agree on some training needs for LFP but differ on others. In Spain, both consider that the most necessary thing to train is the digital transformation of their business. However, LFPs prefer to be taught in traceability, food safety, and sustainability, and managing agents believe that LFPs should be taught in production knowledge. In Italy, LFPs prefer to be trained in technical knowledge, responsible consumption and production, and sustainability, and local actors believe it is more necessary to be taught in technical knowledge. In Türkiye, both agree on the need for training in almost all topics. In France, traceability and quality are less of a priority for producers, who prefer issues of sustainability and digital transformation of the business. Still, they correspond to regulatory guidelines, increasingly present, and to consumer expectations.

In overall conclusion:

- The surveys could reveal a positive trend of interest among the three target audiences, LFP, consumers, and authorities, in the digitalization of the sector and a general acceptance and support of the LOFT project.

- LFPs use much fewer digital tools and digital technologies compared to what authorities/stakeholders think they actually use. This negative trend drives the need for training in the sector and the creation of the LOFT app.

- The priority given to traceability, quality and online sales and marketing remains valid, as they are among the priority implications of digital development in agriculture. LOFT partners must validate these priorities and justify this choice to beneficiaries and interested parties to avoid expectations that are not met, especially in the field of technological support for production.

- The learning formats par excellence are online for LFP and in-person for authorities/interested parties, so online formats or hybrid formats could be appropriate to develop in the LOFT project.

- The training needs and topics are varied; the most popular are digital business transformation, traceability, and technical knowledge.

- These surveys will allow us to build a local network of participants involving producers, stakeholders, and consumers. This network can be mobilized during the content testing phases and, more broadly, for the local piloting of LOFT.

## 8. EXECUTIVE SUMMARY

**Purposes**

The first output of the project is a DATABASE to unveil the potential of local food producers (LFPs) and consumption for food safety and food security issues on a trust-based approach between the LFPs and regional consumers. Specific data to deeply examine the focus groups, the exact needs, and expectations are needed for the second output of the project, which will be a training methodology aiming at acquiring the required technical skills and knowledge of the digital transformation framework.

Therefore, in the first phase of the project, all partners will conduct specific training needs assessment studies with representatives from three focus groups at local/regional levels.

This work package is dedicated to a specific field analysis study with 3 specific objectives:

- Mapping the existing situation in local food production and consumption

- Identifying the specific educational needs of the two main target groups (LFPs and potential local consumers) as well as the views of local decision-makers (managing actors) as core stakeholders for the sustainability of the project results.

- Collecting "good examples"

A questionnaire, proposed by UNIZAR and reworked in collaboration with the partners involved in the project, was used for the primary data collection from the target groups to examine the specific needs and issues to be addressed in a particular methodology of digital training for LFPs. Each partner is expected to reach at least 15 producers, 30 consumers, and 15 local managing actors and stakeholders.

**Questionnaires**

Three questionnaires have been developed according to the target group to get as much helpful information as possible. Surveys were generally structured with closed-ended and some open-ended questions and divided into several sections. First, the LFPs' questionnaire has a personal questions section asking about age, gender, education, etc., intending to know in detail the characteristics of the interviewed persons (sample composition). The following sections assess the sector's situation regarding local food production. First, the digitalization degree, asking about the use of digital tools and technologies in LFP's work and digitalization needs, asking about training topics, learning formats, etc. These sections were standard to authorities and stakeholders' questionnaires in order to compare knowledge and opinions about training in digitalization. Finally, the consumers' questionnaire was focused mainly on consumption behaviour, whether they buy local food, what they understand by local, etc.

The partnership has fulfilled the purpose of the number of surveys since a total of 234 responses were registered. According to the target groups, the rapport is 70 from LFPs, 124 from consumers, and 39 from authorities and stakeholders, and the rapport among the partners is 75 from Spain, 44 from France, 52 from Italy, and 62 from Türkiye.

## Results

Although it is difficult to draw clear and definitive trends, given the small statistical sample and the wide variety of responses, the surveys carried out have revealed a positive trend. Even if it is true that different results were obtained in each country, common conclusions are presented, and it has made it possible to identify a series of work areas for the development of the LOFT project.

- *For digital tools:*

Authorities/stakeholders overestimate LFPs' digital tool usage. In Spain, local actors know LFPs' email and social network habits and intranet networks disuse but wrongly assume they use apps and do not use online platforms, e-commerce, or their own store. In Italy, local actors correctly identify LFPs' email usage but wrongly assume they use apps, social networks, e-commerce, and online. In Türkiye, both groups agree on LFPs' lack of app usage but disagree on email and online platforms/electronic markets usage, with stakeholders/managers being mistaken in underestimating email usage and overestimating platform markets.

The general negative trend in both groups' responses shows that the LOFT app is not redundant and could add value, having a future in the sector.

- *For digital technologies:*

LFPs use fewer digital technologies than agents/stakeholders think, except in Türkiye, where technology varies.

In Türkiye, some LFPs use sensors, drones, geolocation, and management software. At the same time, actors/stakeholders don't think so, and both groups agree on low usage of production, traceability, e-commerce, promotion, and intranet tools.

For digital platforms for promotion and intranet centres, LFPs have fewer digital technologies at their disposal than actors and stakeholders believe. This shows the need for training in the sector. The different perceptions of LFPs may stem from their size, as most are small-scale producers, while agents/stakeholders may think of larger companies. For training, both groups in Spain and Türkiye value online sales and marketing, and in Türkiye, also intelligent technologies.

In Italy, LFPs consider online sales and marketing more than agents/stakeholders, who prefer traceability tools, as opposed to LFPs, who prefer management tools. In Spain, LFPs prefer traceability tools, while agents/stakeholders prefer intelligent technologies. LFPs are less interested in innovative technologies and more in tools that simplify their work.

In France, traceability, quality, and marketing are still priorities for digital development in agriculture. LOFT partners should confirm these priorities and explain their choices to beneficiaries and stakeholders to avoid unmet expectations, especially regarding production technologies. Some agents/stakeholders in Türkiye also suggested general digital literacy training and digital marketing and promotion activities to improve their market access.

- *Learning formats*

Both groups in Spain, Italy, and Türkiye agree on online and face-to-face learning formats, but LFPs favor online or hybrid ones for convenience. In contrast, interested parties favor face-to-face ones for clarity. In France, they also prefer distance learning tools with online mentors/trainers. The content should be practical and operational.

- *Training needs and topics*

Training needs and topics are diverse and repeated. In Spain, Italy, and Türkiye, both groups agree on some training needs for LFP but differ on others. In Spain, both value digital transformation, but LFPs also want traceability, food safety, and sustainability, while agents prefer production knowledge for LFPs. In Italy, both value technical knowledge, but LFPs also want responsible consumption, production, as well as sustainability. In Türkiye, both agree on the need for training in almost all topics. Producers prioritize sustainability and digital transformation in France, while traceability and quality match regulations and consumers.

**In overall conclusion:**

- The surveys could reveal a positive trend of interest among the three target audiences, LFP, consumers, and authorities, in the digitalization of the sector and a general acceptance and support of the LOFT project.

- LFPs use much fewer digital tools and digital technologies compared to what authorities/stakeholders think they actually use. This negative trend drives the need for training in the sector and the creation of the LOFT app.

- The priority given to traceability, quality and online sales and marketing remains valid, as they are among the priority implications of digital development in agriculture. LOFT partners must validate these priorities and justify this choice to beneficiaries and interested parties to avoid expectations that are not met, especially in the field of technological support for production.

- The learning formats par excellence are online for LFP and in-person for authorities/interested parties, so online formats or hybrid formats could be appropriate to develop in the LOFT project.

- The training needs and topics are varied; the most popular are digital business transformation, traceability, and technical knowledge.

- These surveys will allow us to build a local network of participants involving producers, stakeholders, and consumers. This network can be mobilized during the content testing phases and, more broadly, for the local piloting of LOFT.