WildFood Project

Eating the wild: Improving the value-chain of Mediterranean Wild Food Products (WFP)

Comparison of relevant business models of the wild food sector

Lead by: **SFI**
Type of document: **Deliverable 4.3**
Due date of deliverable: 31.01.2023
Dissemination level: Public

Authors

Anže Japelj. Slovenian Forestry Institute

Reference

Japelj, A. (2022). Report on comparison of relevant BM of the WFP sector. WildFood Project. PRIMA Foundation programme.

Legal Disclaimer

Executive summary

This study on currently practiced business models in wild food product (WFP) sector is conceptually based on the triple layered business model canvas (TBLMC), which is a common tool for investigation of business models. A questionnaire was developed and designed in an on-line format to facilitate the administration. Questions were defined in a way to cover all three elements (layers) of TBLMC (economic, environmental, and social), and additionally questions to cover issues related to price generation (WP1) and certification (WP3) were included in the questionnaire as well. The survey was open for respondents from Dec. 2021 until Feb. 2022, while 130 completed responses were obtained. Questionnaires were translated into Portuguese, Spanish, Italian, Tunisian and Slovenian and promoted nationally via project partners to reach more relevant stakeholders. The survey covered 7 wild food products: acorns, black truffle, myrtle, pennyroyal, pine nuts, rosemary, and summer truffle. Simple descriptive statistics was used to analyse the data. Results indicate that WFP sector might be very heterogenous in terms of size of companies and the level of professionalism entrepreneurs have. It is probably acceptable to say that there are also large differences among countries, whereas some (Italy, Spain, Portugal) have a stronger business sector in WFP and others (Slovenia) don't.

ERA-LEARN has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 811171

Contents

ERA-LEARN has received funding from the European Union's
Horizon 2020 research and innovation program under grant
agreement No 811171

1. Aim of comparison of business models of the wild food sector

This analysis is the first step of the T4.1 task, which is to provide a platform on creating new business models for the wild food sector, where elements of social inclusion, fair distribution of income and sustainability should be emphasized. Comparison of practiced business models is a cross-section type of data collection, where a survey was designed to capture the basic characteristics of business practices currently relevant in seven wild food products in five Mediterranean countries. The data is intended to give an insight of the *status-quo* and provide a starting point for investigating potential innovation. This is an important state-of-the-art phase, which is a key element of every comprehensive study, and is presently covered in Deliverable D4.3 of the WildFood project.

2. Business model analysis

The triple layered business model canvas (TBLMC) (see Joyce and Paquin 2016 for details) is a practical tool for coherently integrating economic, environmental, and social concerns into a holistic view of an organization's business model. The TLBMC builds on Osterwalder and Pigneur (2010) original business model canvas, a popular and widely adopted tool for supporting business model innovation by explicitly integrating environmental and social impacts through additional business model layers that align directly with the original economic-oriented canvas. All three layers with all elements included are presented in Figure 1 on the next page. When all three are combined they provide a more comprehensive and clear view on how an organization generates multiple types of value. This supports developing a more holistic insight into a business model and its systematic description, which enables innovation towards more sustainable business models. Business model innovation itself is not a part of this activity, being however a focus of WP4's next steps – especially D4.4 'Living-Lab sessions on innovative and feasible business models of the wild food sector'.

The elements of TLBMC were transformed in a set of questions relating to individual elements of all its three layers – economic, environmental, and social. We aimed to collect relevant information on current business models from a sample that was targeted at stakeholders within the value chain: producers, processors, retailers, etc. The number of questions was substantial, therefore most of them were in a single or multiple – selection format to ease the load on a respondent. The next chapter lays out the process of questionnaire design, administration, and subsequent analysis.

ERA-LEARN has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 811171

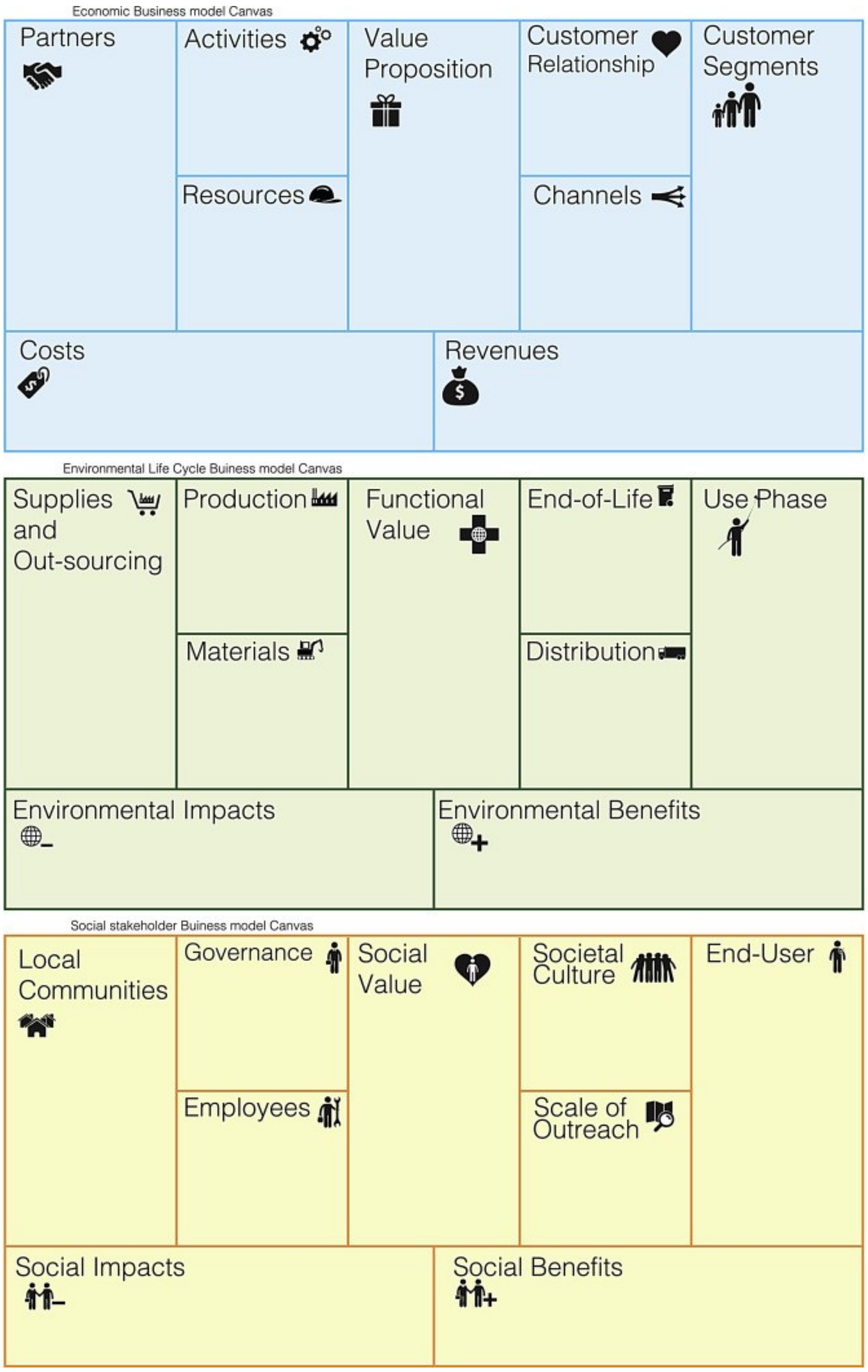


Figure 1: Triple layered business model canvas (TLBMC) according to Joyce and Paquin (2016).

3. Designing and administering the survey

Previously defined questions were set-up in three sections, reflecting the three layers of the TLBMC. Moreover, they were inserted into an on-line based questionnaire (Google docs). The questionnaire is attached as an annex to this document – the questions related to analysis of business models are in sections 3, 4, 6, 7 and 8. As mentioned above, most questions were either of single- or multiple-choice type, only few

ERA-LEARN has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 811171

were open format ones. After the initial questionnaire was set up it was tested among project partners to check for wording, clarity and efficiency of registering responses into an on-line repository. Afterwards, the questionnaire was adjusted according to the context of different wild food products, previously selected to be included in the study:

- acorn,
- black truffle,
- myrtle,
- pennyroyal,
- pine nuts,
- rosemary,
- summer truffle.

Some questions were in fact product specific and needed to be adjusted, but this refers only to the question itself so that it had clearly highlighted the product it referred to. Then, questions were translated into five languages (Portuguese, Spanish, Italian, Tunisian and Slovenian) and put on an on-line questionnaire (Google Docs). The link was distributed among the relevant stakeholders from the value chain within each country independently so that partners could use their connections and networks to reach individual producers, processors, retailers etc.

The questionnaire was composed not only of questions related to task 4.2, but two additional activities from WP1 and WP3. Questions relating to WP1 referred to the characteristics of value chains, whereas those related to WP3 focused on issues of labelling, certification and marketing. Both sections are not a part of this report and will be presented in separate deliverables.

The survey was active from Dec. of 2021 till Feb. 2022, with 130 responses obtained (Figure 2).

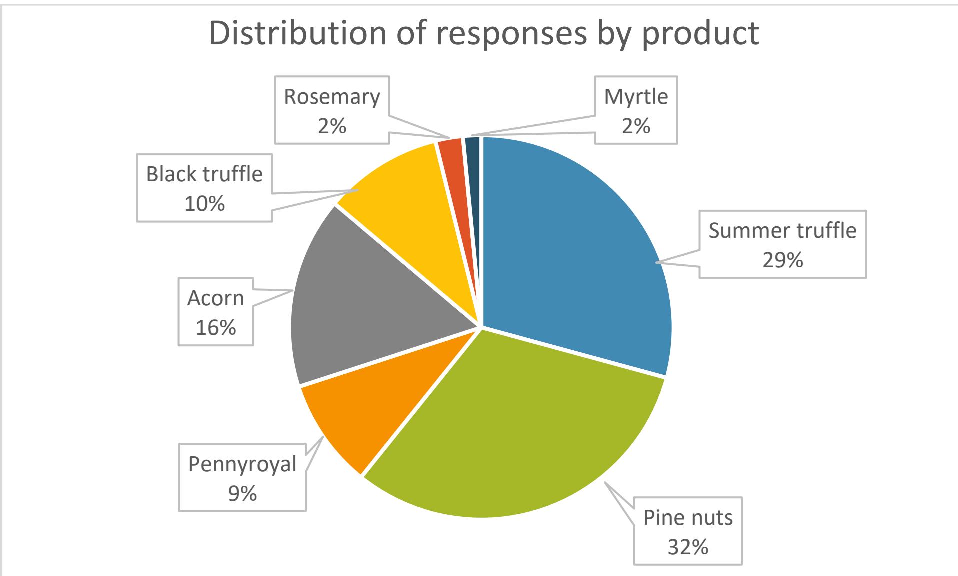


Figure 2: Percentages of survey responses by each wild food product that were collected by on-line questionnaire (N=130)

Response rate for two products, namely rosemary and myrtle (3 and 2 respectively) are relatively low (only 2%) and come from Tunisia only, while stakeholders working with summer truffle and pine nuts provided the most abundant response (29% and 32%). Distribution of responses by both wild food products and countries are given in a table below (Table 1).

ERA-LEARN has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 811171

Table 1: Percentages of survey responses by each wild food product and country that were collected by on-line questionnaire (N=130). Blank cells indicate zero responses.

	COUNTRY					
PRODUCT	Italy	Slovenia	Spain	Tunisia	Portugal	Total
Acorn					16%	16%
Black truffle			10%			10%
Mirtle				2%		2%
Pennyroyal					9%	9%
Pine nuts	6%		13%	1%	12%	32%
Rosemary				2%		2%
Summer truffle	25%	4%				29%
Total	32%	4%	23%	5%	37%	100%

After the collection of responses ended, data were checked for inconsistencies, missing values were replaced with data validated by national respondents and responses were coded in a systematic way (partners from UNIPD). Complete database was also made available on the on-line storage platform (Google Drive) so that each project partner could do analysis of sections that it provided. This database holds data on other two activities related to WP1 and WP3.

Statistical analysis of responses involved simple calculations of frequencies and, in some cases, cross-tabulations. This phase did not require more advanced methods. The results of this analysis are given in the following chapter and are presented as a summary for each question. Those are structured in four thematic sections that cover basic information on the enterprise and then all three layers of the TLCBM.

4. State-of-the-art of business models in wild food sector

4.1 Economic components of business

The first set of questions was dedicated to investigating how WFP-related businesses are run and which are the most common practices. This involves all stakeholders within the value chain (Figure 1), from producers to end-users – attempting to set a clearer picture of the sector.

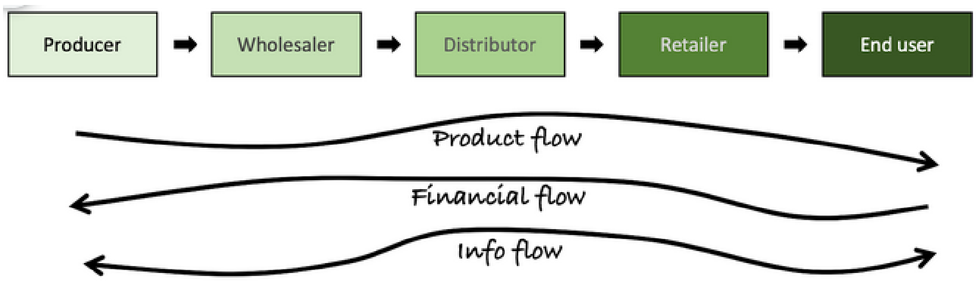


Figure 3: Illustration of the value chain within the WFP sector, with indication of individual stakeholders and direction of types of flows (ref.: Enrico Vidale).

The share of self-produced WFPs

Most of those involved in black truffles also produce the products themselves (Figure 4), while most of those involved in pine nuts do not produce the products they sell. Those dealing with rosemary or myrtle either produce it entirely or in part.

ERA-LEARN has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 811171

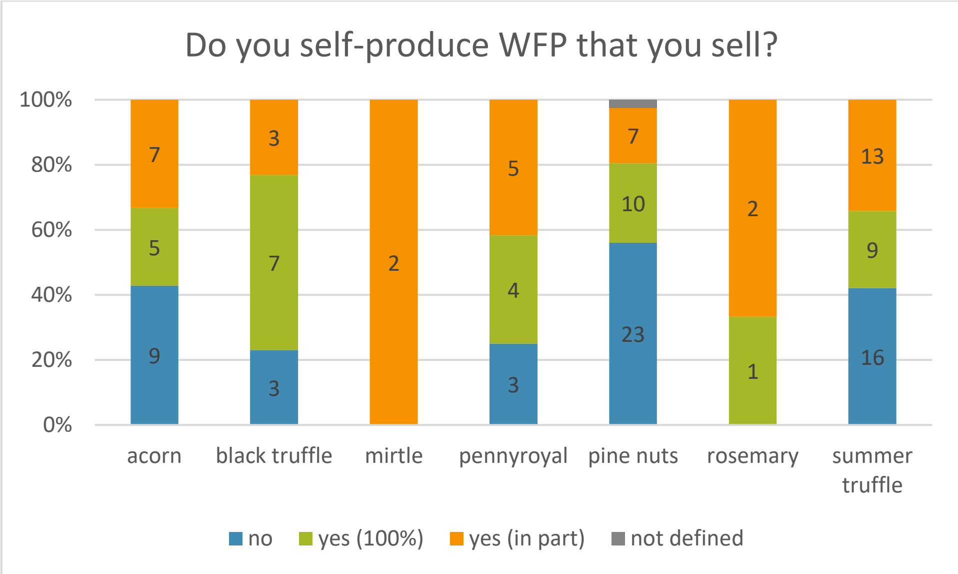


Figure 4: The percentages (and absolute numbers) of those who either self-produce entirely, only in part or not at all.

Time distribution within a company

A complete production & commercialization cycle was divided into seven different activities, among which a company can distribute its time. The time allocation can help understand the company's priorities and possibly indicate potential business niches for other entrepreneurs, even emerging ones. The activities:

- producing (growing and collecting in farm plantation),
- gathering (collecting in wild),
- primary (commercialization of fresh or raw material to middleman) and secondary (commercialization of processed products) wholesaling respectively,
- processing (transformation of raw material into final products),
- selling and distribution to hotels, restaurants, and catering (commercialization of raw or processed products),
- retailing to end-users (commercialization raw or processed products to end-users).

This representation is given according to each of seven WFP (Figure 5) so that similarities or differences can be spotted quicker. In our analysis, black truffle is a WFP with a relatively high share of time devoted to production on farm plantations, followed by myrtle with a high share in production while also gathering in wild. The latter is obvious for summer truffle as well. Business with rosemary is characterized by a very high share of processing – acorn and summer truffle and pennyroyal have relatively high shares of this activity as well. In terms of selling/distributing to ho.re.ca and retailing to end-users summer truffle has a distinct high share of time devoted to it, and rosemary the lowest share.

ERA-LEARN has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 811171

Figure 5: Time distribution for different production and commercialization activities a company dealing with WFP can do.

*ERA-LEARN has received funding from the European Union's
Horizon 2020 research and innovation program under grant
agreement No 811171*

The heterogeneity of WFP's customers

There is a variety of stakeholders buying WFPs from those who provide them and shares of those in the overall sales can be very different. Respondents in our survey could indicate the percentages of their product being sold to one of six categories of buyers (and an additional category of 'others'):

- private people,
- retailers,
- hotels, restaurants and catering services,
- processors,
- middlemen,
- farmers,
- (others).

Representation of results follows those six categories indicating shares of produce sold to different buyers. Black and summer truffle seem to be sold to the most diverse set of customers, as both WFPs have a relatively high share across all buyer categories. This share is especially obvious compared to other categories in cases of retailers, ho.re.ca., processors and middlemen.

ERA-LEARN has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 811171

Figure 6: Shares of individual buyer's categories to whom the WFPs are being sold

Time distribution among production and more detailed activities

Apart from a more general categorization of production activities, such as collection of WFP in the wild and its cultivation on farm plantations, respondents also indicated time allocated to different processing activities. Some of those can be species-specific and are relevant only for some WFPs, while others are widely applicable, e.g. distillation might be common for herbs (myrtle and rosemary), but nor for other products.

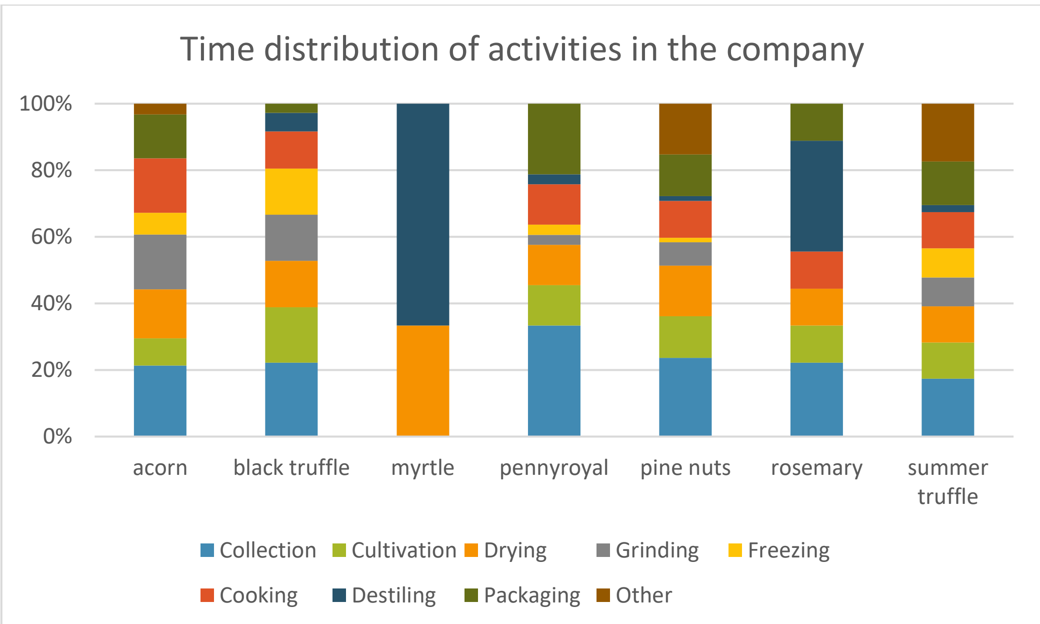


Figure 7: Time distribution for collection, cultivation, and several processing activities

ERA-LEARN has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 811171

Pennyroyal and pine nuts are products where all processing phases are implemented, with collection being the activity with the most time allocated. Moreover, collection, cultivation, drying and cooking (to some extent) seem not to be heterogeneously distributed across WFPs, while grinding, freezing and packaging are. Grinding consumes much time in case of acorn and to some extent black truffle, while it is virtually non-existent in processing herbs.

Typology of agreements

Companies or individual entrepreneurs draft different types of agreements, which define relationships – rights and responsibilities – between individual business partners, most commonly on amount, quality, and price of goods one needs to provide for the other. Agreements can take various forms, like vocal agreement, formal written contacts, or some other format. Respondents in our survey could indicate one or several types of agreement (options) they implement in their business (Figure 8). In almost two thirds, respondents are using vocal agreements, while formal contracts are used in less than half of all cases. About a tenth of all have some other sort of agreement while more than a third have explicitly stated that they do not have any type of established agreement.

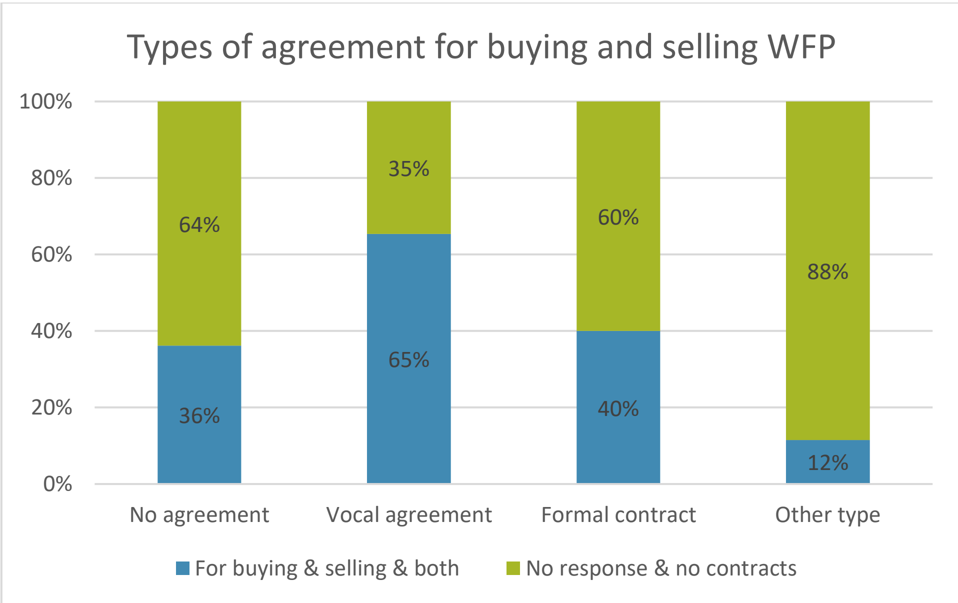


Figure 8: Existence of different types of agreements among WFP entrepreneurs (N of each bar is 130).

Approaching new customers

Looking for new market niches while trying to expand with existing products is an important part of the business model. Thus, the survey covered that aspect as well and respondents could indicate one or several ways of how they approach new contacts, customers, or even providers.

Unsurprisingly, direct contact is the most common approach, as almost three quarters of respondents choose one of three – 'for buying', 'for selling' or 'both' – relevant options. This is followed (sum of three options as well) by web search (slightly less than half), fairs & exhibitions, paper and online media advertising (around one third), person to person contact (one quarter), and way at the end, the chamber of commerce with less than a tenth of responses.

ERA-LEARN has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 811171

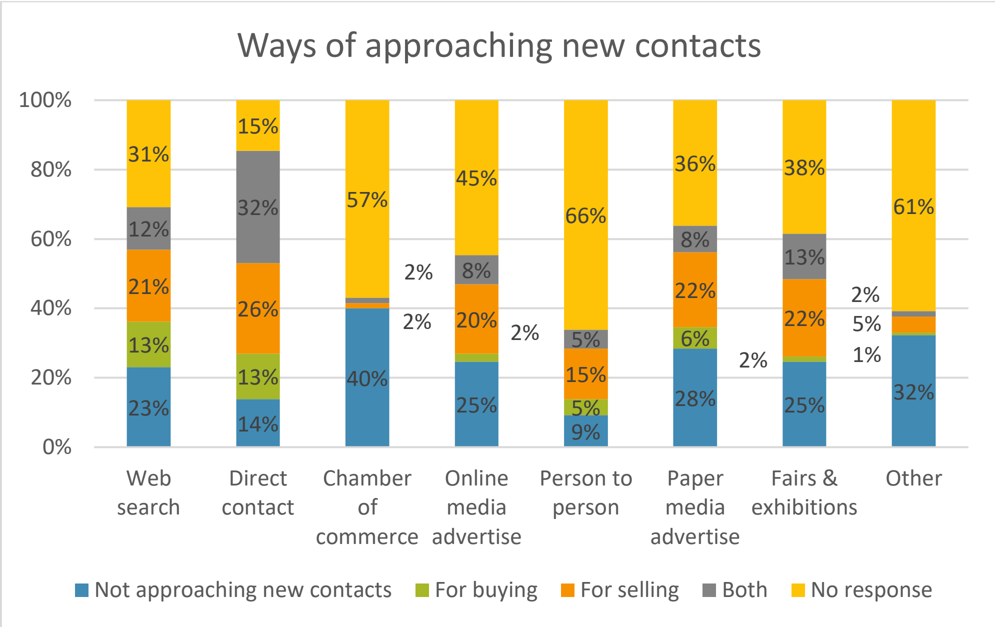


Figure 9: Use of different ways of approaching new buyers, providers, ... in WFP business (N of each bar is 130).

Marketing activities

Entrepreneurs commonly implement some or several marketing activities to attract new customers, new product niches or distribution channels. In this part respondents could indicate one or more marketing activities that they do within their business (Figure 10).

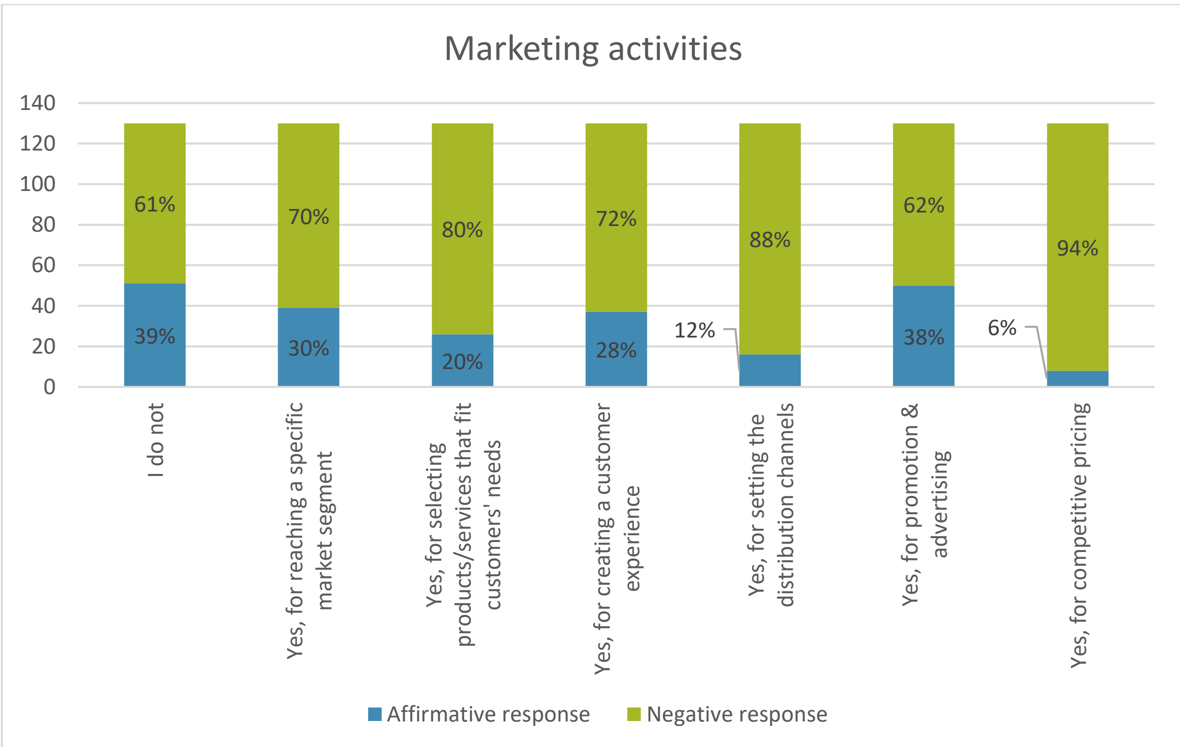


Figure 10: Commonness of different marketing activities in WFP business with an option of 'I do not do any marketing' (N of each bar is 130).

ERA-LEARN has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 811171

Almost two fifths do not implement any marketing activities, while a similar share does so for promotion & advertising. Almost a third stated that they act to reach for a specific market segment, followed by a quarter of those indicating they do so for creating a customer experience. A fifth of all respondents tries to find a product or a service best fitting to the customers' needs.

Overall, five out of six marketing activities are implemented by less than a third of respondents, which indicates this part of the business model is probably poorly developed.

Selling packaging of WFPs

WFPs can be sold in various types of packaging, however this part of the survey was focusing on the amount of product in each package and type of customer.

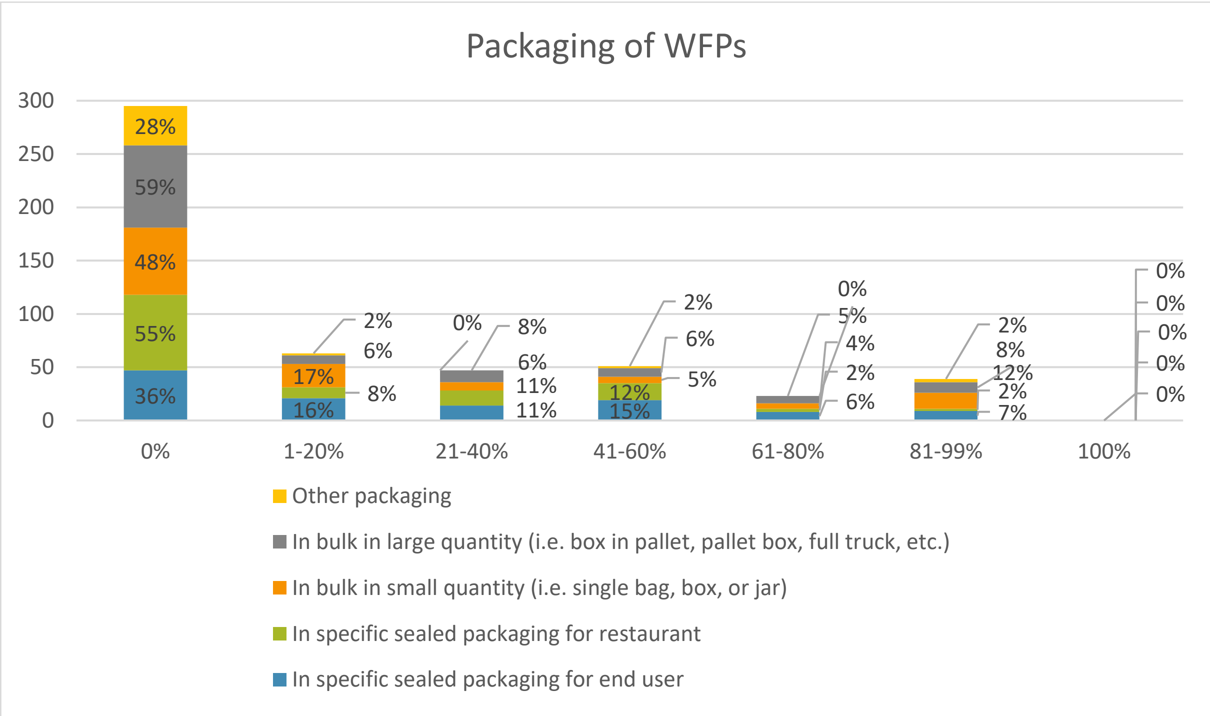


Figure 11: Distribution of responses on use of different packaging for selling WFPs (one respondent could indicate several types of packaging or opt for 'none', which is represented by 0%)

The next part of the survey we are presenting here is one of key elements of triple layer business model canvas, which specifically relates to the economic layer of the canvas. It comprises of 10 specific questions that are to provide data on pricing of WFPs, delivery channels, methods of production, which market segments it's reaching, annual turnover, export in related challenges, and supplementary services. Some questions are closely related, and in such cases, results are presented jointly.

Pricing of WFP

Setting a price on WFP has of course a significant impact on the competitiveness of an individual entrepreneur. Respondents could indicate if and how the price of their products differs from the competition. More than a third of them stated that their price is no different from others (Figure 12), while more than a quarter skipped this question. Only 6% indicated that the price is higher and 5% that the price is lower from their competition. In similar percentage (5%) respondents stated that their price can vary, and some even

ERA-LEARN has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 811171

clarified why that is – e.g., it depends on the production in wild, season (weather and such), supply from other producers, etc.

The remaining responses have a more difficult interpretation. Mind that this question was an open-format type and arbitrary responses could be given as well. Thus, we needed to categorize the remaining part of them in the most transparent and informative way. Many respondents did not define clearly how their price was different from others (lower or higher) but have instead stated the reason why it is different. For example, one tenth stated that their product was of high quality, which might suggest their price is higher. Another 2% stated that their product was of local origin, 3% that their delivery is reliable, and 2% that the packaging is special, all of which might be indicative of higher prices.

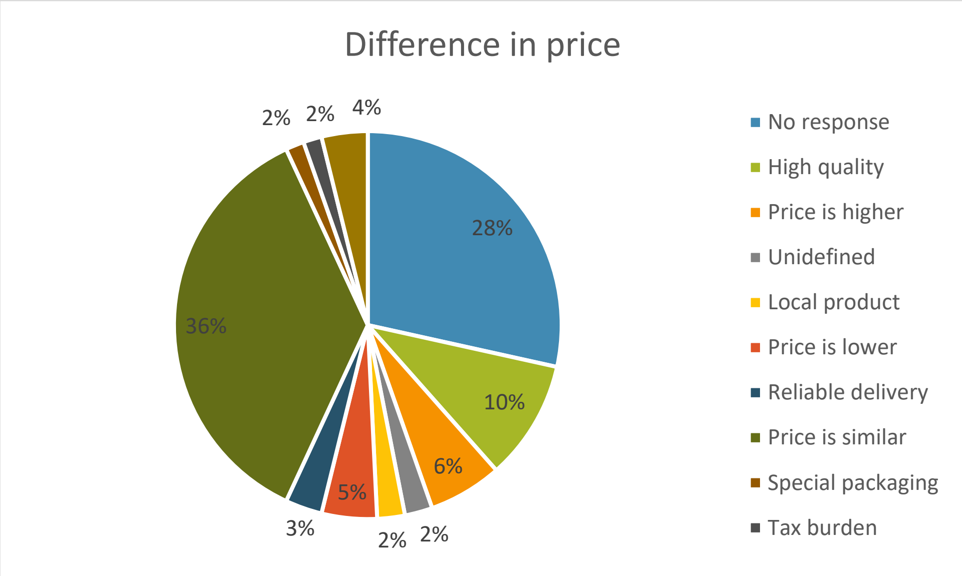


Figure 12: Variability of WFP prices and reasons if it is different (N=130).

Delivery channels

An entrepreneur can use different strategies on how it delivers its produce to customers. It can be specific packaging, amounts of produce in one delivery, or ways (direct & middlemen, speed, etc.) of delivering. As in the previous question, the majority (more than a fifth) of those who replied, stated that their delivery channels are no different from those of the rest (Figure 13). A third did not respond to this question and a bit less than a fifth gave a response that could not be categorized – as the question before, respondents could give an arbitrary answer here as well, which in some cases simply could not be interpreted in a meaningful way. Those are tagged as 'undefined'.

More than a tenth of respondents indicated that they do direct delivery of products, and it is reasonable to assume that this is in their opinion what differentiates them from the rest. Very few (4%) stated that quick delivery is what is unique in their business, even a bit less (3%) indicated that they deliver indirectly, and 2% stated that their speciality is delivery in bulk, both directly and indirectly, and another 2% that they deliver local products. 1% indicated small quantities as something valuable.

ERA-LEARN has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 811171

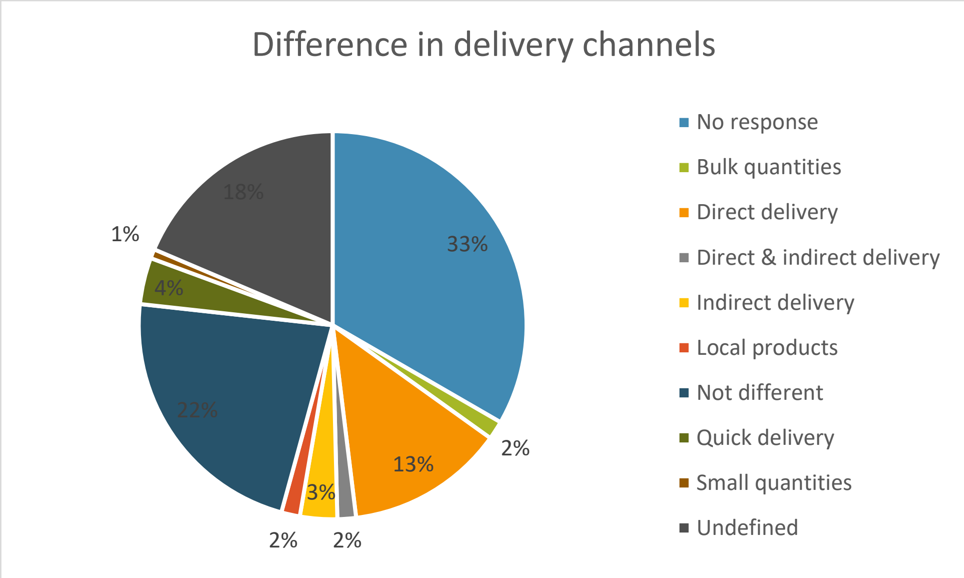


Figure 13: Variability in WFPs delivery channels (N=130).

Methods of production

Both technological advances in production techniques and keeping- traditional recipes can garner the competitive edge necessary to advance the business. In a similar manner as with the two previous questions, respondents could indicate how their methods of production and/or packaging are different from competition. First, a large part of the respondents – almost four tenths – did not provide an answer, and an additional tenth gave a response that could not be meaningfully interpreted. A fifth stated that their production/packaging was no different from other entrepreneurs, while the rest indicated a speciality – lots of different aspects with low overall occurrence among respondents. The top three consists in ecological sustainability (5%), high quality (4%), and manual production (3%). The rest had a percentage of responses of 2% and less.

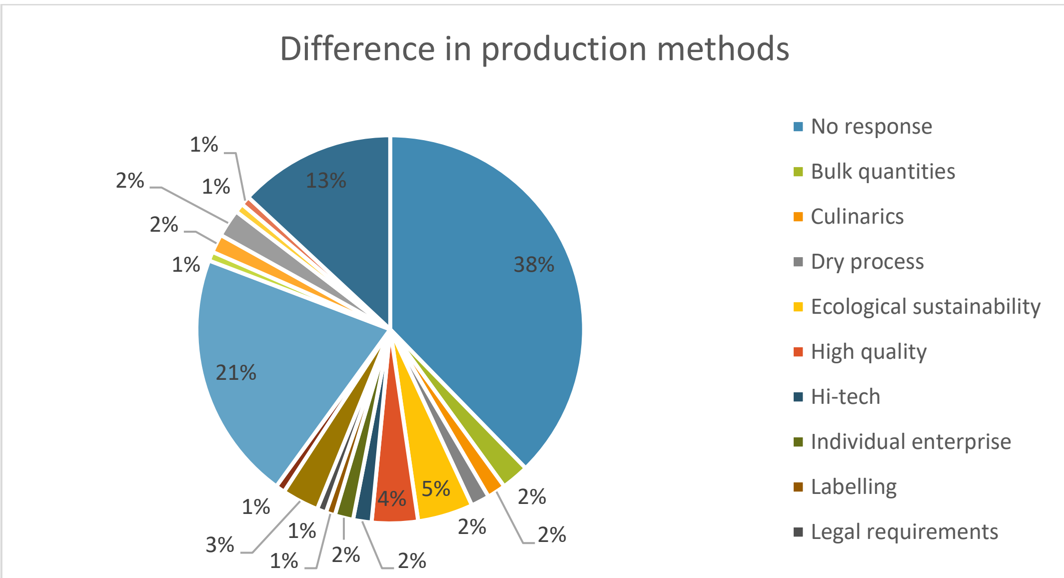


Figure 14: Variability of different production and packaging methods (N=130).

ERA-LEARN has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 811171

Market segments

The next part focused on different types of market an entrepreneur is reaching for. It can be either local market, defined by a spatial extent of municipality or region, a national-level mass market, international mass market, or even a mix of all previous types, a so called multi-sided market.

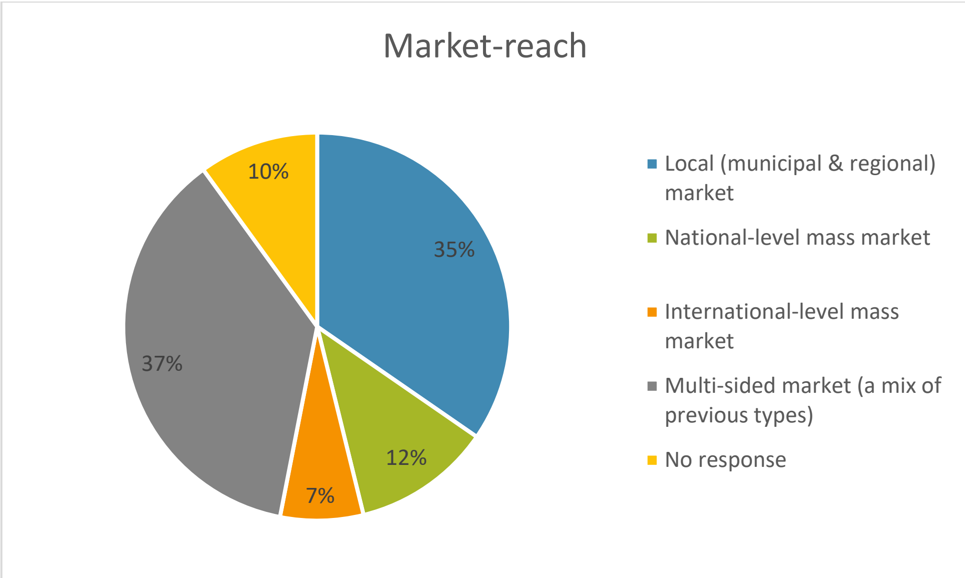


Figure 15: The heterogeneity of market reach (N=130).

Unsurprisingly, most respondents act on a mix of different markets (Figure 1), and a very similar percentage (a third) focuses on local markets only. It was not pre-defined what minimum percentages of a product one needs to sell on each type of market to be able to indicate the option of multi-sided market, so that category most likely holds some entrepreneurs with very small shares on some types and large shares on other types of market.

Other two types are somehow similarly represented – around one tenth of respondents reach for either national or international market.

Annual turnover

The annual extent of monetized flow of services and products is one of key performance indicators for entrepreneurs; however, this needs to be interpreted in the context of the economic sector. Some businesses tend to be small-scale and niche, as they would lose the customers' appeal otherwise. WFP might be one of such businesses as products and related services are closely related to natural production capacities and restricted accessibility. Thus, abundance of sole entrepreneurs is to be expected.

In our study, respondents were also asked to indicate their annual turnover. In some cases, it was reported in national currency and was converted into EUR during analysis. More than a quarter of all respondents refused to report this information (Figure 16), and a bit less than one tenth (8%) gave an unclear answer.

The largest share of respondents fit into the high-value category of having an annual turnover of more than 1 million EUR, which is especially due to large companies dealing with summer truffle (not presented in such detail in the figure). More than a third of all entrepreneurs in our study dealing with summer truffle fall into

ERA-LEARN has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 811171

this category, and additionally summer truffle-related respondents are the second largest WFP cohort in the sample. Almost surprisingly, those having a turnover of a thousand EUR or less represent less than a tenth of all respondents.

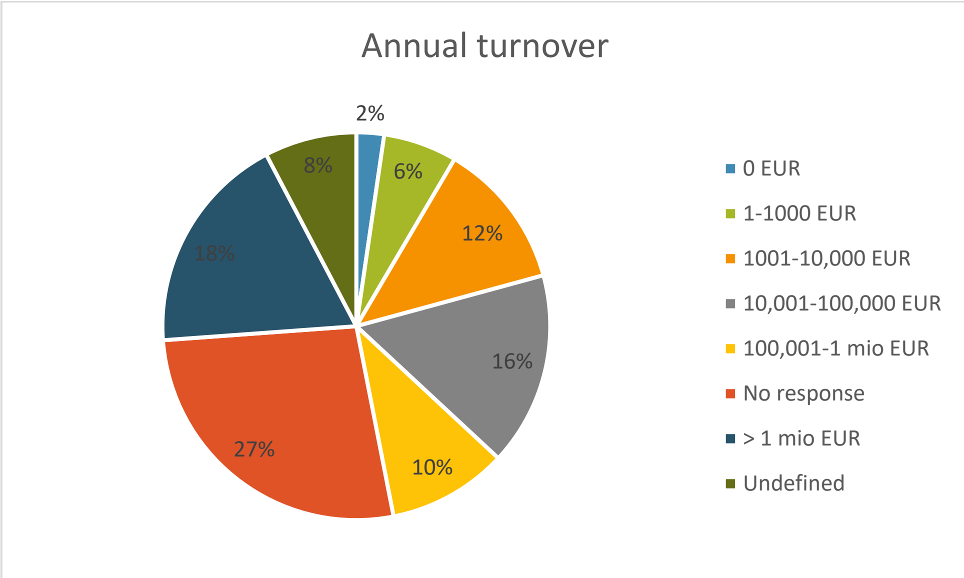
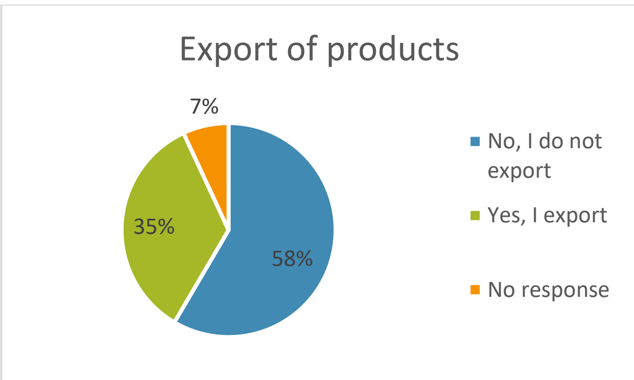
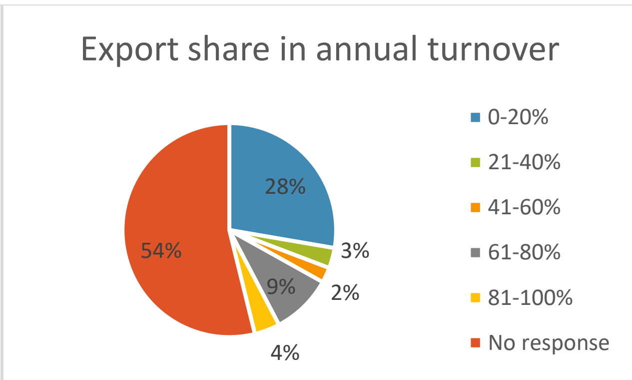


Figure 16: Distribution of annual turnover (N=130).

Export of products

In our survey, more than half of respondents claim they do not export their WFPs, while a good third stated that they do (Figure 17). When asked about the share of export in their total annual turnover, more than half did not reply, and most likely a good part of those do not export at all. Additionally, 14% stated that their export share in turnover is zero (those are included in the 0-20% category). Thus, the largest part of those who do export (14%) indicated that it does not exceed 20% of their annual turnover. There is a relatively large part of the sample (9%), whose exports present 61-80% of turnover, while other categories comprise smaller shares of respondents.





ERA-LEARN has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 811171

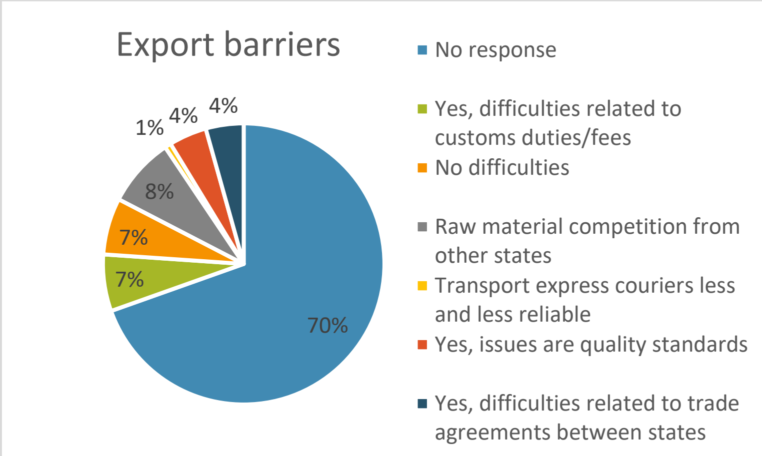


Figure 17: Several elements of information on exporting WFPs (N=130); occurrence of export, share of export in annual turnover of an enterprise, and issues encountered when exporting (multiple answers might be selected in this case).

Very commonly entrepreneurs can have various issues when exporting, however it is dubious to interpret so upon the responses from our survey. More than two thirds of all (70%) did not respond to this question, which is also in line with the responses on how many entrepreneurs export, thus giving information on export-related issues with unknown and probably large uncertainty. Those who responded stated that issues are competition from other countries, difficulties related to customs duties, quality standards, agreements among states, and reliability of delivery services. Less than a tenth of all reported no difficulties with exporting WFPs.

Services apart from WFPs

In addition to material products like truffles, herbs, extracts, nuts, kernels and so on, an entrepreneur can offer services related to WFPs as well. Almost two thirds of all stated that they sell products only, while a third indicated they diversify their business by offering services as well. Most offer guided tours, which is a service reasonably related to WFP – visit to forests, plantations, processing facilities etc. This can also involve tasting, which is the second most common additional services, followed by training and knowledge exchange. Other services are given in less than 5% of cases.

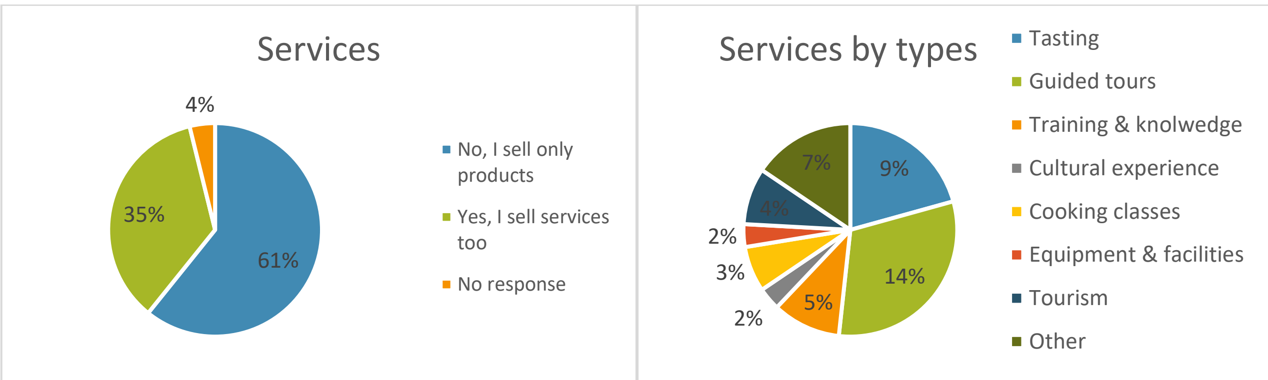


Figure 18: Offering additional services apart from WFPs (N=130), and types of those services.

ERA-LEARN has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 811171

The following segment focuses on environmental aspects of WFP-related business, given how those products depend strongly on natural conditions as a key element of future business prospects.

4.2 Environmental component of business

Sustainability of WFPs' collection

When asked, respondents were more likely to disagree that current levels of WFP collection jeopardize future production capacity (Figure 19). Half of all respondents thinks so, while less than a quarter suggest otherwise. One fifth is indifferent to this and less than one tenth did not reply.

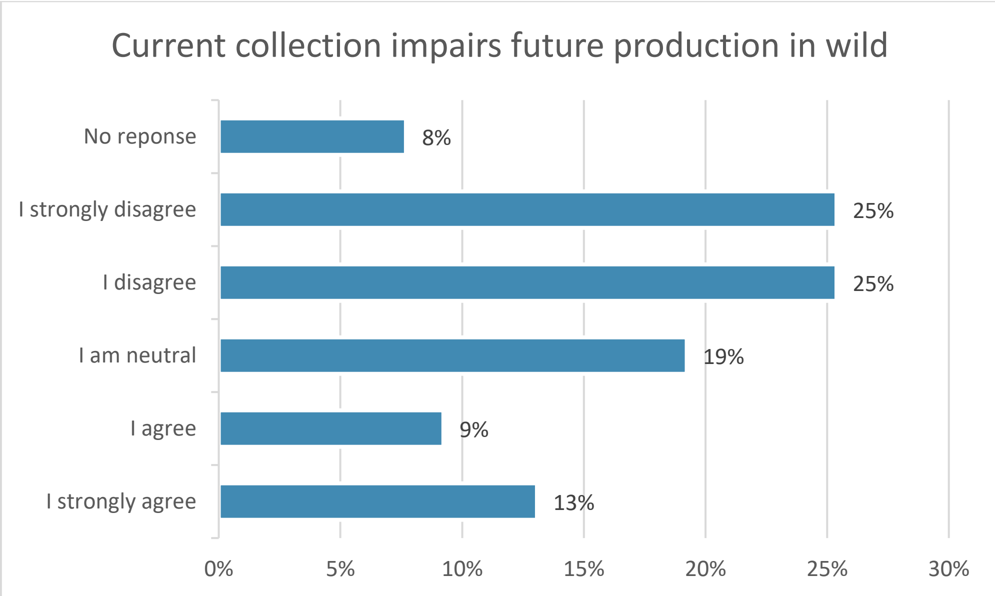


Figure 19: Distribution of (dis-)agreement with the statement that current collection rate of WFP impairs future production (N=130).

Reusable packaging

Related to protection of the environment is also the type of packaging entrepreneurs use. Half responded that they do not use any packaging at all. One fifth indicated they are using recycled packaging, and a bit less than that uses repurposed packs. Only a fraction uses remanufactured packaging, and the remaining 8% does not reuse packaging, but disposes it on a designated location.

ERA-LEARN has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 811171

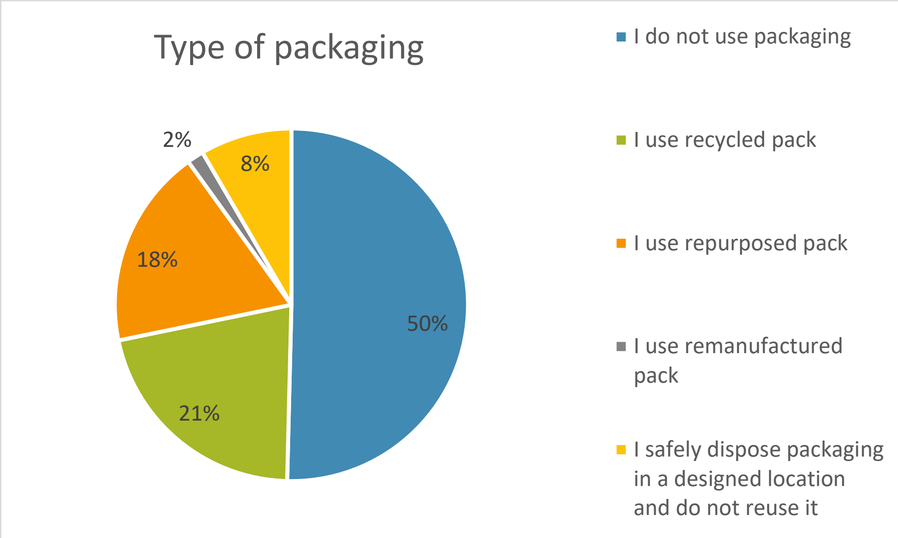


Figure 20: Frequentness of use of reusable packaging (N=131, as multiple options were made available).

ERA-LEARN has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 811171

4.3 Social elements of business

The last segment of the survey related to the business models involved several questions on social aspects of entrepreneurship. Local partners, customers relations and values related to local culture can be decisive for the success of a business.

Local business partners

Respondents could indicate which of their partners come from the local community, defined as either a municipality or region (Figure 21). Each respondent could select several types of partners at once.

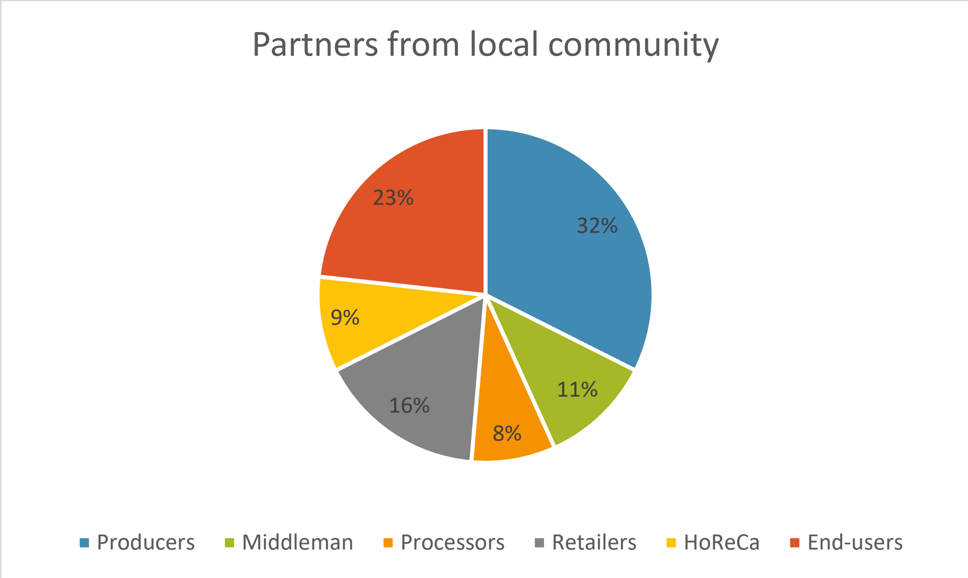


Figure 21: Distribution of local business partners according to their roles (N=185, as multiple options were made available).

A third – and most –, of responses indicated that producers were local, and almost a quarter indicated end-users. This suggest that many dealing with WFP rely on local collectors and local consumers, which makes sense, as WFP are very commonly products produced and used in local environments. Commonness-wise, those are followed by retailers, who wish to make use of the 'locally-produced' appeal, thus needing to provide products that fit this as well. Middlemen, processors and ho.re.ca represent around one tenth of responses each.

Product appeal

Products can have various aspects, which make them more or less attractive to customers. WFPs being often entirely a nature's product, this needs to be present in the overall image of the product. Respondents could indicate what, in their opinion, makes their product special, attractive and in turn, makes customers buy it. Six pre-defined characteristics and 'other' options were offered (Figure 22).

This might be indirectly related to the previous question concerning business partners, as the aspect of locality is an important one. Thus, here as well, one third, and most, of responses indicated that locally produced WFP have a strong appeal among customers. This is, by frequentness of responses, followed by the fact that WFP are a healthy product, furthermore, that they promote local identity, and that they are an environmentally sustainable product. In less than a tenth of responses, involvement of local stakeholders

ERA-LEARN has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 811171

and multiplication of employment opportunities were highlighted too.

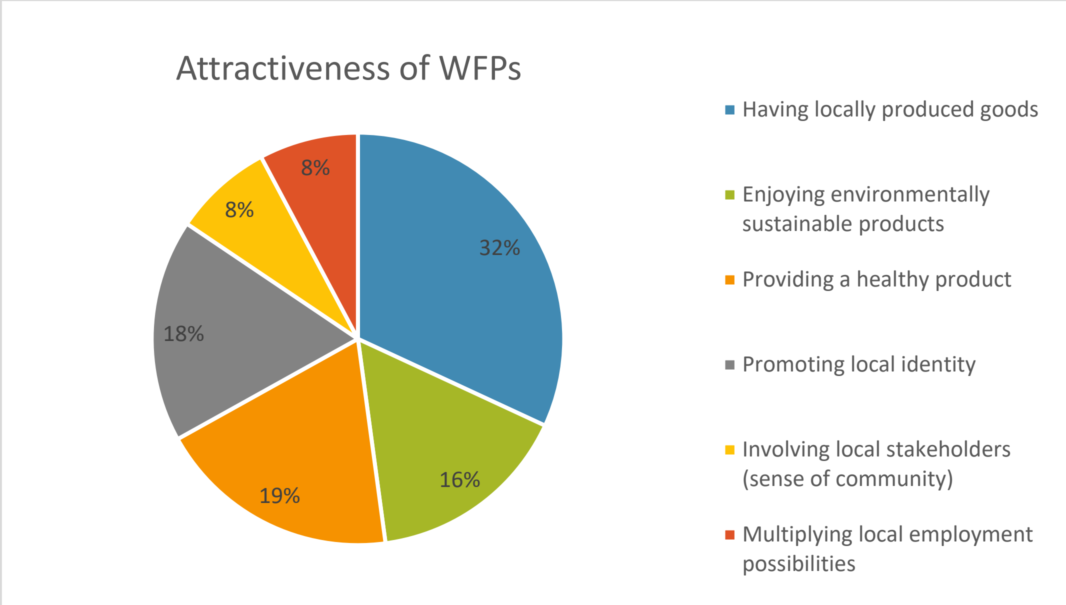


Figure 22: Presence of various aspects of product's appeal, related to WFPs (N=257; multiple responses apply).

Social values

Focusing on aspects that reflect certain types of values, again, local production seems to be most important when it comes to WFPs – a third of responses relate to that. Almost a quarter of responses indicate tradition, closely followed by environmental sustainability. This is very much in line with the previous question of what makes WFPs attractive to people.

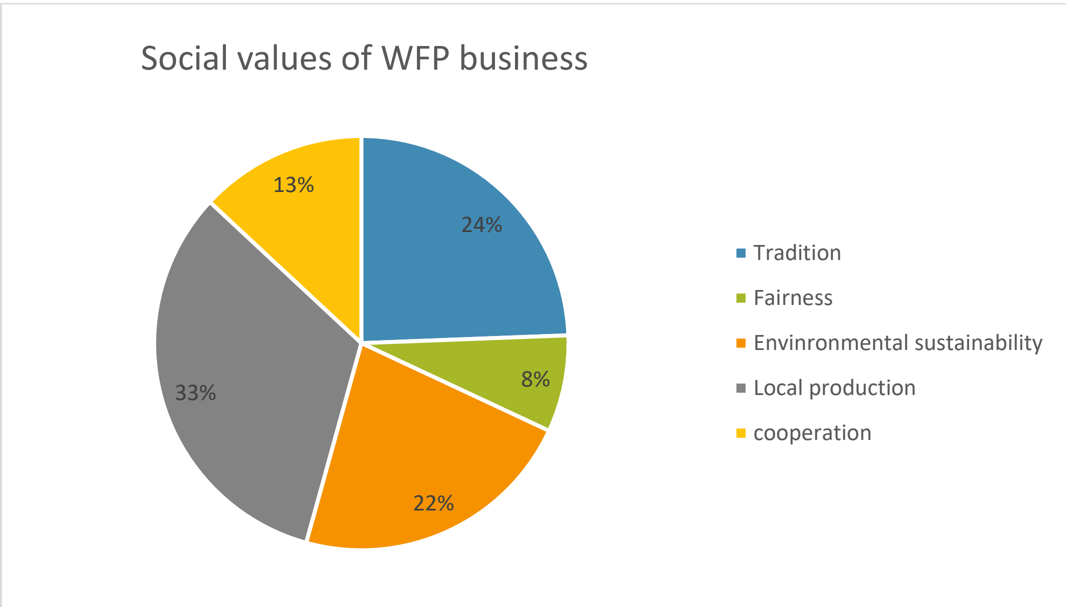


Figure 23: Presence of various social values related to WFPs (N=291; multiple responses apply).

ERA-LEARN has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 811171

6. Conclusions

Study provides valuable information for both, businesses and decision makers who would wish to develop this sector further, especially in terms of business models. The research results presented in this report are obtained upon a sample of 130 entrepreneurs, dealing with different wild food products, which considering that it is recruited from several countries, might not seem much, but it enough to probe some critical aspects.

Results indicate that wild-food products' sector might be very heterogenous in terms of size of companies and the level of professionalism entrepreneurs have. It is probably acceptable to say that there are also large differences among countries, whereas some (Italy, Spain, Portugal) have a stronger business sector in WFP and others (Slovenia) don't. This is probably also a consequence of tradition (personal collection, cuisine, etc.), but to some extent also governmental priorities to either support such business or not.

In some cases, it is evident that WFP sector has much room for improvement, especially, when it comes to innovative production/processing, marketing strategies and ways of finding market and customer. A large share of responses on some questions support that. There is also a set of other services, which could be offered to customers along with products. Guided tours, tastings, courses are something very common in other similar sectors as winery, meat and dairy production.

Undoubtfully, research design used in this study could be improved, especially in terms of recruiting more respondents, involving a wider array of WFP-related producers, processors and retailers. This would increase the merit of the study and probably enable new findings.

However, a further extension of this study is being implemented in another deliverable of the WildFood project, where project consortium is conducting living-lab sessions in partnering countries to develop innovative business models (D4.4). This is very much in line with findings of this study as it showed that business models could be developed. Outcomes of both the D4.3 and D4.4 will act as grounds for elaborating practical procedures on design and of innovative business models in the WFP sector – another related deliverable (4.5).

ERA-LEARN has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 811171

5. References

Bourne, L. (2009). Stakeholder relationship management: A Maturity Model for Organisational Implementation, Routledge.

6. Annex 1: list of stakeholders

List of all stakeholders attending national-level workshops and interviews respectively. Stakeholders from no. 49 onwards did not fit into the value-chain concept and were thus not included in the mapping.

	Country (wild food product)	**Stakeholder**	**Stakeholder's position in the values chain** (1-producer, 2-middlemen, 3-processor, 4-retailer)
1	Portugal-acorn	José Luís Araújo	1,3
2		Ana Tomás - ISA/ Bota um Cibo	1
3		HFM	1,2,3,4
4		João Forte – Montante	3,4
5		Ana Fonseca - Confraria Ibérica da Bolota	-
6		Ana Clara	3
7		Pastelaria Landroal	3,4
8		Pedro Babo – Landratech	2,3
9		Teresa Barrocas - Moinho de Pisões	1,3
10	Portugal-pennyroyal	Vitor Menas - D'Alenguadiana	1
11		Erva Brava	1,3
12		Prove: Núcleos ISA, LxFactory, Setúbal	1
13		Pedro Pellin Martinez - El Jarpil	2,4
14	Portugal-pine nuts	Aldegundes Freitas	3,4
15		Eng. Pedro Mascarenhas - Quinta da Alorna	1
16	Slovenia-truffles	Žarko Volk	1
17		Ivan Ratoša	1,2,3,4
18	Spain-pine nuts	#1	1
19		#2	1
20	Spain-truffles	Biotruff	1
21		Tòfona de la Conca	1,2,4
22		Carme Vivo	1
23		Trufa Pyrenees	1,4
24		Global Tuber SL	1,2,3
25		Carlos Casanova	1
26		Global Laumont SL	3,4

ERA-LEARN has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 811171

27		Josep Ramón Mateu	1
28		Monfertru SL	1
29		Jovell SCP	1
30		Farré & Vidal Trufas	1
31		Pau Dolcet	1
32	Italy-truffles	Emanuele Rendo	1
33		Franco Calvo	2
34		Adriano Rivale	1
35		Lorenzo Coppo	1
36		Giovanni Francia	1
37		Daniele Colombara	1
38		Paolo Mangolini	1
39		Maria Grazia Mansueto	1
40		Maurizio Scarrone	1
41		Giovanni Beccaris	1
42		Roberto Ferrara	1
43		Claudio Vergano	2
44		Maurizio Spadoni	2
45		Marco Callegari	3
46		Daniele Colombara	1
47		Carlo Cappa	1
48		Samuele Lago	3
49		Maurizio Bazzano	1
50		Giancarlo Durando	Service provider
51		Corrado Rendo	Officer of public administration
52		Antonella Armando	Officer of public administration
53		Enzo La Forgia	Service provider
54		Mirko Ameglio	Local politician
55		Milena Armellino	Service provider
56		Delio Barbieri	Service provider
57		Giuseppe Nervo	Officer of public administration
58		Marcella De Rinaldis	Service provider
59		Carla Vicario	Officer of public administration
60		Giovanna Ceccherini	Service provider
61		Anna Ragone	Officer of public administration
62		Marco Fasiello	Officer of public administration
63		Simone Ravazza	Politician
64		Cesare Chiesa	Politician
65		Anna Maria Bruno	Service provider
66		Erica Profumo	Officer of public administration

ERA-LEARN has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 811171

Annex 2: the on-line questionnaire

ERA-LEARN has received funding from the European Union's
Horizon 2020 research and innovation program under grant
agreement No 811171

The Partnership for Research and Innovation in the Mediterranean Area will devise new R&I approaches to improve water availability and sustainable agriculture production in a region heavily distressed by climate change, urbanisation and population growth.

The PRIMA programme is an Art.185 initiative supported and funded under Horizon 2020, the European Union's Framework Programme for Research and Innovation.

ERA-LEARN has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 811171