

A PARTICIPATORY APPROACH TO DEVELOP NEW PRODUCTS THAT PROMOTE SOCIAL VALORIZATION OF AGROFORESTRY SYSTEMS

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Introduction

Agroforestry systems are multifunctional systems which integrate trees, crops, pastures and different livestock species. These systems are characterized by the mixed handling of natural resources, where the woodland (trees, shrubs, etc.) is used together with pasturelands, crops or livestock. Depending on the predominance of each element, an array of various systems can be originated with more or less agricultural or livestock farming vocation (Mosquera-Losada et al., 2009). Due to their diversity, agroforestry systems can generate multiple ecosystem services such as food for humans, feedstuff for animals, timber or biofuels. The dehesa (rangelands located in the South-West of the Iberian Peninsula) is the best example of such systems in the Iberian Peninsula, where it occupies more than 5 million ha in Spain and Portugal.

The characteristics of dehesas are related to the environment in which they are located, with strong constraints both regarding soils and climate. Because of these limitations and despite generating large number of commercial and environmental services (which are not always appreciated by the Society) dehesas cannot be competitive with more intensified systems. All this leads to the need to diversify their productions in order to guarantee their conservation as well as their provision of environmental, social and cultural services.

However, these systems' productive framework is complex, and therefore, a traditional research approach based on quantitative methodologies may not be an adequate. Qualitative research was hence considered to be a valid approach to study citizens' perception of new products that could be provided by dehesa systems.

Qualitative research is a type of research used to approach a concern and its motivating factors and it is the most flexible and versatile type of research (Stewart et al., 1994) and has often been applied in agricultural and forestry systems (Islam et al., 2015; Tadesse et al., 2014).

Although there is a wide variety of qualitative research techniques, the focus group is one of the most frequently used when the preliminary stages of a research project are being developed (Eldesouky and Mesías, 2014). It is based on group dynamics, in which a moderator leads a discussion which is stimulated by the exchange of opinions among the participants. In this study, the general purpose was to use focus groups to find out the products with commercial-value that derive from the dehesa, analysing also those additional attributes that may improve the acceptance of those products.

Material and methods

Four focus groups were developed in the cities of Badajoz and Caceres (Spain) in May-June 2015. The discussions involved 35 consumers, and a balanced distribution of age and sex within each group was sought. The number of participants per focus group ranged from 6 to 11 with the main criterion for the selection of the participants being their willingness to participate in the study.

All the sessions were conducted by the first author of the study and recorded on video and audio for further analysis. The moderator started by explaining about the project's framework and participants were also informed that the purpose of the session was to obtain their free opinions and to comment them with others, with no answers being right or wrong.

After the focus group sessions the recordings were transcribed in order to analyse them at a later stage. The analysis of the information collected was carried out through an adaptation of the content analysis technique (Stewart and Shamdasani, 1991; Flick, 2009). Thus, the information was initially processed and organised by common topics. A document was then drafted with the results, which showed the concepts mentioned by all the groups. Lastly, all the terms and their meanings were taken into account for the analysis, with the answers being examined for each point of discussion in order to identify similarities and differences.

Results

During the sessions, participants were first individually asked to indicate specifically the products and services derived from the *dehesas* they were aware of **Table 1** summarises the commercial-value products identified together with the number of times they were mentioned.

Table 1: Consolidated commercial-value products obtained from *dehesas*

| Food | No. of times identified | Non-food | No. of times identified |
|-----------------------------------|-------------------------|--|-------------------------|
| Pig: meat and by-products | 35 | Agritourism | 16 |
| Beef | 34 | Bird watching | 2 |
| Fighting bull meat | 7 | Active tourism, e.g. hiking, horseback routes, touristic cycling | 3 |
| Sheep: meat, milk and by-products | 29 | Hunting tourism | 10 |
| Goat: meat, milk and by-products | 19 | Firewood and by-products (oak coal) | 13 |
| Poultry production | 3 | Timber | 9 |
| Honey and by-products | 19 | Cork and by-products | 31 |
| Game meat | 14 | Acorn (fruit) | 16 |
| Fish products (e.g. tench) | 1 | Wool and furs | 6 |
| Cereal | 16 | Pasture | 7 |

As Table 1 reveals, a great variety of products associated with the *dehesa* were identified, although some other that are not strictly generated in this system (nuts, olive oil, resins, fruits and vegetables) were also mentioned. The explanation behind this may be that some participants identified the *dehesa* with the region, as the majority of the area is occupied by this ecosystem.

Additionally to identifying typical products which are abundant in the ecosystem, other products were mentioned that are classified as emergent or with potential to develop (**Table 2**).

Table 2: Emerging products with potential to develop

| Food | No. of times identified | Non-food | No. of times identified |
|--|-------------------------|----------------------------------|-------------------------|
| Mushrooms and fungi | 11 | Medicinal plants and cosmetics | 4 |
| Asparagus | 7 | Aromatic plants (thyme, oregano) | 3 |
| Acorn liqueur | 1 | Herbs and herbal tea | 1 |
| Acorn beer | 1 | Crafts (cork, timber, etc.) | 1 |
| Acorn flour and other food by-products | 1 | Hydraulic resource | 1 |

Mushrooms and asparagus are considered as very interesting products the commercialisation of which is currently very limited. Other products the participants were interested in were the acorn by-products and they gave examples such as acorn chocolates, acorn fruit drink, acorn ice-cream, acorn bread and acorn liqueur. The opinion of the participants with regards to the potential development of these products was diverse, with some positive comments, for example referring to gourmet markets, and also some other negative that showed that many consumers are willing to try novel products but not to buy them on a regular basis.

The issue of the importance of production system from the consumer point of view was also discussed. It was observed that it had a limited impact at the time of purchase. Some participants stated that they regarded highly the fact that a food product was produced in a sustainable way, in extensive systems and using autochthonous breeds, but they also recognised that their behaviour did not reflect this attitude. That is, they consider extensive/sustainable/natural products important but do not end up buying them. The reason behind this behaviour is that the price is key in their purchase decision and the majority of these products are expensive.

Some proposals were raised during the sessions to support the fact that the production system should become a key factor and that people should act responsibly at the time of purchase in detriment of price and geographic area. The participants believed that there was a need to build citizen awareness and better and more advertising of the products in order to guarantee the sales as a way to increase their added value and improve prices.

Other aspects related to the products that had been previously identified and that were brought into discussion were the role of the origin (geographic or production system origin) and the use of quality brands. In general terms, geographic origin was highly valued, although especially for certain types of products (delicatessen) where the local component serves as a guarantee of traditional production and benefit for the economy of the area

Regarding quality brands, participants stated that its presence in food products was a positive aspect. However, they also pointed out that a quality brand would not make them think that the production systems are more sustainable or better for the environment.

At the same time, they pointed out that the establishment of a brand identifying the dehesa must be clear, so, for example, the incorporation of the term agroforestry is not seen as particularly attractive, as it is a term with which people are not very familiarised. The main advantage of a dehesa brand to designate all the products would be the simplification of the current situation, as for the majority of the participants there are too many designations of origin that may even confuse the consumer.

Discussion

The dehesa agroforestry system is mainly identified as a service supplier. Specifically, the most frequently identified role is in the food supply (especially of animal origin) and raw materials (forestry). However, a connotation introduced by the participants was the particularity that many of these food products are not considered as commodities, but added-value food due to their outstanding quality.

The dehesa also provides a great number and variety of recreational services, mainly linked to agritourism. Agritourism can be considered as the optimum way of maximising dehesas' recreational use and ensuring its economic sustainability. This activity is currently a great opportunity and a feasible way to economically develop the regions where the agroforestry systems are located.

The results of the study also showed the poor assessment consumers attach to the attribute "production system", as it was often mentioned that price and origin were by far more important at the time of purchase. Although this behaviour has been detected in other research (Aprile et al., 2016; López-Galán et al., 2013) participants noted that a key point for the enhancement of agroforestry products is the change of this purchasing profile: production system must become a key factor in the shaping of consumers' preferences. To that aim, public policies promoting social education must be developed. This, along with better advertising for agroforestry systems' productions will provide a way to increase their added value and better prices.

It should be noted that these findings, due to the qualitative nature of the study and its convenience sampling, must be considered as preliminary. Further quantitative research with representative samples would be needed in order to extend the outcomes of this paper.

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