

# ***Marketing improvement of organic meat and milk in Andalusia through the enhancement of the environmental role of this production model***

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**Abstract:** Andalusia is the first Spanish region in ruminant organic production. However, in this region, domestic consumption of organic meat is very low and, as a result, farmers have important marketing problems. At present, the main reason why consumers demand organic meat and milk, is for health, as these products are characterized by the absence of synthetic chemicals. However, organic livestock presents important issues related with the environmental benefit of this production model. The improvement of the knowledge regarding to such benefits will contribute to increase demand for meat and organic milk. In this sense it is important to identify and quantify the environmental benefits of organic farming and use this information to promote a market transition and consumption towards a more agro ecological approach. Aware of this challenge, the Regional Government boosts a research and development project, in collaboration with researchers from the University of Seville, Pablo de Olavide University and IFAPA of Granada. The objective of this project is to contribute to improving the marketing of organic meat and cheese, by generating simple and understandable indicators associated with environmental and social value of these systems. The aim of this communication is to present a preview of the results, among which include the following: (i) analysis and assessment of the economic viability of different models of ruminant organic production in Andalusia, (ii) measure of environmental value of organic farms, from quantifying their impact on the environment, promoting biodiversity and fire prevention, (iii) knowledge of the importance of environmental contribution of the organic model for consumers (iv) proposing a set of environmental indicators, associated with the product, for helping the increment of the demand of organic meat and cheese.

**Keywords:** organic production, ruminant, marketing, sustainability

## **Introduction**

Andalusia is the Spanish region with the highest percentage of organic farms (67 %). The number of organic farms in Andalusia has increased from 166 in 2001 to 3,636 in 2012, according to the latest official statistics published by the Junta de Andalucía (2013 ). The cattle farms are the most numerous (49 % of organic farms), followed by sheep meat farms( 32%). A large part of these holdings is based on grazing and are located in natural protected areas.

There are no official data concerning the consumption of organic meat, although it is estimated that less than 1 % of all meat consumed in Spain is organic. The low consumption of organic meat would be due to its higher price and the lack of available information for consumers about the nutritional and environmental benefits of organic farming.

The main reasons why consumers buy organic products would be health, taste, quality and environmental commitment. In 2013, in connection with this last point, a research project funded by the Junta de Andalucía, "Development of a plan to promote organic ranching and marketing their products (037/2013-SEN )" has been implemented to produce knowledge about the environmental and social value of organic ruminant livestock. An analysis of the technical and economic viability of such farms and simple and understandable indicators for consumers have complemented the study.

The purpose of this communication is to present a review of the main results, specifically in relation to: ( i ) the production and marketing of meat and organic milk in Andalusia, ( ii ) the contribution of organic farms in the conservation of the biodiversity of natural areas, ( iii ) the assessment by the consumer, the environmental contribution of organic livestock and ( iv ) the diversification strategies for promoting and selling organic products.

### **Methodology**

16 organic farm of Andalusia were selected to know about their production and marketing. 7 were sheep meat , 5 beef cattle 5 and 4 dairy goats farms. Technical and economic, 2011 and 2012 data were provided thanks to interviews with farmers, to give information on the technical and economic viability of farms and the marketing of their products. Additional information has been provided by open interviews with several other actors involved in the production and marketing chain.

Furthermore, surveys of both organic and non-organic consumers were performed to know their consumption behaviors and their opinions on the accessibility to this type of food and the valuation made of environmental externalities generated by organic farming. The questionnaire was structured in 5 parts and 38 items: socio-economic data, consumption habits, shopping habits, labelling and environmental externalities.

This questionnaire was designed with the Google tool to create forms that can be sent through different channels: email, social networking applications, i-phones, etc. 220 surveys have been analyzed from September to November 2013.

Finally, simple indicators have been generated at farm level to study the contribution of organic farming to biodiversity preservation and the conservation of Natural Protected areas, from the 16 initial farms selected above: number and types of land use, land use change and number and types of habitats. Digital mapping was used thanks to a Geographic Information System (GIS )and available information from different spatial data infrastructures and official sites of Andalusia (REDIAM , IDE Andalusia, IGN)

## Results

### **The production and marketing of organic meat and milk in Andalusia.**

#### *a. Analysis of the production models according to the products and their marketing.*

For most of the analyzed farms, the prices of the products do not cover the production costs what questions their economic viability. In addition, only 4 of them manage to market their products directly to the consumers. The results are then analyzed according to each specie and production model.

Three models have been identified for sheep farms according to the type of products sold and the type of marketing. Of the six farms studied, only one markets the lambs as organic on special organic markets through short channels (Model O-1) producing either one month lamb with an average of 12 kg of live weight or a three months lamb with a live weight of 17-20 kg, according to the consumer demand.

The Model O-2 is characterized by the sale of animals fattened by private or cooperative feedlot. The age and weight of these lambs vary according to the farms from 2 to 3 months of age and an average of 18 kg live weigh to 3-4 months and 21 kg weight. However, the price charged by kg of live animal is similar in all cases, being even lower in larger animals. Only two farms could cover their production costs. The Model O-3 is represented by only one farm selling their lambs as “lechales” at an heavier weight but based on grazing.

For cattle, three models have been established. The V-1 model is represented by a farms that markets all of their calves as organic through short channels. Calves remain with their mothers in the field during about 6 months, and then they are incorporated in feed lots to receive large quantities of grain and fodder, both self-produced and partly purchased, producing calves of a similar weight to the conventional ones.

the V-2 model is represented by three farms. The first produces calves older and heavier than the other, based on a pastoral system with supplemented feeding and purchased fodder. In this case the price received per kg of meat is lower than in other holdings. The other two produce weaned calves of lower live weight.

The V-3 Model is based on a farm which could sell some of their fattened animals to slaughterhouses and acknowledged as organic livestock, but some of the animals must be sold as conventional after weaning. The animals are fattened by grazing with supplementation of feed and purchased fodder. The produced animals outweigh those of the V-2 Model but the price is not higher.

We can note that the V-1 and V-3 models are those which cover production costs by selling calves, mainly because these farms are more productive than the others, reaching the average of 0.8 calves per breeding cow per year, an optimum level for these production systems.

In the case of goats, two models were differentiated according to marketing. The C-1 model is represented by two farms who are farm made cheese makers with their own organic milk. In both cases the productivity is low and does not cover the production costs.

The C-2 model includes organic farms, selling their milk at a conventional not organic dairy industry. The price milk is paid is lower than in the case of Model 1; however, these two farms have a higher productivity per goat and year than in the first model, perhaps because their model would be nearer a conventional system and they cover their production costs in both cases.

### *b. Main problems met to process and market organic milk and meat*

1. There are few ecological slaughterhouses and, above all, few cutting rooms to give added value to the product. Furthermore, transport, slaughter and handling of organic animals are expensive because the volume of animals is reduced, thereby impacting on the final product price. All interviews agree that restoring the right of slaughtering on the farm or developing mobile slaughterhouses to reduce costs, as in other European countries would be needed.
2. Regarding milk processing, so far the legislation to settle dairies has been very restrictive, and is a great investment that farmers could not afford. The new law about agro – food small scale and farm cheese making units has offered an opportunity to change the situation, but the market for organic small scale cheeses has still to be developed.
3. For farmers who want to sell to dealers, this type of production would be also i a great investment because they have to control the cold chain (especially for meat).
4. There is a lack of connection between the producer and the consumer. The producers are investing individually in a distribution logistics, because they are isolated and uncoordinated. In addition, the work is so hard that farmers could not devote enough time in marketing their products. However, it is unusual for consumers or distributors to search producers where to buy; they also lack of time, and expect the products are proposed to them. .
5. There is also few campaigns of communication toward consumers and small business to increase awareness about organic products and the benefits this type of farming offers. The aware consumers who look for these products do it not only because they are healthier, but also because they know about the environmental and social benefits provided. Stakeholders are demanding wider dissemination of these benefits to consumers in general, but also to the facilities that could distribute these products.

### *c. Behavior of the Andalusian consumers regarding organic meat and milk*

More than half of the interviewed consumers could be considered as regular consumers of organic products (55% of consumers), while the remaining 45% are either punctual consumers or do not consume these products.

68% of the consumers have declared to consume organic products of animal origin. For consumers who do not consume these products, they argue the main following reasons: distrust in certification, difficulties in access to them, being a vegetarian and the higher price of these products compared to conventional products. However, in relation to this last reason, 40% think that the quality of organic animal products is high enough to justify their price, 29% think the opposite and 31% have no opinion. This 29% claiming that there is a good value, have insisted on the too high price of organic products.

Considering the organic dairy products, yogurt and ripened cheeses are more consumed (about 32.5%), followed by fresh cheeses (29%), milk (25%) and finally butter (15 %). With regard to meat, chicken is the most consumed (24%), followed by cattle (22%) and sausages and hams (16%). The others are lamb (12%), pork (10%) and kids (4%).

Regarding buying habits 80% of answering consumers say they buy food to consume it at home. The establishments where they buy organic products are diverse. The greater proportion buy them in specialized stores, directly from the producer, in shops, and supermarkets and hypermarkets (all equally at the same extent); only a smaller part buy them in retail food markets.

When they buy them, 83.6% of consumers recognize the seal of organic production. 92% of con-

sumers still on the label when selecting a product and among the criteria that consider also the origin of the product and the expiry date. 50% say information on the labeling of food products is enough.

## **The contribution of organic farms on biodiversity conservation of natural areas**

*a. How develop the environmental contribution at the farm level.*

### Number and type of land uses

The analysis of the data shows that the number of land uses in the different farms vary from a minimum of 4 to a maximum of 8, among 11 different possible types. The most abundant habitat are scrub woodland, dense tree formations, shrubby and herbaceous treeless vegetation, pasture with trees, these with a greater diversity, due to the presence of trees, shrubs and scrub which enables the species to get different resources to meet their biological needs. At reverse, the less abundant, almost not existing, are built areas, agricultural cultivated areas and wetlands.

### Changes in land uses

The land use of the sample farms has been compared from 1956 and 2003. The change in using the land may have direct effects on biodiversity. The results (Table 1) show that the distribution of uses is similar between the two years studied, The scrub woodland being always predominant from 1956 to 2003. We have observed, however, that open spaces with sparse vegetation and herbaceous shrub treeless formations have decreased in favor of dense woodland formations. Therefore, the existing traditional activities, such as ranching, have preserved the sustainable uses that have maintained the potentialities of farms until now.

Table 1: Changes in land uses for the studied farms

Use	% 1956	% 2003	% Variation
Heterogeneous agricultural areas	0,14	0,04	-0,1
Opened sparsely vegetation	11,60	4,77	-6,83
Dense tree formations	4,65	13,90	9,25
Shrub and herbaceous treeless formations	14,86	10,64	-4,22
“matorral” scrub Woodland formations	50,66	52,16	1,5
Pasture with wood land	8,07	8,79	0,72
Altered built surfaces	0,01	0,04	0,03
Irrigated areas	0,20	0,20	0
Dry areas without much vegetation	9,81	9,40	-0,41
Wet areas and water	-	0,06	0,06

Source: Established for the study from the map of land use and vegetation of Andalusia in 2003. Environmental Andalusian Information network (REDIAM).

## Number and types of habitats

This indicator has been chosen to determine the habitat diversity on the farm. A high number of habitats is in favor of a large number of animal species on the farm, as different species have different requirements, and thanks to a large range of habitats, they can meet their basic needs. From a total of 24 possible habitats, most farms have 6, with a minimum 2 and maximum 9. The most abundant are trees and scrub woodland, and are also important the rain fed arable crops.

The elements found are those that would occur naturally, so you can say that livestock favors indigenous organisms, highly adapted to this type of vegetation

### *b. Consumer's opinion on the environmental contribution of the organic livestock*

When we ask the consumers their opinion on the environmental contribution of organic farming, the most valued externality is the "rational use of natural resources" and "Fire Prevention" got the lowest score Externalities related to the "water" water are the next more quoted by consumers (figure 1).

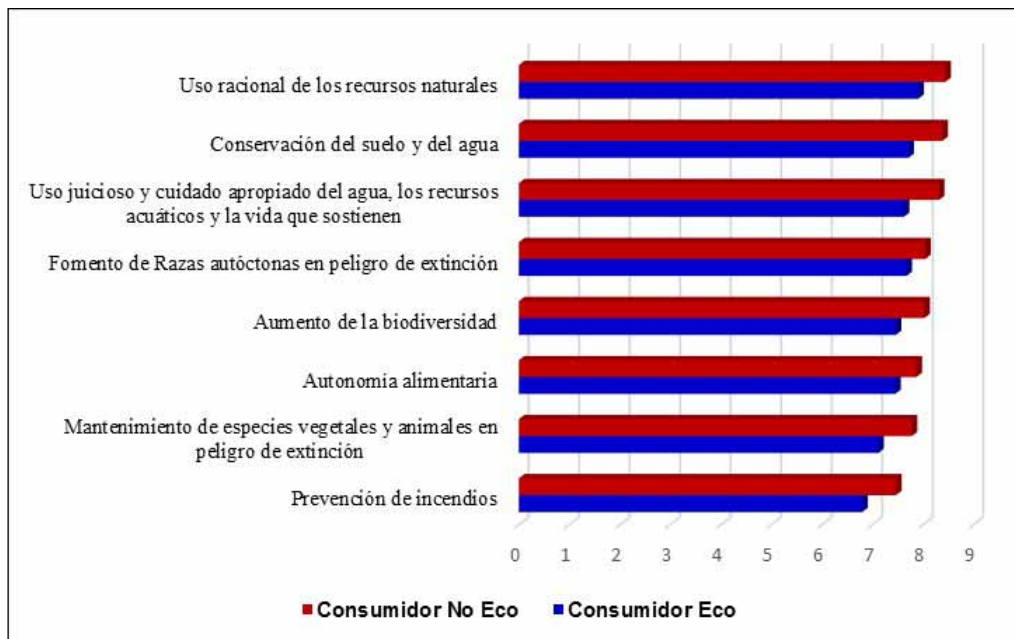
Considering their level of consumption of organic products, the non-organic consumer values a little better the "Ecological externalities" than the organic consumers. The "Fire Prevention" externality remains with the lowest score (Figure 2).

Figure 1: Evaluation by consumers of environmental externalities produced by organic farming (1 - Not important; 9 - very important).

- rational use of natural resources
- soil and water conservation
- judicious use and proper care of water resources and aquatic life support
- promotion of local breeds in danger of extinction
- increased biodiversity
- food autonomy
- Preservation of plant and animal species in danger of extinction
- Fire prevention



Figure 2: Evaluation by consumers according to their level of consumption of organic products Valoración por los consumidores disgregada por “Grado de consumo de productos ecológicos” of the environmental externalities produced by organic farming (1-Not important; 9-very important).



### Strategies of diversification of promotion and sales

One of the possible alternatives to increase the consumption of meat and milk is to relate ecological organic farming to one of the most developed economic sectors in Andalusia: Tourism.

Agro ecology sees tourism as a facilitator of sustainable rural development, so necessarily it must develop tools that integrate economic, social and environmental aspects. The “Bio -Itineraries” are one of those tools; they are defined as a route linking responsible tourism with ecological food system, both in production and processing, distribution and consumption phases. The “Bio -Itineraries” concept aims to facilitate the maintenance of eco-cultural landscape and increase the economic diversification of rural areas (Egea, 2012).

The project has developed a pilot model in which routes designed under the principles of sustainable and responsible tourism, including organic livestock farms, stores selling meat products, restaurants that cook these food, etc are proposed and attached to the elements of cultural and natural heritage. The Sierra de Huelva has been chosen to develop “Bio -Itineraries” because the proximity, concentration of livestock farms and the availability of actors and financial means but it could be developed in all the areas to promote organic farming. The medium chosen for the presentation of the project is Google Earth, being a free, widespread and easy to handle for any internet user platform.

7 “Bio -Itineraries” have been designed: one for horse riding, another for bicycle, two for cars and two for hiking. These routes have been described and hosted in a blog, in which the homepage has explained what are the “Bio-Itineraries” and their links to the downloaded Google Earth page. Each participating farm, their products their localization are described with a photograph and contacts

## **Conclusion**

The studied organic farms of Andalusia have significant problems in marketing their products. The main reasons include the lack of connection between the producer and the final consumer and the lack of tools and enabling legislation to allow the producer to process and market their products. So the farmer cannot benefit from the added value of the sale and that the products may not have a more competitive price. The analysis of the environmental contribution of ecological farms with quantified indicators obtained at the farm level by mapping have showed that organic farming is inserted into the natural environmental dynamics, preserving diversity of landscapes, and offering various benefits such as grassland conservation, control of woody vegetation with consequent control over wildfires, species dispersal and maintenance of diverse habitats.

Quantifying the environmental contribution, would be an essential step for the evaluation and remuneration of the ecosystem services in organic livestock. Training and informing consumers would equally important to improve of the economic viability of these livestock systems. The design of “Bio-Itineraries”, seen as routes linking a “responsible tourism” with the ecological food system, could afford a rapprochement between producers and consumers, which will certainly contribute to increase the consumption of such products and predispose positively the citizens to pay the farmer for the ecosystem services generated by these production models. The commitment of all public services at local, national and European levels would be needed to promote the implementation of rural development projects considering these social and environmental contexts and for disseminating the benefits of this type of farming.

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