Research on Assessing the Potential for Mountain Certification of Bistra Village, Romania

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Abstract

The quality of mountain products represents a competitive advantage for the area of Bistra village, Alba county, Romania. Each mountain product comes as a result from raw materials from mountain areas and in the case of processed products, processing takes place in the mountain region. This paper aims to investigate ways to obtain mountain certification for products from this area, so it could promote agro-food products as a lever for sustainable development, that ensure economic activity. This study randomly analyze several farms in Bistra village in terms of specific indicators for mountain certification. The method used in this study is analyzing in terms of socio-economic, territorial, environmental and economic indicators. After a complex analysis of the specific indicators, results show that the Bistra village, brings together the criteria relating to mountain certification, according to the European Regulations, improving the sustainable development of the area. The main conclusion of this study is that in the current economy it is necessary to create added value for mountain products as part of a narrower niche, in order to preserve high competition and higher prices on the market, so that these farms could face competition over time.

Keywords: socio-economic indicators, ecological indicators, mountain product certification, rural economy, sustainable development

Introduction

The best working basis for definition of a "**mountain area**" is the definition adopted by the article 18 of regulation (EC) 1257/99 regarding mountain less favoured areas. Mountain areas shall be those characterised by a considerable limitation of the possibilities for using the land and an appreciable increase in the cost of working it due:

- to the existence of very difficult climatic conditions, because of altitude, the effect of which is substantially to shorten the growing season;
- to the presence of much too steep slopes at a lower altitude over the greater part of the area, which are unsuitable for the use of machinery

or require the use of very expensive special equipment, or

- to a combination of these two factors, where the handicap resulting from each taken separately is less acute but the combination of the two gives rise to an equivalent handicap.

Sixteen Member States include mountainous Less Favoured Areas (LFA) in their territory (Tab. 1). With 7.40 million hectare (mil. ha) of mountain LFAs, Spain is by far the Member State with the largest mountainous agricultural area, followed by Italy (4.30 mil. ha), France (3.99 mil. ha) and Romania (2.71 mil. ha). These four countries include 69% of the total mountainous LFAs of the EU (EC, 2009). The same study conclude the key highlights of mountain agriculture in the EU:

Table 1. LFA mountain area in the EU27

Member State	LFA mountain UAA (Utilised Agricultural Area) – mil. ha	In % of total national UAA	In % of total EU Mountain UAA
Spain	7.40	30%	28%
Italy	4.30	34%	16%
France	3.99	15%	15%
Romania	2.71	20%	10%
Austria	1.74	55%	7%
Greece	1.53	38%	6%
Finland	1.21	53%	5%
Portugal	1.00	29%	4%
Slovakia	0.66	34%	2%
Czech Republic	0.63	18%	2%
Sweden	0.34	11%	1%
Germany	0.31	2%	1%
Poland	0.27	2%	1%
Slovenia	0.26	53%	1%
Bulgaria	0.24	8%	1%
Cyprus	n.a.		
EU27	26.60	15%	100%

Source: EC, 2009

- the area productivity is on average higher in mountainous LFAs (857 €/ha) than in non-mountainous LFAs (761 €/ha), although both these values are significantly lower than in non-disadvantaged areas (1 370 €/ha);
- the average mountain farm income, at around 13 777 euro per annual working unit (€/AWU), is comparable to the average in LFA-non mountain (13 730 €/AWU), although below the average income registered in Non disadvantaged area, at 18 878 €/AWU;
- the average labour productivity is lower in mountainous LFAs;
- livestock and cattle breeding are the main agricultural activity in mountain areas.

Pastoralism and transhumance are an integral part of traditional farming in most European mountains, and play an important role to promote the sustainable development of mountain rural areas. These practices contribute to maintaining biodiversity as well as a wide range of **traditional products** (cheese, meat products) which can be the pillar of quality oriented development activities, enhancing also the touristic potential of the area. Also, the existence of a successful

marketing channel for quality products linked to the area (PDO – Protected Designation of Origin) is particularly important as it provides higher prices to producers and tends to secure their products. Closer urban areas represent an opportunity in general for the development of the mountain area concerned and for farmers to market their products and diversify into non-agricultural activities, in order to complement their income (EC, 2009).

The reasons why **mountain products** are not sold at higher prices, according to researchers, can be that they are sold locally and therefore bought by rural population with a lower income, compared to urban population. However, since mountain products have up to now an unclear image, consumers are not ready to pay higher prices for them. Still, mountain farming has an excellent record in adding value and producing quality products. It is a key asset for maintaining valuable habitats, unique landscapes and cultural heritage from north to south and east to west of Europe. (EC, 2009).

According to specialists from Euromontana (2010), European Union should take action on

mountain products at least for the following reasons:

- Mountain farming represents a significant proportion of European agriculture;
- There is a need: mountain farmers need to secure their revenues and improve their productivity to keep farming in mountain areas;
- There is an interest for EU policy: mountain agriculture is beneficial to society at large as it produces on average more public goods than agriculture from other areas, some of which are endangered;
- There is an opportunity: mountain products are specific AND mountains have a common identity, a positive collective imaginary in consumers' minds that represents a market potential to exploit;
- Considering the uncertainty of Public policies, we need to invest in measures that increase farmers autonomy;
- A **reserved term** would at least help to solve functioning problems on the single market and provide incentives for farmers to organize.

Creating a **mountain reserved term** is an opportunity to dedicate the positive image of mountains to mountain actors, by creating a market segment that would allow mountain actors to build up marketing strategies leading to better value added for their products and to a better promotion of the production place. It would give better autonomy to farmers and better resilience in case of economic crisis or instability of market prices. The added value would not be as significant as a GI or as a proper mountain quality scheme but, if not associated with very big operational costs, would procure some of its added-value (Euromontana, 2010).

The issue of **mountain certification** is one of recent times, so there are relatively few specialty studies on this topic. Among these, one of the most interesting is the one made by INRA Versailles (French Institute for Agricultural Research, one of the most important European research institute for mountain area), where the author (Dubeuf, 1992) focused on an inventory of quality analysis tools and indicators of mountain products susceptible to mountain certification (product specification rules, environmental norms, methods of analysis, hygiene, manufacturing, storage, distribution), as well as a qualitative comparative analysis of

complementary logos existing on market: AE (Agriculture Ecologique) – Organic Farming, Label Rouge – Red Label, Farmer Products, Traditional Products (PDO – Protected Designation of Origin, PGI – Protected Geographical Indication, TSG – Traditional Specialty Guaranteed). The penetration of the new logo (**Mountain Product**) can only take place after a detailed socio-economic study of the added value that this new logo can bring to the consumer as compared to existing logos on the market with already acquired segments.

The 5 principles of the European Charter for Mountain Quality Food Products are:

1. the raw materials must be derived from a mountain region;
2. the processing must be carried in a mountain region;
3. production must take into account concerns relating to sustainable development;
4. production must attempt to maintain the biodiversity and heritage of mountain regions;
5. producers must be able to guarantee at all times the transparency of information to consumers (Euromontana, 2005).

A recent study provides an analysis of mountain certification in the context of the sustainable development of the mountain area (McMorran *et al*, 2015). The article describes an overall analysis of logos existing in the mountain region of France, Italy and Switzerland at the level of legislative measures to promote it. The study also considers a numerical quantitative analysis of the number of PDO and PGI products in the mountain area of those 27 EU countries to see the impact of introducing a new quality logo (Mountain Product) on the European mountain market (the chance to get a better price, the ease of collaboration between producers, the importance of quality products for consumers), the benefits of mountain certification on the market, constraints to which producers voluntarily submit when certifying their own products etc.).

The results of the study demonstrate that existing EU Geographical Indication schemes are important for marketing mountain foods; however, they are less suitable for small-scale producers. National schemes for certifying mountain products have limited effectiveness, although considerable scope for enhancement exists. Recent EU legislation defining mountain products represents a considerable opportunity; however,

challenges and potential trade-offs remain regarding the development of criteria on the location of supply chain stages and environmental factors, certification and control methods, and definition of mountain areas. The findings of the study require in the future further research into the social and territorial mechanisms that enable the mountain product to contribute effectively to sustainable mountain development.

There are also other authors writing about mountain food products:

- from the perspective of the benefits of PDO, PGI or TSG certification (Caron *et al*, 2010; Mc Morran and Price, 2009; Santini *et al*, 2013; Levidow *et al* 2013; Stolze and Lampkin, 2009),
- from the need to market organic and mountain products through value chains (Crittenden *et al*, 2011; Giorgi and Losavio, 2010; Groier *et al*, 2012; Holloway *et al*, 2006; Rainis, 2011; Reuillon *et al*, 2012; Scholl *et al*, 2010),
- or by highlighting the benefits that their correct identification can have on the growth of other industries in the mountain area such as mountain tourism, related to the environment and landscaping (Iorio and Corsale, 2010; Jimenez, 2008; MacDonald *et al*, 2000).

Organic food and agriculture has a significant presence throughout Europe. In Romania, the challenges include inconsistencies in compensatory payments from the national government as well as concerns GMO (Genetically Modified Organisms) regarding adequate protection from GMO cross-contamination. The development and continued growth of large-scale farms reflects the ongoing challenges facing small to medium sized farms. Finally, the expansion of industrial and mining activities in mountain areas also poses a challenge to organic agriculture in Romania (IFOAM, 2014).

The mountain certification is obtained on the basis of the measures provided by The Regulation (EU) No 1151/2012 of the European Parliament and of the Council of 21 November 2012 on quality schemes for agricultural products and foodstuffs and by The Commission Delegated Regulation (EU) No 665/2014 of 11 March 2014 supplementing Regulation (EU) No 1151/2012 of the European Parliament and of the Council with regard to conditions of use of the optional quality term "mountain product".

Materials and methods

This study analyses 10 random farms in Bistra village, Alba county, Romania, in terms of specific indicators for mountain certification. The quality of mountain products represents a competitive advantage for the area of Bistra village. Each studied mountain product comes as a result from raw materials from mountain areas and in the case of processed products, processing takes place in the mountain region.

Although the pedoclimatic and agronomic potential (the pedoclimatic conditions, the biodiversity, the agricultural crops and the domestic species of the domestic animals, the organic farms, the certified traditional products) of the Bistra village is similar to that of the other villages in the area (Valea Arieşului, respectively Poşaga, Sălcuia, Lupsa etc ...), in order to certify the agro-food products of the area, the legal procedure does not require specific elements of a particular territory.

Instead, there are certain agronomic characteristics of a given territory that have emotional relevance in the mind of the consumer (certified mountain and organic products, mountain and traditional, ecological and traditional) in the purchasing decision. These very specific emotional valences (over 200 ecologically certified farms in Bistra) were highlighted in the paper, with the aim of building an agro-food identity for Bistra products.

In the study undertaken, we have started from the concept that, as always in a marketing strategy, you use technical arguments related to consumer health (eco-certification) where possible, overlapping emotional elements (mountain certification) that are relevant to consumers with mountain origins and for lovers of nature, regardless of their origin.

The method used in this study to analyze the indicators of social, economic and traditional quality is the diagnostic method Euromontana which fall within the minimum and maximum measurement scale, a European multi-sectoral association for cooperation and development. Euromontana's mission is based on the promotion of mountain life, sustainable development and quality of life in mountainous regions (Euromontana, 2005).

Particularly in this study, the Euromontana method was applied by analyzing the products in

terms of territorial, environmental and ecological, socio-economic and brand protection indicators and sub-indicators, defined below:

Evaluation of territorial indicators

- brand concept “Mountain product”:
 - evaluation of production in terms of Mountain Association of plant/animal;
 - evaluation of upland production in terms of quality and technological level of the products;
 - evaluation of upland production regarding the quality ethnic products;
- definition of the area of origin (region):
 - the connection between the product and the geographical characteristics of the territory;
 - the connection between the product and the characteristics of the agricultural;
 - the connection between the product and the characteristics of agro-culture;
 - the connection between the product and the historical characteristics of the territory;
- territorial delimitation of area of origin:
 - the geographic delimitation points assessment;
 - rating points for marking socio-economic;
 - rating points for agro-cultural marking;

Evaluation of ecological indicators

- protection elements of the area of origin:
 - assessing the quality characteristics of the product waste;
 - evaluation of nutritional quality characteristics of the product;
 - organoleptic evaluation of the quality characteristics of the product;
- production methods processing and sale
 - environmental impact assessment of production methods;
 - environmental impact assessment of processing methods;
 - environmental impact assessment methods for sale;

Evaluation of social and economic indicators

- inventory innovative methods social, environmental and economic:
 - evaluation of innovative production methods in the territory;
 - evaluation of innovative processing methods in the territory;
 - evaluation of innovative methods for sale territory;
- vertical and horizontal chains mountain farm:

- evaluation of vertical supply mountain chains;
- evaluation of food horizontal mountain chains;

Evaluation of the “Mountain brand” indicator

- mountain brand protection:
 - evaluation method of local legal protection;
 - evaluation methods of national legal protection;
 - evaluation methods of international legal protection.

For Bistra area it was used as a method of study a grid that took into account indicators and sub-indicators values of territorial and socio-ecological, related to diagnostic method Euromontana which fall within the minimum (1 point) and maximum (10 points) measurement scale, as defined in Euromontana’s methodological rules.

To maintain and be recognized both nationally and internationally, this activity must be promoted and helped through a legal approach to the European Quality Regulation that integrates organic, traditional, local, mountain and ethical certification. Two of these five approaches, eco-certification and traditional attestation, fit well with the needs of this product and the specificity of the area (Bockstaller and Girardin, 2003).

Taking into consideration:

- in the Romanian mountains areas, farming is the main activity of the people,
- the necessity of a balance between consumption and production,
- the need for a favorable development in a sustainable way, both for people and for environment,
- the challenge for this study is to design the sustainable development of mountain areas, by implementing a better management of resources, based on “mountain products”. Thus, this paper aims **to investigate ways to obtain mountain certification for products from this area**, so it could promote agro-food products as a lever for sustainable development, that ensure economic activity. In the study below, some random farms in the Romanian villages and a number of related indicators will be analyzed.

Results and discussions

A basic agro-ecological indicator for the mountain certification of a product coming from the mountain area is its indissoluble link with the territory through the association between plants and specific animals. The assessment of

Table 2. Evaluation of territorial indicators

Item no.	Indicator analysed	Score obtained	The maximum score for the indicator
I1	Concept "Mountain product"- Mountain products are produced from animals, plants exclusively in the mountain and ate only feed produced in this area.	9	10
I 1.1	Evaluation of production in terms of Mountain Association of plant/ animal	9	10
I 1.2	Evaluation of upland production in terms of quality and technological level of the products	9	10
I 1.3	Evaluation of upland production regarding the quality ethic products	9	10
Total I1+I1.1+I1.2+1.3		36	40
I2	Definition of the area of origin- an inhabited region is a geographic area with special characteristics, in terms of cultural, historical or natural barriers that help designate an authentic product from this region	10	10
I 2.1	The connection between the product and the geographical characteristics of the territory	9	10
I 2.2	The connection between the product and the characteristics of the agricultural	9	10
I2.3	The connection between the product and the characteristics of agro-culture	9	10
I2.4	The connection between the product and the istorical characteristics of the territory	10	10
Total I2+I2.1+I2.2+I2.3+I2.4		47	50
I3	Territorial delimitation of area of origin – establishment of border points, product recognition only in territory	7	10
I3.1	The geographic delimitation points assessment	8	10
I3.2	Rating points for marking socio-economic	9	10
I3.3	Rating points for agro-cultural marking	10	10
Total I3+I3.1+I3.2+I3.3		34	40
TOTAL		117	130

floral biodiversity on pastures and meadows in connection with the species of mountain species allows for increased guarantees for consumers as regards the mountain origin of the product. Depending on this sub-indicator by association with the ethical production methods in the mountain area and with the generic technological elements of storage and transport resistance, a clearly defined geographical footprint of the product was created.

The resulting score after the evaluation of these indicators is presented in Table 2.

In the strategy for assessing the compliance of a mountain agro-food product an essential role is played by the scientific arguments that can prove

the intrinsic connection of the product with the territory. Thus, the assessment procedure (Tab. 2) took into account the geographic, cultural, agronomic and historical evidence linking the product to the territory. In this case the value of the indicators outlined in the Table 2 is one that allows us to easily correct an assessment and mountain certification of products of Bistra.

In order to be able to assess the geographical delimitation of a production territory in the minds of consumers, the certification procedure requires us to provide easy reference points for the general public, according to the indicators presented in Table 2. In this case, the assessment of the compliance procedure for the mountain

Table 3. Evaluation of ecological indicators

Item no.	Indicator analysed	Score obtained	The maximum score for the indicator
I4	Protection elements of the area of origin – elements to show the connection between natural mountain environment and the quality or characteristics of product.	9	10
I4.1	Assessing the quality characteristics of the product waste	9	10
I4.2	Evaluation of nutritional quality characteristics of the product	9	10
I4.3	Organoleptic evaluation of the quality characteristics of the product	9	10
Total I4+I4.1+I4.2+I4.3		36	40
I5	Production methods processing and sale- these methods must combine in a manner harmonious with the environment, to be conducted properly and on a small scale are specific to small farms.	9	10
I5.1	Environmental impact assessment of production methods	10	10
I5.2	Environmental impact assessment of processing methods	9	10
I5.3	Environmental impact assessment methods for sale	10	10
Total I5+I5.1+I5.2+I5.3		38	40
Total		74	80

certification of Bistra products takes into account landmark elements of the socio-economic (cooperage) and agro-cultural nature (Coopers' Festival).

The level of indicators allows us to fulfill the requirements of the specifications relating to the mountain certification of agro-food products from Bistra.

The ecological impact of mountain products is vital for mountain certification due to the fine association of consumers' minds with organic products and mountain areas. Even though the mountain certification legislation is not extremely restrictive in terms of the presence of some synthetic chemicals that can cause pollution, the consumer is extremely sensitive to the subject, which is why it was introduced as an indicator in the evaluation procedure. Organoleptic and nutritional quality indicators are intimately linked to the residual ciliate indicator in the minds of consumers and are therefore subject to this evaluation procedure (Tab. 3). The level of these 3 indicators allows for a safe mountain-based certification.

The environmental impact of methods of production, processing and sales of mountain products is an extremely important element from the point of view of the legislation and the expectations of consumers. In addition to legislative

constraints on the environment, we must take into account this consumer certification process. They make hardly the difference between different quality, ecological, traditional, local, mountain or ethical schemes in which they usually mix different legislative constraints for each product individually. In this context, the environmental impact remains an essential element and the Bistra agro-food products correspond to this point of view (Tab. 3).

For the mountain certification process of an agro-food product, we have to prove a set of practices and methods by which the producer creates social innovation in the production, processing and sales processes. This social innovation aims to quantify the care that the farmer has over his peers in these technological processes. The measures for the transparency of the production and processing activity in front of the consumer, which act as an element of monitoring the quality of the agro-food product, are evaluated. In the sales act, the length of the direct sales channels and their ecological footprint are assessed by the FOTO PRINT method. Thus, the social and ecological footprint of these working techniques falls within the limits of a correct mountain certification procedure for Bistra products (Tab. 4).

Another element that outlines the socio-territorial dimension of a mountain product is

Table 4. Evaluation of social and economic indicators

Item no.	Indicator analysed	Score obtained	The maximum score for the indicator
I6	Inventory innovative methods social, environmental and economic	8	10
I6.1	Evaluation of innovative production methods in the territory	8	10
I6.2	Evaluation of innovative processing methods in the territory	9	10
I6.3	Evaluation of innovative methods for sale territory	8	10
Total I6+I6.1+I6.2+I6.3		33	40
I7	Vertical and horizontal chains mountain farm	7	10
I7.1	Evaluation of vertical supply mountain chains	8	10
I7.2	Evaluation of food horizontal mountain chains	7	10
Total I7+I7.1+I7.2		22	30
Total		55	70

Table 5. Evaluation of the “Mountain brand” indicator

Item no.	Indicator analysed	Score obtained	The maximum score for the indicator
I8	Mountain brand protection	9	10
I8.1	Evaluation method of local legal protection	7	10
I8.2	Evaluation methods of national legal protection	10	10
I8.3	Evaluation methods of international legal protection	7	10
Total		33	40

related to the environmental risks that can occur within the vertical or horizontal food chains. Horizontal food chains are preferred, where the manufacturer integrates the three chains (production, processing and sales links) into his own farm, versus the vertical chains where these links are owned by 2 or 3 manufacturers, with the associated social and environmental risks. In the case of the Bistra commune, the producers organized themselves on a horizontal chain, given the history of the area, which has shaped an accentuated independent character for the moons in the Apuseni Mountains (the location of Bistra village), Romania.

Thus, the level of the parameters is one corresponding to the mountain certification procedure (Tab. 4).

The last element that can generate socio-territorial and ecological economic sustainability for the agro-food products in Bistra refers to the level of local, national and international

protection. Unfortunately, this indicator is still to be worked on, as farmers have only joined a national specification without integrating a local or international approach. The products in Bistra are in the European and national legislation for evaluation, but for the construction of a territorial branding dimension there is much work to be done in Romania on this subject (Tab. 5).

Analyzing the results obtained during the evaluation of territorial, ecological and socio-economic indicators, it has been noted that the score obtained by the Bistra village is one area above average, as can be seen in Figure 1.

After a complex analysis of the social, territorial and ecological indicators, results show that the Bistra village, Alba county, brings together the criteria relating to mountain certification, according to the European Regulations, improving the sustainable development of the area.

Figure 1. Analysis of the scores obtained from the evaluation of indicators

Conclusion

After analyzing the first four indicators presented (I1-I4) above (153 of 170 total points, i.e. a score of 90%, the conclusion is that is both necessary and achievable the establishment of a mountain specification encompassing products characteristic of the mountain region.

The last four indicators studied (I5-I8), cumulating 126 of 150 total points (i.e. a score of 84%) require an economic, technical and organizational approach that allows for the mountain region to define its own culture of its own products and to take some steps to market the products obtained at a higher price.

In Romania, one of the associations that support mountain certification is National Federation of Organic Agriculture, which allow a proper certification by developing a specification for every mountain product (and also for organic products), the favorable characteristics of the area, so this goal could be put into practice.

The term "mountain product", when is used in terms of food, also includes a promise of quality and should not disappoint. The term "mountain" is appreciated by consumers, perception among people is very positive. The price of agricultural and food products mountain areas should be higher, because both their production and distribution involves higher costs.

All the mountain products studied must be identified in the mountain region studied, so helping to promote the area as well as customer awareness of eating healthier, choosing mountain products. In the current economy, it is necessary to

create added value for mountain products as part of a smaller niche in order to maintain high market competition and higher prices so that these farms can cope with the competition over time.

The main conclusion of this study is that in the current economy it is necessary to create added value for mountain products as part of a narrower niche, in order to maintain high competition and higher prices on the market so that these farms could face competition over time.

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