

## Determining the criteria for the "mountain product" label in Bosnia and Herzegovina by using an example of the most important indigenous cheeses

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### Abstract

Labelling products as “mountain products” provides producers in hilly and mountainous areas with effective tools to improve marketing of their products and reduce the risk of confusion among consumers regarding the hilly and mountainous origin of products on the market. The European Union has adopted legal framework regarding optional quality schemes for hilly - mountain products. The definition of a hilly-mountainous area should be based on the general classification criteria used to identify the hilly-mountainous area. For third countries, mountain areas include areas that third countries have officially designated as mountainous or that meet the same criteria as those in the European Union (EU). Bosnia and Herzegovina (B&H), as well as some other countries in its vicinity, has not yet normatively prescribed criteria for the possibility of protecting the optional quality label “mountain product”. The main aim of this paper is to analyse and propose criteria for “mountain product” label in B&H and to evaluate potential of this scheme for three traditional cheeses. The authors used the desk research method and secondary data for this research, as well as the results of empirical research and comparison with regional countries. Taking into account the experiences of countries with similar geographical characteristics, but also following the production of the three most widespread indigenous cheeses, *Herzegovina cheese in a skin sack*, *Livno cheese*, and *Vlašić/Travnik cheese*, an attempt was made to find the best model for Bosnia and

Herzegovina where the label “mountain product” can be used for agricultural and/ or food products originating from mountainous areas.

*Key words:* mountain product, optional quality schemes, autochthonous cheeses

## Introduction

Geographical indication schemes (GI) promote and protect names of quality agricultural products and foodstuffs and encourage diverse agricultural production, protect product names from, inter alia, misuse, evocation and imitation, and help consumers by giving them information concerning the specific character of the products.

The GI of the EU gives producers a competitive advantage and contributes to its living cultural and gastronomic heritage. By implementing labelling for high quality GI products, producers are in position to better market labelled products having a positive impact on the rural economy. This is especially true in less-favoured areas, in hilly and mountainous areas and in the outermost regions, where the agricultural sector is an important part of the economy and where production costs are high. In this way, quality systems can contribute to and complement rural development policy as well as agricultural production support policies (Regulation (EU), 2012).

In order to promote and protect names of quality agricultural products and foodstuffs and encourage diverse agricultural production, protect product names from, inter alia, misuse, evocation and imitation, and help consumers by giving them information concerning the specific character of the products, the EU introduced three quality schemes that are recognised by their acronyms: PDO (Protected Designation of Origin), PGI (Protected Geographical Indication), and TSG (Traditional Speciality Guaranteed) (EC, 2007). Optional quality schemes are “higher quality mark”, “mountain product”, and “from my farm”.

The “mountain product” label is of importance to producers in hilly areas as an effective tool to market their products more successfully and to reduce the risk of creating confusion among consumers regarding the mountain origin of products on the market. The definition of a hilly-mountainous area is based on a general classification criterion used to identify a hilly-mountainous area. For third country products, mountain areas include areas that third countries have officially designated as mountainous or that meet the same criteria as those in the EU. The condition is that the production and processing on small mountain farms, where, as a rule, too small quantities of products are produced with regard to demand, are characterized by the following characteristics:

- Raw materials as well as animal feed are found in mountainous areas;
- Production and processing take place in mountainous areas (Regulation (EU), 2012).

BiH legal framework has recognised PGO, PGI, and TSG. Since BiH legislation does not still recognize the optional quality label “mountain product”, the importance and implementation preconditions for this quality schemes are analysed in this paper. In contrast to the EU member states, which have strong quality policy for recognition of geographic and traditional specificity of the agro and food products, BiH is in the early stage of establishing adequate framework conditions of the quality policy.

It has already been emphasized that quality systems are of greater importance where the agricultural sector is an important part of the economy and where production costs are high, especially in areas with difficult economic conditions. Agriculture, forestry, and fisheries in BiH contribute to gross domestic product (GDP) with about 8%. They employ about 18% of the total workforce, with about 1,781,000 ha of utilized agricultural area. A great deal of BiH is mountainous (66% of the territory is considered mountainous or hilly) with plots of small farms (SWG, 2020).

Nevertheless, in BiH, the production of autochthonous milk products has a great tradition. Despite numerous wars and displacement of the population, which have marked this area for centuries, as well as the increasing migration of the population from the countryside to the cities in recent decades, the production of indigenous cheeses has been preserved. The quality and composition of cheeses as well as their autochthony lie in, in addition to traditional technology, the autochthony of breeds from which milk is obtained as well as the diversity of plant species on pastures. The technology of production of most cheeses, as well as other traditional dairy products in BiH, is often simple, and therefore it is possible to produce them in modest conditions in hilly and mountainous areas. The production process has not changed much compared to the original method (Brenjo and Sarić, 2020).

## Material and methods

In order to carry out the research, the authors used the desk research method and secondary data, as well as the results of empirical research, based on many years of experience and work of authors in the agricultural sector and participation in development of food quality schemes in Bosnia and the Western Balkans region.

Secondary data sources in the analysis included: (a) published scientific papers by domestic and foreign authors in the analysed area; (b) studies and analyses published in the field by various domestic and international institutions; (c) searching internet sources; and (d) statistical offices.

The experiences of countries that have incorporated criteria for mountainous areas into their legislation, especially countries with similar geographical characteristics, primarily Slovenia and Montenegro, have been investigated.

Also, following the production of *Herzegovina cheese in a skin sack*, *Livno cheese*, and *Vlašić/Travnik cheese*, factual data confirmed that a large part of the production of all three products is performed in hilly and mountainous areas. For that reason, and taking the EU practice as well as the adopted strategic plans for rural development at various levels of government in BiH, the production of these cheeses in the hilly and mountainous areas of Herzegovina, the mountains around Livno and Vlašić was monitored. Based on the adopted official documents (municipal, cantonal, entity) for the areas of production of tested cheeses, data on altitude and terrain slope were used.

## Results and discussion

According to Regulation (EU) no. 1151/2012 mountain areas are characterized by significant limitations of opportunities for land cultivation and significantly higher costs of land cultivation due to:

- very difficult climatic conditions, and altitude, which significantly affect the duration of vegetation,
- at lower altitudes, on large slopes where it is possible to use machinery or which require very expensive special equipment,
- combinations of the two factors mentioned, in such a way that the difficulties they individually cause are less than their combination, but the combination of the above factors causes equal difficulties.

However, this raises questions of derogations from the conditions for the use of the optional quality term “mountain product”, in particular as regards the conditions under which raw materials or feed may come from outside mountain areas, the conditions under which product processing may take place outside mountain areas. It is necessary to define that geographical area as well as to determine the production methods and other criteria important for the application of the optional expression of quality “mountain product”.

Commission Delegated Regulation (EU) no. 665/2014 establishes the criteria for the application of the label “mountain product” to products of animal origin (Article 1), for different species of animals clarifies the requirement that feed comes mainly from mountainous areas (Article 2), determines the criteria for application of “mountain product” on bee products (Article 3), determines the criteria for the application of the “mountain product” label on products of plant origin (Article 4), lists the ingredients of products of plant and animal origin that may originate from outside mountain areas (Article 5) and it determines which processing activities can be performed within a certain distance from mountainous areas (Article 6).

Montenegro has regulated this area with the Law on Quality Schemes of Agricultural and Food Products ("Official Gazette of Montenegro", No. 22/2017). The "mountain product" label may be used to denote agricultural and/ or food products for the production of which raw materials and animal feed are used, mainly from mountain areas as well as for processed products, if the processing of these products takes place in mountain areas. Mountain areas must meet the following requirements: - whose average altitude is at least 700 m; or - average slope of at least 20%, and at least 50% of the area under the slope must have a slope of 20%, (water surfaces do not count); or - an average altitude of at least 500 m and an average slope of at least 15%. The Republic of Slovenia stated the following conditions: - average altitude of 700 m; or - an average slope of at least 20%; at least 50% of the surface must meet the slope criteria; or - average height of 500 m, and an average slope of at least 15%.

Taking into account the above criteria and geographical characteristics of BiH, the proposed criteria for the "mountain product" label can be used for agricultural and/ or food products originating from mountain areas is that they meet the following conditions:

- average altitude of at least 700 m, or
- average altitude of at least 400 m and an average slope of at least 15% where it is possible to use machinery or which requires very expensive special equipment
- combinations of the two mentioned factors, in such a way that the difficulties they cause individually are less than their combination, but the combination of the mentioned factors causes equal difficulties.

The structure of the agricultural sector has been characterized by small sized and economically weak family farms, which mostly produce for home (natural) consumption. Most of the atomized farms are usually not in position to compete in economics of scale, so its completeness should be based on "value-added" products such as "mountain products".

As the main topic of this paper is the analysis of potential of mountain products schemes for three cheeses in this part BiH, milk industry has been surveyed in more details.

Dairy occupies a leading position in the agricultural sector and it is a category of food products in BiH with the best ratio of the value of imports and exports. The production of fresh raw milk in BiH is one of the most important agricultural branches which, with the potential it has at its disposal, can be a stable backbone of agricultural and rural development. The importance of the dairy sector is reflected in the fact that dairy is:

- among the sectors with the highest value of primary production of 300 million KM per year,
- a sector that includes about 13,000 producers and thus significantly contributes to rural development,
- a sector that is extremely important for the food security of the country,
- a sector that is one of the most demanding in terms of standards to be met upon accession to the EU,
- a sector in which BiH has significant potential for further development (MoFTER 2020).

Primary production of raw milk is continuously decreasing from 701 million litres, as much as the annual production in 2016, to 643 million litres in 2019, which is 58 million litres or 8% less. The total production of raw milk in 2019 amounted to about 643 million litres and is lower compared to the production of the previous year by 35 million litres or 5%. The share of milk production in the total milk production in Bosnia and Herzegovina on average amounts to 53% in the Federation, 46% in Republic of Srpska, and 1% in Brčko District.

Tab.1. Production of raw milk in BiH (000 litres) (AzS BiH, 2020)

	2016	2017	2018	2019
Federation of BiH	373,623	363,900	365,249	329,068
Republic of Srpska	320,583	311,362	309,267	307,716
Brčko District of BiH	6,960	6,651	5,744	6,036
Total	701,166	681,913	678,242	642,820

If we analyse the state of milk production in the Republic of Srpska in the last decade, we can see a trend of decreasing number of dairy cows and a decrease in the amount of milk produced in the Republic of Srpska. For the 2016-2019 period there was a reduction in the amount of milk produced from 321 million litres to 307 million litres per year.

Tab. 2. Milk production in the Republic of Srpska 2016-2019 (in million litres) (SORS RS, 2019-2020)

Year	Number of dairy cows (000)	Total milk	Cow's milk	Sheep's milk	Goat's milk
2016	106	321	314	5	2
2017	101	311	305	4	2
2018	96	309	304	3	2
2019	91	307	302	3	2

Hereunder are analysed three most perspective cheeses for the “mountain product” label in BiH.

## Indigenous cheeses and hilly and mountainous areas

The area of production of Herzegovinian cheese in a skin sack extends to the entire territory of Herzegovina. Also, all milk, even the purchased one, intended for the production of this cheese should come exclusively from the designated area. Herzegovina as a natural region consisting of two micro-regions: low (coastal or Adriatic) Herzegovina and high (upper or mountainous) Herzegovina. High Herzegovina includes the basin of the upper and middle Neretva, a significant part of the Dinaric region of Bila and Polje, high mountains: Velež, Volujak, Prenj, Crvanj as well as karst fields: Nevesinjsko, Gatačko, and others. Low or Adriatic Herzegovina extends around the lower course of the Neretva river and in the basins of the Bregava and Trebižat rivers, includes Popovo field, Mostarsko field and valley, part of the Neretva mud and Trebinjsko field. The traditional production of Herzegovinian cheese in a skin sack has mostly remained in the municipalities with the highest altitude, Nevesinje, Gacko, and Prozor/ Rama. Nevesinjsko and Gatačko polje are at an altitude of 850 m to over 1,000 m above the sea level, while the municipality of Prozor/ Rama is located at an altitude of 330 to 900 m above the sea level with large slopes. Nevesinje field is a karst field, with a total area of 77.5 km<sup>2</sup> with an average altitude of 817 m, which is surrounded by the mountains Crvanj, Velež, Somina, and the Morina plateau. The climate is sub-Mediterranean with very cold and snowy winters and warm summers. The flora is rich, with over 271 species of various plants, among which are numerous marsh species related to wetlands, and there are also numerous rare endemic species (Ballian, 2018).

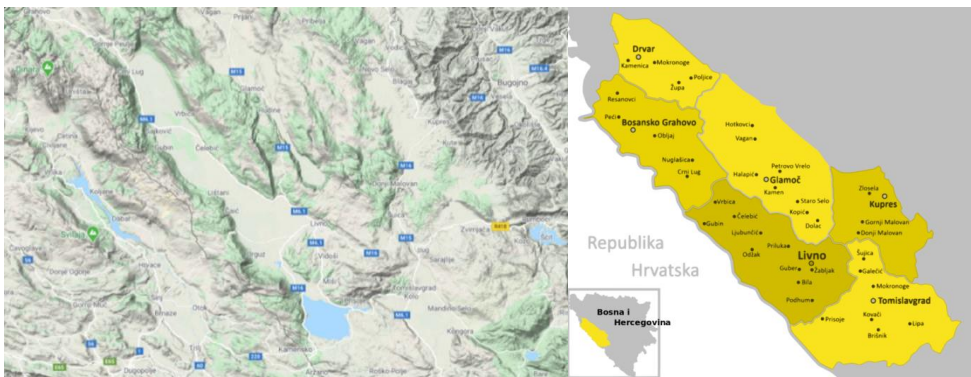
When the production of the *Herzegovina cheese in a skin sack* is taken into account, it is very important to mention the Karst plateau Morine. It stretches for about 30 km east of Nevesinje towards Kalinovik, along a macadam road built during the Austro-Hungarian Monarchy, along the route of the old Roman road.



Picture 1. Geographical area of production of *Herzegovina cheese in a skin sack* (Brenjo, 2020)

In the west, the plateau is bordered by the Crvanj mountain, in the northwest and northeast by the Neretva canyon, and in the east and southeast by the mountains in Montenegro. Morine highland covers about 47 km<sup>2</sup> at an average altitude of 1612 m (Ballian, 2018). This plateau, where over 200 species of various herbs grow, including numerous medicinal herbs, has been home of *Herzegovina cheese in a skin sack*, also called *Morinski cheese*, production since ancient times (Picture 1).

The production of *Livno (Livanjski) cheese* takes place in the area of Canton 10 (one of the ten cantons of the Federation of Bosnia and Herzegovina entity) with its central location in Livno, which includes the territory of the following municipalities: Livno, Tomislavgrad, Kupres, Glamoč, Bosansko Grahovo, and Drvar.



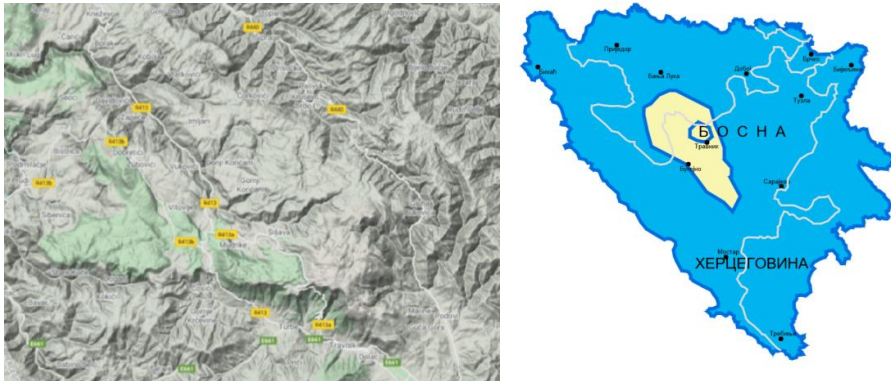
Picture 2. Geographical area of Livno cheese production (Brenjo, 2020)

All these municipalities are located in the area of fertile, vast fields and pastures, rivers, and lakes with an altitude of 700 to over 1,200 m. The largest fields are Livanjsko (700 to 800 m above the sea level), Duvanjsko polje (860-900 m above the sea level), Kupreško polje (1,130 m average above the sea level), Glamočko polje (900 m above the sea level), and Grahovsko polje (700-870 m above the sea level). Livanjsko polje, as the centre of production of Livno cheese, is about 65 km long and it is the longest karst field in BiH, but it is quite narrow and its average width is about 6 km and the total area is 405 km<sup>2</sup>. It is surrounded by high mountains Dinara, Kamešnica, Tušnica, Krug, Golija, and Šator. Although located in the sub-Mediterranean zone, it has long and cold winters, very often with abundant snowfall, with characteristic strong winds to the south and a north wind bora (Ballian, 2018). According to the same author, today there are numerous plant species related to peat, primarily representatives of marsh vegetation, and there are several endemic species in Livanjsko field.

*Vlašić/Travnik cheese* is not only produced on the Vlašić mountain, but in a much wider area. Production is expanding from Vlašić, as its centre, to all nearby mountain areas. The area of production is defined in much wider limits



than the area where cheese is produced, because sheep go to remote pastures during the summer and hay is stored for winter feed across large areas. Most of the Vlašić mountain is located in the Central Bosnia Canton in the Federation of BiH and part of Republic of Srpska. The Vlašić plateau, which is today recognized for its developed winter tourism, is located at 1,260 m above the sea level.



Picture 3. Geographical area of Vlašić/ Travnik cheese production (Brenjo, 2020)

## Conclusion

The “mountain product” label according to the results of this paper is important for small traditional farmers in BiH. The following criteria for mountain products are proposed:

- average altitude of at least 700 m, or
- average altitude of at least 400 m and an average slope of at least 15% where it is possible to use machinery or which requires very expensive special equipment,
- combinations of the two mentioned factors, in such a way that the difficulties they cause individually are less than their combination, but the combination of the mentioned factors causes equal difficulties.
- If you would apply the above criteria for the tested cheeses:
- the largest number of producers of *Herzegovinian cheese in s skin sack* would meet the conditions to bear the “mountain product” label,
- all producers of *Livno (Livanjski) cheese*, and
- all producers of *Vlašić/ Travnik cheese*.

The importance of the mountain products schemes derives from the structure of the BiH farms which are characterized by small sized and

economically weak family farms, which mostly produce for home (natural) consumption. Most of the atomized farms are usually not in position to compete in economics of scale, so its completeness should be based on “value-added” products such as mountain products.

As the GI quality schemes are of great importance for BiH further research in this area is recommended.

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# Одређивање критеријума за ознаку „Планински производ“, у Босни и Херцеговини, на примјеру најзначајнијих аутохтоних сирева

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## Сажетак

Шема квалитета “Планински производ” омогућава произвођачима у брдско-планинским подручјима да обезбједе дјелотворно средство за успјешније стављање на тржиште својих производа и смањење стварног ризика од стварања забуне међу потрошачима у вези с брдско-планинским поријеклом производа на тржишту, Европска унија је донијела одредбе за одређивање појма квалитета за брдско-планинске производе на нивоу Уније. Дефиниција брдско-планинског подручја требала би се заснивати на општим критеријумима разврставања који се користи за идентификацију брдско-планинског подручја. За производе трећих земаља, планинска подручја укључују подручја која су треће земље службено означиле као планинска или која испуњавају критеријуме исте као оне у ЕУ. За потребе истраживања аутори су користили деск метод истраживања и секундарне податке, као и резултате емпиријског истраживања. Босна и Херцеговина, као и још неке земље из њеног окружења, није још нормативно прописала критеријуме за могућност заштите необавезне ознаке квалитета „Планински производ“. Узевши у обзир искуства земаља са сличним географским карактеристикама али и пратећи производњу три најраспрострањенија аутохтона сира; *Херцеговачког сира из мијеха*, *Ливањског сира* и *Влашићког/Травничког сира*, покушало се доћи до најбољег модела за БиХ гдје се ознака „Планински производ“ може користити за пољопривредне и/или прехранбене производе који потичу са планинских подручја.

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