Building Geographical Indications in Western Balkans Countries

Case studies from Kosovo and Montenegro
on Sharri and Pljevlja Cheese

Collective report of
the Advanced Master "Forest, Nature & Society"
Option "Nature and Society Management at an International level"
Teaching module " Environmental assessment of international projects on natural resource management"
From 22nd of February to 27th of March 2016

Study realised by:
Marion Cassu, Amélie Chauveau, Alexandre Haslé de Barral, Yann Le Doré, Yohann Legraverant, Jean-Baptiste Rostaing, Adrien Staquet, Alizée Vallé, Lionel Viard

Mentored by:
Sandra Nicolle & Maya Leroy (AgroParisTech)
Claire Bernard & François Lerin (CIHEAM-IAMM)

June 2016

- *This report is produced in the frame of the BiodivBalkans program*
  - Funded by the French Fund for Global Environment (FFEM)
  - Co-implemented by the Albanian Mountain Area Development Agency (MADA) as operating agency & CIHEAM-IAMM, as reflexive pole and co-financer.
- *This action was co-financed by :*
  - BiodivBalkans & AgroParisTech was supported by the French Embassy in Kosovo.
- *It also benefited from the support of Regional Partners:*
  - Kosovo Ministry of Trade and Industry, Kosovo's Industrial Property Agency (IPA)
  - Kosovo Ministry of Agriculture, Forestry and Rural Development, Department of Agricultural Policies and Markets, Livestock Division
  - Kosovo International Leadership Club
  - Montenegro's Ministry of Agriculture and Rural Development
  - Donja Gorica University, Montenegro
  - French Embassy in Montenegro

FOREWORD

The training and research group for the Environmental Management of Ecosystems and Tropical Forests (www.agroparistech.fr/geeft) hosts every year an Advanced Master specialized in Forest, Nature and Society, option Management Nature and Society Abroad, dedicated to teach social and environmental stakes in the management natural resources in an international context.

As part of the curriculum, a collective field study in a foreign country is realized, in partnership with professionals and scientists from the hosting countries. It enables the students to apply the broad range of technical, theoretical and methodological competencies that they developed throughout the year. The study is coordinated both by teachers of AgroParisTech-GEEFT and by their partners. It spans through a period of 5 weeks: one week of preliminary work in Montpellier, followed by 3 weeks of fieldwork and data collection, concluded by a presentation in the host countries, and eventually a last week of report redaction in Montpellier.

This year, this teaching module took place from February 22th, until March 27th, 2016, including three weeks on the field – respectively two in Kosovo (from February 28th to March 12th, 2016) and one in Montenegro (from March 13 to 19th, 2016). It aimed at contributing to the BiodivBalkans research-action project for fostering biodiversity conservation and rural development. This program is co-implemented by the Albanian Mountain Area Development Agency (MADA) and the International Center of Advanced Mediterranean Agronomic Studies, Institute of Montpellier (CIHEAM-IAMM), and funded by the French Fund for World Environment (FFEM). Though mostly focused on Albania, the BiodivBalkans program also includes a "regional approach" and thus tries to extend the reflection to neighbouring countries. In the perspective of a conference held at the end of 2016, Kosovo and Montenegro have been spotted as interesting partners due to their dynamism in setting up Geographical Indications (GI) frameworks.

The field work benefited from the help of 4 students from the International Leadership Club of Pristina during our two weeks in Kosovo; not only as translators but also to better understand the country's culture. Similarly, 4 students from the University of Donja Gorica (Podgorica) assisted he French students during the week in the Pljevlja municipality. The group of students was coordinated by teachers from AgroParisTech: Sandra Nicolle and Maya Leroy; as well as researchers from the BiodivBalkans project: Claire Bernard-Mongin and François Lerin. A presentation of the results was organized in Prizren, Kosovo, halfway through our field study, a second one in the University of Donja Gorica of Podgorica at the end of the field study; a last one at AgroParisTech in Montpellier upon arrival.The following report is a synthesis of the main results. It was written by the 9 students who conducted this study and then reviewed by the coordinating team (AgroParisTech and CIHEAM-IAMM).

ACKNOWLEDGEMENT

We would like to thank:

- All the people we have interviewed, for their kindness, their hospitality and their knowledge. They made this trip unforgettable and we have learned a lot from them. This study could not exist without them. Thank all of you again,

- Sandra Nicolle and Maya Leroy from AgroParisTech for the support and the supervisory job they have done,

- Claire Bernard-Mongin (CIHEAM) and François Lerin (CIHEAM) for having guided us, given us advice and offered us to make this riveting study,

- Veli Hoti (Intellectual Property Agency from Kosovo) and Dr Aleksandra Martinovic from University of Donja Gorica of Montenegro for the way they welcomed us,

- The eight translators for all the good time we had together, for all the translations they did (sometimes hard ones!), and for the advice they gave us every day. We have met new persons but they have become new friends now.

- All the persons we have met on the road, who accommodated us with kindness, who helped us in some way… thank you!

EXECUTIVE SUMMARY

Geographical Indications: for whom, for what?

The aim of this study was to inform the Geographical Indications (GI) building process in Western Balkans countries though two case studies similar enough to draw some general conclusions in a comparative perspective.

Both Kosovo and Montenegro are engaged in the same convergence process with the European Union through the adoption of the *acquis communautaire*. In this "Europeanization" dynamic, the two countries are at a different stage (potential candidate versus candidate country). However, Geographical Indications implementation is identified as a political priority in both countries for agriculture and rural development. To that end, governments are working to adapt their national legal and institutional frameworks to the European standards and requirements. In parallel, they are also working to identify some emblematic pilot's products that could be registered as GI in a near future.

Sharri Cheese in Kosovo and *Pljevlja Cheese* in Montenegro are two traditional livestock products, already benefiting from a local and national (and even regional) reputation based on their origin and quality, and therefore susceptible to be registered as GI. Moreover, these two pastoral products are representative of the current challenges and opportunities faced by rural mountainous territories all over Europe: rural exodus, decreasing territorial attractiveness, mutation of traditional economic activities, and erosion of natural and cultural heritage.

PERSPECTIVE

That is the reason why this study aimed at informing the maturation stage of the GI building process in a twofold perspective:

- **What are the strategic choices made/ to be made in the GI building process in each cases?**
- **To what extend GI can be used as a tool for rural development and agro-biodiversity conservation?**

KEY STRATEGIC ISSUES

A grid of five descriptive criteria was used to inform each country specific GI setting, highlighting "key strategic issues" to be answered throughout the GI building process. These key issues are technically necessary to comply with EU requirements and strategically important for the territories and communities considered.

- **Product definition**: from embracive to exclusive. In the case of cheese products, a number of characteristics have to be specified, such as milk quality: cow/sheep, mixed milk, pasteurized/non pasteurized, production practices: pastoral/ non specified, seasonal/all year long as well as production process: industrial/artisanal/farm cheese, etc.

- **Territory delimitation**: a GI must identify a product as originating in a given place. The designation of the original place of production can be based on "identities" criteria, geographical characteristics (altitude, type of land, etc.), places of production and/or transformation (inclusion, or not, of the low lands, urban centre, etc.).

- **Collective action:** GI building is not only an issue for producers (shareholders) but also a wide range of other actors can possibly be involved (stakeholders) - depending on the situation and the local/national dynamics. Existing professional organizations, divergent or convergent interests and visions are important elements to be identified to better understand the consequences of the choices made in term of products and territory.

- **Match and combinations**: the analysis had also to describe and evaluate the congruency between the GI sign chosen and the market situation and opportunities. Combinations of signs are also possible (PDO, PGI, additional specifications such as: farm cheese, pastoral cheese, or combination with other labels: Organic, Park umbrella brand, etc.)

- **GI building process and legal framework**: choices made regarding the "key strategic issues" identified need also to be contemplated vis-à-vis the actual state of maturity the legal and institutional framework (conformity of national law and decrees with EU standards, designations of registration and control bodies and procedures, etc.)

The methodology mobilised is this preliminary work is mainly based on qualitative interviews, completed with street survey, direct observation and literature analysis. Results are based on a three week field work during March 2016.

KOSOVO

In Kosovo a law on GI has been approved at the beginning of 2016. It is adequacy with the *acquis communautaire*. But at the local level, in the Sharri Mountain and for the Sharri cheese registration and collective action, it is the very beginning of the process… and almost all possibilities are still open for the key strategic issues.

Indeed, the product itself is not well stabilised. Sharri cheese refers to a wide range of products from **raw-milk ewe cheese** produced at the farm, sold in the local market to **semi-industrial pasteurised cow cheese**, sold all over the country in shops and supermarkets. But there is also a strong common basis for all type of cheeses, including the fact that all farmers' cheese (from all communities) are produced with a common set of techniques and practices. At the same time, pastoral practices are evolving with a decrease of the total number of flocks and animals, and a growing trend to use more cows' milk instead of sheep to produce the famous Sharri cheese.

This study also shows that the limits of the territory are even not stabilized. Each community (Albanian, Goran, Bosnian or Serbs) tend to define the product and its territory from their perspective (with technical, historical, cultural arguments). Some choices have to be made regarding the mere geographical definition of the territory, putting (or not) the emphasis on pastoral resources and high mountain area, or giving more room to other subdivision of the region – including or not the Prizren low lands.

But if all choices are opened, the field-work and this report emphasis the pastoral component of both the product and the territory. The reputation of the cheese (local, national and abroad) is related to pastoral practices, and this is historical evidence. Pastoral practices are also an essential element for strengthening the environmental management of the zone and also to maintain the reputational characteristics of the product. This statement is not only related to our "environmental biais" (which exists!) but also its combination with rural mountain development issues, widely shared at European level and beyond.

The GI crafting, at the local level, with the technical definition of the product and the delimitation of the territory (both precisely needed for a coherent GI file) is therefore a complex strategic step.

Brokers are needed to identify actors' practical and economic interests and to propose a bargaining and arguing arena of discussions to find a possible solution.

Regarding this complex situation (actors, territory, product) this report raises the possibility of nesting signs of different extent or characteristics - but under a common Sharri cheese denomination - to overcome the possible blocking due to very different visions and interests and thus leadership in the collective action.

Finally this report shows the necessity to include the GI building process in a broader perspective – regarding especially subvention scheme and Value Chain support to overcome the bottlenecks of the livestock pastoral producers in the region – but this assessment is also valid in the case of Montenegro.

MONTENEGRO

In Pljevlja region (norther east of Montenegro), **product and territory definitions are quite homogeneous** and stabilised. Today, cattle livestock is more important that sheep livestock, and cheese sold in the market under the name of Pljevlja cheese is mainly made out of cow milk. This cheese is historically related to pastoral farming systems and flock mobility, but rural exodus provoked also important changes in pastoral practices. Transhumant herders are now a very small minority, and most of livestock breeders are using pastoral areas nearby their production unit. In these short distance pastoral systems, the main issue concerning the product definition is the **pasteurization of the milk**, realised by semi-industrial players considering that pasteurization is necessary for reason of hygiene and food safety norms. National institutions seem to favour traditional products in order to valorise them on local markets especially on the coastal area during the summer tourist season.

COMPARATIVE ANALYSIS

Even if the Montenegrin GI building process was studied in less depth due to the very short time the team spent in this country, the report tries to provide some elements for a "comparative" analysis of Pljevlja and Sharri cheese. It is clear that Montenegro and Kosovo are sharing the same strategic intention regarding GI: the use of this European tool as a market instrument for strengthening local and farmer's activities. They are also facing similar set of choices in term of GI development that could end in two contrasted scenarios, benefiting different categories of Stakeholders.

In both GI building processes, three categories of Stakeholders, directly involved in the cheese production have been identified:

(i) *Traditional producers*: some farmers produce cheese directly on their farms with their own milk. These players, sell their cheese directly to customers (on the farm or the green market) or to intermediaries. Most often, they are not officially registered. Their production processes do not comply with hygiene and security standards. It makes it nearly impossible for them to sell their milk on the formal market (and particularly in shops and supermarkets).

(ii) *Modernized producers:* few farmers have modernised their exploitation, often thanks to subsidies, which allows them to respect hygiene and security norms and to have access to the national market with farm products. This category is more represented in Montenegro than in Kosovo.

(iii) *Milk processors*: visited dairies are small to medium size milk unit transformations. They comply with hygiene and security norms, and systematically pasteurize the milk before cheese production. They sell their products at the national scale, through shops and supermarkets.

(iv) Finally, even though we didn't meet them, it seems that other players (national or from other countries as well) also produce some cheese under the name "Sharri cheese" or "Pljevlja cheese", even though they are not working on these territories.

Depending on the composition of the forums established to discuss the key strategic issues, and the inclusiveness/representativeness of these different stakeholders categories in the general GI building process, different objectives and interests will probably be stressed, in two different settings:

1) *Scenario 1: the Value Chain "at large" with semi-industrial leadership*

In a context declining rural territories, building GI as an inclusive tool to reinforce existing traditional dairy value chains and secure market opportunities for both milk and cheese production can be a first option. Drawing on milk processors dairies and collection points, this GI building process would include also traditional and modernized producers, giving them the possibility to sell their milk at a better price and maintain their activity, securing a product on a large market.

2) *Scenario 2: market segmentation, short value chains and farmers leadership.*

On territories that have suffered from strong rural exodus (and post-war syndrome), a smaller collective action, involving a group of stakeholders extremely motivated, could be another way of developing a GI. Short value chains promoting "traditional cheese", valorizing a local product, on niche market, will help to secure market for traditional and/or modernized cheese producers.

It seems that in Montenegro, for Pljevlja cheese, the second scenario is more likely. Stakeholders that are today active toward a GI implementation on Pljevlja cheese are closer to the Ministry of agricuture.

In Kosovo, in the Sharri Mountains, the options are quite opened. Currently, it seems that modernized producers are not numerous enough to trigger a GI process per se or weight in an inclusive GI orientation. Dairies are the most organised among potentially interested players. Their vision of the GI would be unfavourable to small farmers' production of raw milk cheese and more generally of sheep cheese.

But as we mentioned previously an appropriate combination of labels, signs and brands is possibly the solution to this type of antagonism. Antagonism that surely shall end in an inadequate GI dynamics in terms of rural development, sustainable use of natural resources, protection and valorisation of the natural and cultural patrimony.

GENERAL TABLE

ACRONYMS TABLE

CIHEAM	Centre international des hautes études agronomiques méditerranéennes
EBRD	European Bank for Reconstruction and Development
EU	European Union
FAO	Food and Agriculture Organization
FFEM	Fond français pour l'environnement mondial
FNS-MNSI	Forêt, Nature, Société - Management, Nature, Société à l'international
FVA	Food and Veterinary Agency
GEEFT	Gestion environnementale des écosystèmes et des forêts tropicales
GI	Geographical Indication
GIZ	Gesellschaft für Internationale Zusammenarbeit
IAMM	Institut agronomique méditerranéen de Montpellier
IPA	Intellectual Property Agency
IPA	Intellectual Property Agency
MoA	Ministry of Agriculture, Forests and Rural Development
MoT	Ministry of Trade and Industry
NGO	Non governmental organization
PC	Pljevlja cheese
PDO	Protected Designation of Origin
PGI	Protected Geographical Indication
SC	Sharri cheese
SNP	Sharri National Park
TSG	Traditional Specialty Guaranteed
TSG	Traditional Specialities Guaranteed
USAID	United States Agency for International Development
WTO	World Trade Organization

FIGURES

TABLES

BOXES

ANNEXES

INTRODUCTION

This report presents the analyses of the environmental, social and economic assessment of the geographical indication implementation in Kosovo and Montenegro.

More precisely, the purpose of the study is to help the BiodivBalkans project to give arguments and facts to regional partners in using GI as a tool to foster rural development and agro-biodiversity conservation in Kosovo and Montenegro.

Two well-known products and their regions of production were suggested:

- in Kosovo, the Sharri cheese, emblematic product of the Sharri mountains that could benefit from a GI due to a new law on GI and intellectual property voted in early 2016;
- in Montenegro, the Pljevlja cheese, also emblematic and produced in the northern municipality of Pljevlja and which GI creation is already under way

After a brief presentation of the GI concept, we present the request of the BiodivBalkans project, the fields studied and our research questions (Chapter 1), and the methodology we used (Chapter 2). Then, we decline the study in two monographs: one for the Kosovo (Chapter 3) and one for the Montenegro (Chapter 4).

CHAPTER 1:
HYPOTHESIS & RESEARCH QUESTIONS

1 Developing GI as a tool for rural development and agro-biodiversity conservation in the Western Balkans candidate countries: hypotheses

BiodivBalkans project (2012-2016) is a research-action project in Balkans Mountains, aiming at crossing environmental injunction of biodiversity conservation with economic objectives of rural development (Bernard et al, 2014). Particular focus has been made on several rural regions, characterized by an agro-sylvo-pastoral way of farming. The project is financed by the French Fund for World Environment (FFEM – *Fonds Français pour l'Environnement Mondial*), and jointly implemented by the Albanian Mountain Development Agency (MADA) and the International Centre for Advanced Mediterranean Agronomic Studies, Institute of Montpellier (CIHEAM-IAMM). Up to now, BiodivBalkans project has been mainly implemented in Albania. In its final year, the project seeks to capitalize and share experiences at a regional level. In this perspective, a European meeting on GI in Balkans' countries will be held in October 2016.

The main hypothesis of BiodivBalkans' approach is that the building process of an appropriate label (quality, origin, sustainability or equity) may provide an effective tool for territorial development and conservation of agro-biodiversity (Bérard and Marchenay, 2006).

> *"The main hypothesis is that the building process of an appropriate label of quality/origin/equity/sustainability could provide an effective tool for territorial development and conservation of agro-biodiversity." BiodivBalkans website (2014)*

The second hypothesis is that the current EU Accession Process and the adoption of following legislative and institutional framework offer an opportunity for rural territories to be better integrated into public choices. In that perspective, Geographical Indications can be envisioned as a complementary tool for rural development strategies aiming at combining protection of natural and cultural heritage while maintaining economic activities, mainly based a traditional used of natural resources. However, current socio-economic trends occurring in rural areas are questioning the viability of such activities. In that context, to what extend Geographical Indication can be used as a tool to foster collective action, promote organizational innovations, and answer part of the socio-economic needs of rural communities?

1.1 Geographical indications and agrobiodiversity: a positive relation to be confirmed

The diversity of local products is also expressed by their social status and history, as well as in the various production techniques (Bérard & Marchenay, 2006). These products all have a particular relationship with territories (*Ibid*.). Their inscription in a place is related to their historical roots and the collective practices that produce them.

Today, geographical indications (GI) have an international reputation (Sylvander, 2005). GI are economic tools designed to create a specific market by differentiating products on the basis of their specific link to a given territory. Their founding principle is the legal protection of the geographical name attached to the product.

As such they don't have a biodiversity conservation objective. However, as they often promote low intensive traditional practices, they are increasingly being presented as tools that can ensure an environmental protection of some territories (Sylvander et al., 2006).

Thus, the hypothesis proposed by the BiodivBalkans project is that promoting local products and the specific agricultural practices associated will allow conserving and even enhancing agrobiodiversity, and more generally biodiversity.

> *"The Balkan Mountains harbour highly diverse flora and fauna, the principal re-sources to preserve in the region. In the meantime, local populations are extremely poor and are making their living out of the exploitation of natural resources, whether through farming, cattle breading or gathering. In that context, labels of quality, especially Geographical Indications or organic farming, make it possible to improve product prices and added value for producers while encouraging the preservation of biodiversity by introducing environmental specifications."* *BiodivBalkans website (2014)*

However, this positive relationship between biodiversity and appropriate labels of sustainable development cannot be taken for granted (Jonhs et al., 2013). A number of scientific studies have shown that the ability for a GI to protect interesting biodiversity of agro-ecosystems is dependent on the requirements defined for the production process. The definition of these requirements is a highly strategic negotiation process (Ansaloni et Fouilleux 2012; Fournier 2009) both inside the agriculture sector and between agriculture and other economic sectors. Conserving agrobiodiversity through a GI therefore implies to understand in detail the environmental, social and economic context in which the GI is implemented.

1.2 Montenegro and Kosovo: taking advantage of the EU Accession Process to build GI as a tool for rural development?

In order to enter the EU, all candidate countries have to absorb the European regulations in their national laws. Therefore, Kosovo and Montenegro are undergoing the same convergence process toward the EU legislation – the so-called "*acquis communautaire*" adoption, with the difference that Montenegro is already recognized as "Candidate Country" and has started to negotiate all the Chapters of "Aquis Communuataire "adoption whereas Kosovo is still in the position of "Potential Candidate", at a lower stage of negotiation. However, in both countries, Geographical Indications as a part of the EU regulation on Intellectual Property Protection (EU regulation No 1151/2012 *on quality schemes for agricultural products and foodstuffs*), are identified as an important point of the legal convergence process.

In Montenegro, a first law on quality signs and GIs has been adopted in 2011 (Law No18/11). However, it should be amended in 2016 and then implemented in 2017. The main changes foreseen are related to the introduction of a "code of practices", the specification of the registration process and the regulations and sub laws related to the implementation of the law. These changes are aimed to ease, accelerate and increase registration of new products, by providing clear guidelines.

In Kosovo, a new law on Intellectual Property Rights has just been issued at the beginning of 2016 (Law N05/L-051). It established the juridical framework for the protection of name and origin of food and agricultural products in accordance with EU standards on Geographical Indications.

Figure 1 : Existing legislative framework for GI protection in Kosov & Montenegro

At the moment, the two countries have no products registered as PGI under the European intellectual property protection scheme. They are in the same process of selecting local and/or traditional products to be registered under the newly established PGI scheme. In addition to this legal aspect, GI could be a way to anticipate and give some products and practices a protection to the integration into the EU, which will lead to a total market opening and could destabilize the local value chains of these products that are already in mutation.

In this context, the aim of this collective field study is to describe and compare two different PGI building processes in Kosovo and Montenegro.

The objective is to better inform the nascent collective action processes around PGI and study the convergence between a generic legal and institutional framework established at national level with local situations (players, natural resources, value chains, etc.) in the designation of product and its territory or origin.

2 Two case studies: mountainous territories and pastoral products in Kosovo and Montenegro

We analysed two different locations and products in order to make a comparative study (Figure 2). This approach is possible because there are enough similarities between the two areas (mountainous location, economy, history) and the two products (both traditional milk products).

2.1 Two mountainous territories: the **Sharri mountains** (Kosovo) and **Pljevlja region** (Montenegro)

In Kosovo, the Southern mountainous range of Sharr was selected as the first case study, and in Montenegro, the second field work was focused on the Northern areas of Plejevlja.

Figure 2. Representation of the two study area in black in Kosovo and Montenegro.
(Source: OpenStreetMap contributors)

The two regions studied present mountainous and pastoral landscapes. The lowest point of the Pljevlja municipality is 529m (Tara river), while most of the municipality is above 800m (the city of Pljevlja being at 770m above sea level). On the other side, the Sharri Mountains peak up at 2748m.

Both regions have had a recent social, economic and demographic history leading to major issues regarding agrobiodiversity loss. In both case, a strong rural exodus is leading to a demographic decline: younger people flee towards larger cities and small villages are getting empty. As a consequence, a widely spread fear among producers that no one will continue those pastoral practices in the future: cheese/milk producer is considered a tough and low-rewarding job.

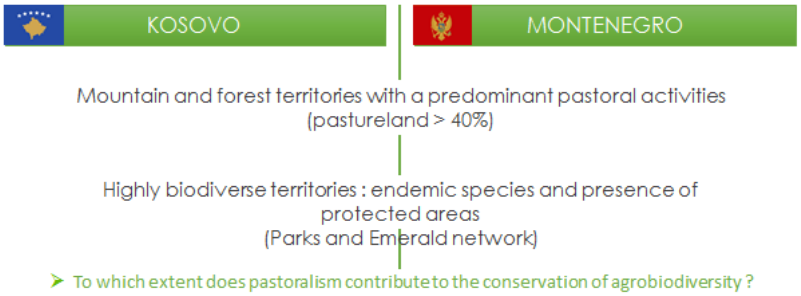


Figure 3 :Schematic view of the environemntal stakes of the case studies

2.2 Two emblematic pastoral products: "**Sharri cheese"** in Kosovo and "**Pljevlja cheese"** in Montenegro

Two traditional pastoral cheeses have been identified as potential GI products: Sharri Cheese in Kosovo and Pljevlja cheese in Montenegro.

2.2.1 Sharri cheese: a traditional product from the Sharri mountains.

Sharri cheese is an emblematic product from the Sharri Mountains, where it has been produced for centuries. In old times, it was a way of milk conservation and transportation particularly adapted to pastoral breeding systems, and highly appreciated on the local markets (University of Prishtina, 2013). This hard cheese is known all over Kosovo and is considered a premium product (Miftari, 2009).

It was traditionally produced out of sheep milk because sheep can easily go in highland pastures whereas it is more difficult with cows (University of Pljevlja, 2013). Today, a growing proportion of a larger quantity Sharri cheese is produced from cow's milk. In the last decades, industrial producers

started to produce Sharri cheese out of pasteurised cow milk. Traditional producers still produce it with unpasteurised milk, but Ferati *et al.* (2013) show that this unpasteurised cheese fits with sanitary legislation. Today, even if the process is quite similar in the whole Sharri region, Sharri cheese presents a strong chemical variability from a producer to another (Rysha & Delaš, 2014).

In Kosovo, this cheese has been selected as a pilot product for GI implementation, for at least two reasons. First, there are more and more products sold as Sharri cheese, but that are produced in other parts of Kosovo, or even in foreign countries: the GI would therefore be a way to protect the local production of Sharri cheese (KOPDA & KAMP, 2012). Second, it is seen as a way to support the rural development of the Sharri mountains, while maintaining high biodiversity in mountain highlands. A GI project on sheep cheese has already been started on this basis by the GIZ (MOA, 2014).

2.2.2 Pljevlja cheese

The Pljevlja cheese is a cheese from Montenegro, traditionally made out of ewe, cow or mixed milk. Produced in the Northern mountainous areas, it is now mostly made out of cow milk (Mirecki & Konatar, 2012). Mirecki & Konatar (*Ibid*.) characterised the traditional Pljevlja cheese. They classify Pljevlja cheese as a white brined cheese, which means that it is a semi-hard or soft cheese, with aromatic, slightly bitter and salty taste. The conservation of the cheese is done in salty water (brine): it does not have crust. Just like for Sharri cheese, the fabrication process is quite homogenous in the region, but the exact composition of the cheese is quite different from a producer to another.

Montenegrin dairy sector is mainly alimented by small producers, and a big part of the production is informal (ETF, 2013). Some authors insist on the need to improve the farms productivity in order to stay competitive on the market (Fabris & Pejović, 2012; Markovic, 2011). At the same time, the strategy of the ministry is to help this small agriculture, and to valorise traditional products in the tourism market (MARD 2015). GI is tool for that is consistent with this strategy.

FAO and Donja Gorica University launched an inventory of the products that could benefit of Geographical indications (Bernardoni & Martinovic, 2015) and Pljevlja cheese is one of the main advanced products in the designation process. Indeed, some farmers are already organised into a Producer Association and have started to work, along with the municipality of Pljevlja, on the definition of the product as GI. A vulgarization booklet of Mirecki's work on the characterization of the cheese has been produced in Montenegrin.

3 Construction of our research questions: an iterative process

Taking into account these elements, our research question was the following:

"In what way the European GI tool could be implemented in rural areas of Kosovo and Montenegro, and under which conditions can it contribute to an environmental management of these territories?"

It can be further break down into more specific questions.

The first one is: *What key elements should be taken into account when considering the GI building process in those two territories?*

Are the studied products, their territory and their production processes stabilized?

In order to create a GI there must have unique ties between the product and the territory, both in a physical way (i.e., a particular climate, soil, local variety or breed) and in an anthropic way (i.e., local know-how, specific skills, landscape, historical traces, and narratives). Thus these territories and practices must be mapped prior to crafting a useful GI. The name of the product must also be stabilised and define a product sufficiently specific to be described in a book of requirement.

At what stage is the collective action or, when initiated, the GI construction for these products?

A GI must necessarily be the result of some producers' proposal. Our goal was to identify the social and collective dynamics at stake regarding the two cheeses. The objective was to understand who was potentially carrying a political will to protect the product (Association? Leaders?...). It was also important to try and analyse the power dynamics among the players of the value chain to understand who could be more interested by the development of a GI, and if the players had the same ideas concerning what a GI should protect.

How the comparison of these two products can provides insights for GI creation or further development in Kosovo and Montenegro's rural regions?

Comparing the two products can give precious insights on what key parameters must be studied and prioritized when launching a GI. With different levels of advancement on the two products, it gives a good picture of what could and/or should be reproduced if other GIs studies are lead in the region.

The second sub-question is: *What can be the GI's leverage capacity for biodiversity conservation?*

The first version of the question was: "Under which conditions can GI tools contribute to biodiversity preservation?" We reoriented the question in order to emphasize the role of the book of requirements, while broadening the impacts (environmental and not only biodiversity).

What are the characteristics of local natural ecosystems and which ones are worth to protect?

In order to assess the environmental impact of a GI tool, we need to have some precise information about the ecosystems and biodiversity of the region. As we would not have sufficient time o produce ecological data, it implies to collect as much as possible the existing data on biodiversity and agrobiodiversity and to rely on experts to understand what are the dynamics and ecosystems that need to be maintained.

Does the production of the cheeses studied involve practices having positive impacts on these characteristics?

First we tried to understand what was the actual link between pastoral practices need and agrobiodiversity (and more generally biodiversity) conservation. Then we also asked ourselves if the cheese production potentially concerned by the GI implementation was important enough to have a visible impact on the territory.

Could the GI tool foster those pastoral practices and thus have a positive environmental impact? At what conditions?

The key question remains: can a GI protect and foster those practices? First, are those practices impacting the organoleptic qualities of the product, thus enabling integration to the book of requirements? In more details, how the redaction of the book of requirements impact the type of cheese, producers and pastoral practices put forward?

CHAPTER 2: METHODS

1 Which analytical framework to describe and assess a GI building process?

1.1 Informing the GI building process: a framework analysis

Recent literature on Geographical Indications highlights the difficulty of ex-ante assessment, as the GI building process stems from a tension between sectorial and territorial governance, which can lead to a wide array of different situations and *scenarii*. It invites us to take into account the complex challenges of a collective action confronting established conventional supply chains, and pursuing different goals (Fournier, 2015).

To that end, we used a GI framework analysis issued from similar researches led under the BiodivBalkans project (Garnier *& al.*, 2016, Medolli *& al.*, 2015, Bernard *& al.*, 2014). The objective is to inform the main dimension of a Geographical Indication implementation, crossing the institutional and legislative framework with the local collective action dynamics, through a territorialized analysis.

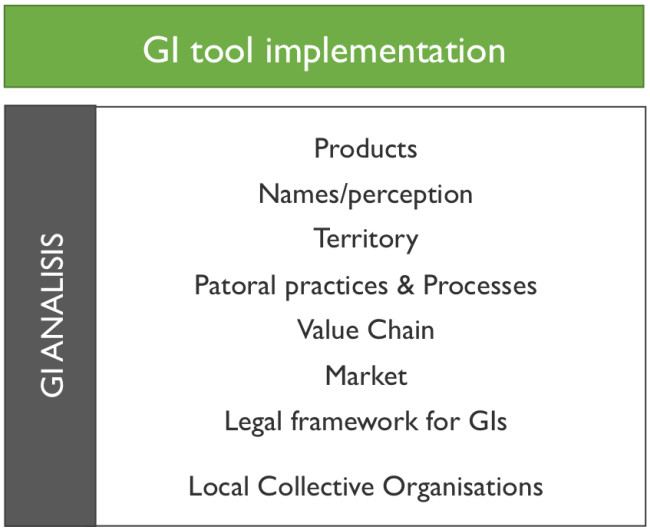


Figure 4: Dimensions of a PGI analysis

- **A product and a name:** creating a GI implies to name a product and define its specificities (thought a Code of Practices). In our case, the two cheeses are seen as traditional milk product, they can be characterized by the **cheese production process and/or the pastoral practices?**
- **A territory:** a GI is directly refers to a territory, which has to be clearly defined: is it already the case or not? How this territory has been built over the time? How could it be from and environmental and socio-economic perspective?
- **A market:** based on a consumer preference and a higher willingness to pay a GI ensure a price premium. Therefore, mapping the **value chain and the distribution channels** allows to understand the current structure of the market and to analyse potential GI on different category of players.
- **A legal framework:** a GI is a state guaranteed label. National GI frameworks are created by national public institutions, in accordance with the European framework. It is important to evaluate to what extend they are supporting competing sectorial governances.
- **A local collective action:** a GI is defended and promoted by a coalition of local players, aiming to preserve converging interests. In that view, it is important to distinguish different degrees of adhesion and identify who is directly part of the collective action (shareholders) and who can have an indirect interest in supporting it (stakeholders).

On the basis of the analysis of these elements, we tried to identify what key strategic choices were to e made in the GI construction. We also connected these choices to the stakeholders that would be somehow advantaged or disadvantaged by them.

The objective is mainly to point out relevant questions and their potential consequences, to stimulate debates on these aspects.

As GI is presented as potential leverage for environmental management of ecosystems, we particularly emphasised this aspect of this analysis.

1.2 Discussing environmental aspect of GI implementation

To answer the second research question concerning the potential environmental impact of the GI, we took some concepts of the Strategic Analysis of Environmental Management Framework (Mermet, 2011). This framework puts the environmental issue at the very centre of the reflexion and it allows assessing the environmental efficiency of management tools and policies.

In this particular case, we tried and observe (i) the direct potential environmental of a GI implementation and (ii) its action capacity at the regional level.

The first step for that was to collect information on the main issues concerning biodiversity in the region, and to understand the interactions between biodiversity and pastoral practices at the origin of cheese production. For that, we mobilised grey literature and scientific literature available in the region. Then, we tried to meet specifically expert players that had a specific interest in biodiversity conservation (scientists, park administration, NGOs…).

The second step consisted in crossing these information with the strategic choices identified for the GI implementation. The construction of decision trees helped for that: we observed, for each key element, what option would have a better impact on biodiversity. These are only prospective aspects, but if the GI is to have a positive impact o biodiversity, it is necessary to think about it as soon as possible in the construction phase.

Finally, among important biodiversity issued, we tried to identify, what could be done through a GI, and what was to be done through other complementary tools and policies.

2 Research process and field work

Our research method was based on iterative interactions between data collection and fieldwork in order to generate valid and pertinent research questions. Prior to departure, we derived a rough understanding of studied products and areas on the basis of a bibliography study of grey literature, scientific literature and databases (Official reports from Ministries or the EU, University publications, NGO press release and International aid agencies). We then we drafted research questions that appeared pertinent. On the field we tried to answer these questions through interviews and observation, while regularly revising research questions.

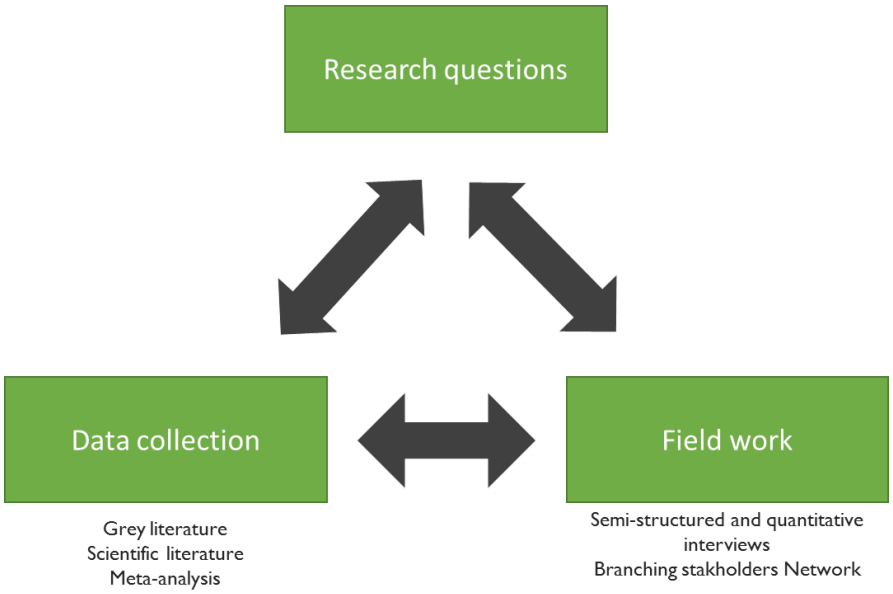


Figure 5. Representation of the iterative process according to our research logic

3 Data production

We collected data in two different ways: bibliographic study on one hand, semi-directive interviews, survey and direct field observation, on the other.

3.1 Bibliographic study

During the bibliographic research phase, we studied different types of literature provided by CIHEAM-IAMM researchers or gathered thanks to our own investigations. Our searches were focused on different thematic: the countries and the studies areas, the products, the Geographical Indication and other information relevant to our project. Three types of document were used: scientific publications, the grey literature which represents all the documentation except scientific one, and also secondary data like database or video, provides by our partners, by the authorities or found on the Internet. In terms of access, we had no difficulties to obtain scientific publications with our different networks (online scientific library)..

3.2 Collective field work and interviews

Our collective fieldwork was organized based on the ECRIS method, a socio-anthropological approach of the field (Sardan, 2003), consisting in comprehensive and semi directive interviews. We had question grids to guide us (**Annex 2**).

In Kosovo, we made interviews all around the Sharri region to have the largest panel of interviewees possible. We went also to the capital, Pristina, to meet institutions and researchers. In Montenegro, we visited different places in the region to collect data, mostly in Pljevlja city but also north and south of the municipality. We also made phone call interviews with people in Podgorica.

The first interviews were scheduled thanks to contacts that were given by our partners. Then we also went directly in different locations, without any contacts, to find producers and interview them. Each time we had an interview, we asked people for some new contacts and thus we created a branching network. We tried to distribute our fieldwork in all the study area so we prioritized contacts from areas where we didn't have any information.

The interviews were either taken by phone call, email, or directly with the interlocutor. When the interlocutor was not English-speaking or French-speaking, we worked with a translator.

In order to help us with the interviews, we made different types of question grid (**Annex 2**). We kept a thread in the interview to avoid off topic and to deal with all the topics of interest. There was a grid for each type of player. Question grids evolved during the study.

3.3 Survey

Surveys were made with the population of the most important city of the region, Prizren for Kosovo and Pljevlja for Montenegro. In Prizren we made 21 surveys, and in Pljevlja we made 20 surveys.

The objective was to get information about the consumers' perceptions of the products and to better characterize them. We made our surveys at random in the street regardless of age, gender, professional activity, but these information were collected during the survey and we tried to roughly have balanced demographics (as many women as men, young and older people...).

A survey grid was created in order to have the same questions for each people interviewed (Annex 2). Most questions were multiple answers with check boxes but a few questions were open ones. We kept more or less the same grid for the two studies.

Our translators gave the surveys. Each survey took around five minutes to be completed.

After each session of survey, all data were compiled into a database in order to analyse correctly the different information we obtained.

3.4 Overview of the collected data

All in all, we made 66 interviews (37 in Kosovo and 29 in Montenegro) and 41 surveys (21 in Prizren and 20 in Pljevlja). In both countries we saw people from public institution, producers (traditional and industrial), University researchers and sales channels organization. In Kosovo we had the opportunity to meet 4 environmental players while in Montenegro we could not see any. In Montenegro we encounter a middle man and a producer association.

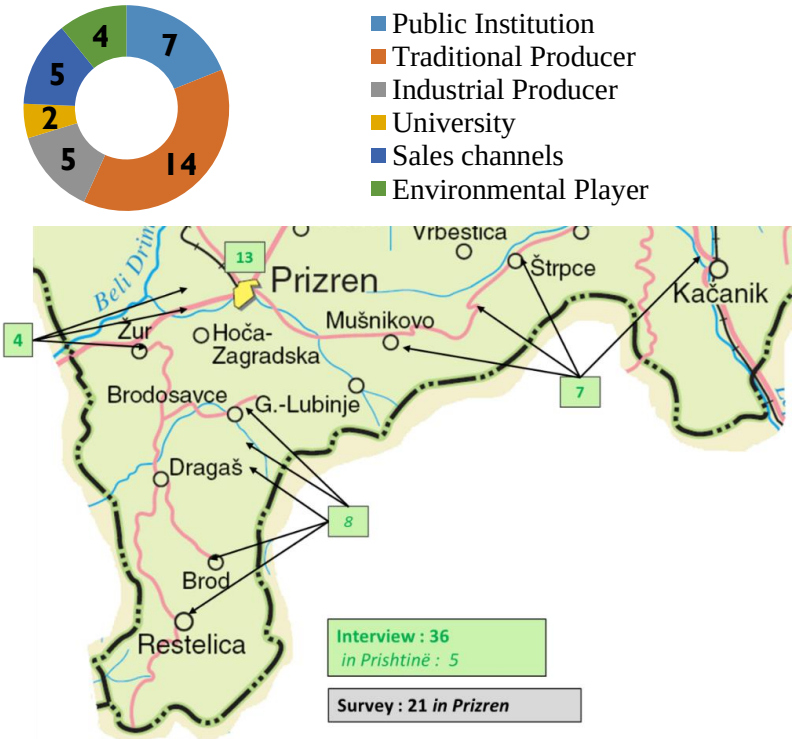


Figure 6 : Overview of the different type of players we interviewed in Kosovo and location of the interviews

Map base : Corine land cover

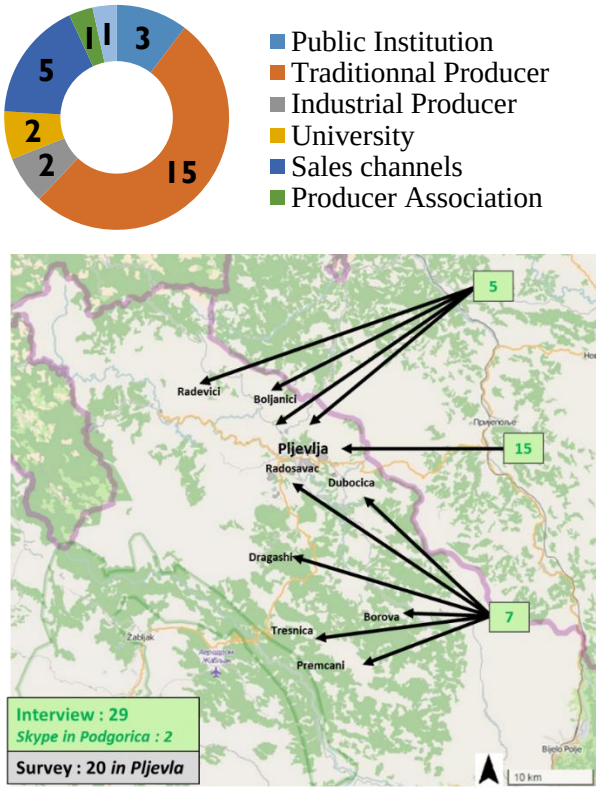


Figure 7 : Overview of the different interviews realised in Montenegro
Map base: Openstreetmap contributors

3.5 Results consolidation through work presentation

During the project, we made different presentations to the partners and players of the project in order to present our first conclusions and to get new information and opinions about our work. We made three presentations of our work:

- ***29/02/2016***: in Prizren, Kosovo, a presentation of our project before the fieldwork in order to obtain some first hindsight about our questions and first contacts. Different people were present: traditional producers, one industrial producer and institutional players.
- ***11/03/2016***: in Prizren, Kosovo, the presentation of our first conclusions after the first part of the fieldwork in order to obtain opinions and advice regarding them. Around thirty people were present: traditional producers, industrial producers, environmental players (NGO, National Park) and institutional players (French Embassy, Ministry of agriculture of Kosovo).
- ***18/03/2016***: in Podgorica, Montenegro, the presentation of our first conclusions after the end of the fieldwork in order to present and obtain new information about our project. Around 10 people were present: university students, researchers, and members of the ministry of agriculture of Montenegro.

4 Data analysis

4.1 Daily collective debriefing

At the end of each day, there was a collective debriefing where each group made a quick report of its interviews of the day. It allows to share rapidly big amount of information, and to capitalize on it for the next day.

4.2 Players typology

Based on our literature study we made a first typology of the different players of the values chain (traditional and industrial producers, distribution channels), institutional and environmental player. We started on the field with 6 types of players (National administration, Local State service, Local representatives, Civil Society, Products stakeholders, other organization). After our first interviews we refined this pre-typology to use more detailed categories (Table 1) that were used to categorize the players in the database (Annexe) and in the interview compilation. However, this typology was again refined during the analysis phase of the project and some categories like the traditional/industrial producer were be modified.

Table 1. Preliminary typology of the different players on our project and their description.

The country indicates where these types of player were encounter. Sometimes we only see a type of player in one country, because with the few times we have, we can't make any interviews. (K : Kosovo, M : Montenegro).

	Country	**Description**
Environmental Player	K	National Parks, Environmental NGO.
Industrial Producer	Both	Small industrial cheese producer met at their factories or at their milk gathering point
Middle Man	M	People who link traditional producer and sales channels
Producer Association	M	Association of traditional producer
Public Institution	Both	National administration, Local State service, Local representatives
Sales channels	Both	Supermarket, Greenmarket, Restaurant and Hotel
Traditional Producer	Both	Traditional cheese producer mainly met at their farms
University	Both	Researchers

We also tried to have interviews International Cooperation institution (Mostly GIZ, USAID and French cooperation) but due to the short time we had, we were not able to meet any of them.

4.3 Transcription and report of the interview

We made transcriptions and reports of our interviews in order to make the data the most understandable as possible and to extract the main issues and verbatim of the interviews.

We also created a codification for each interview in order to quote them anonymously in the report without indicating any information that could incriminate the people we met. This code consists of three parts: the initials of the country of the interview, the initials of the category of the interview, and the number, which represents the position of the interview of this type (Table 2). We made a compilation file with all the documents and the matching code.

Table 2. Codification of the compilation according to each type of player of the Interview database

Players	Kosovo	Montenegro
Public Institution	KPI	MPI
Traditional Producer	KTP	MTP
Industrial Producer	KIP	MIP
Environmental Player	KEP	MEP
University	KU	MU
Sales channels	KSC	MSC
Producer Association	KPA	MPA
Middle Man	KMM	MMM

4.4 Creation of databases

The databases were created with the software Access of Microsoft Office (Microsoft Corporation, 2010) in order to make easier the work of synthesis. Various databases were created:

- Contact databases: all the information on the potential contacts of people to meet (names, organization, player type, localization, phone & E-mail address, contacted or not, interviewed or not).
- Interview & Survey databases: all the interviews information (names, date & hour of the interview, localization of the interview, interview type, question grid or not, recording or not, transcription done or not, transcription file).
- Producer database: key data concerning the exploitation of each producer we met (flock description, productivity and price, pastoral practice, market, economic information).

4.5 Draft of a cartography

The cartography was made with ArcGis Software (ESRI, 2011) and with the shape file and raster maps of Corine land cover (Corine Land Cover, 2012).

4.6 Consolidation of research hypotheses and conclusions

The analysis of the set of data was made by triangulation (Olivier de Sardan, 2008), by cross-cutting the interview data with other information (databases, scientific publication or grey literature).

CHAPTER 3: GI BUILDING PROCESS ON SHARRI CHEESE (KOSOVO)

In order to study the implementation of a GI on Sharri cheese, we needed to make a very precise analysis of the following aspects, which will be detailed in the chapter:

- **The perception of the product by people in the street**: What do people mean when they use the name Sharri cheese? What is this product for them? It allows us to know if "Sharri cheese" is stabilised as a product or covers a variety of products and presentations.
- **The territory of production.** What are the specificities of the Sharr territory? what are the main stakes for a GI in this context?
- **The pastoral practices at the origin of the cheese production**. Are the practices homogeneous for the production of the milk used to make Sharri cheese? What characteristics of the pastoral practices are of interest for the book of requirement?
- **The value chain and the distribution channels**. Who is actually selling sharri cheese, where do they sell if and to whom?
- **The production processes.** Is there a stabilised process for Sharri cheese production? What is important for the book of requirement?
- **The legal framework.** How advances is the GI framework today? What constraints are associated to it?
- **A discussion on GI implementation and on its environmental aspects**.

1 What is Sharri cheese? Definition through consumer preferences

Adopting a consumer perspective on traditional food products can be way to define the specificities of a product, which can be associated with a certain local area, region or country and/or specific qualities (Giraud&al, 2013). It is the reason why we decided to test consumer preferences toward traditional hard cheese in the area of Prizren. The objective was to determine if "Sharri cheese" was a stabilised name or was rather covering a variety of products and representations.

To this end, we conducted a street survey in Prizren where Sharri cheese is particularly renowned. We wanted to know i) how the cheese is perceived and consumed, ii) what kind of product do consumers put behind this name and iii) what are the main patterns of consumption we could identify. Twenty-one street interviews were realised.

1.1 Clear perception of mountainous origin

Most people interviewed know where the cheese is produced (17/21) while less than half know how it is produced (9/21). Some people even know the exact village where it is produced.

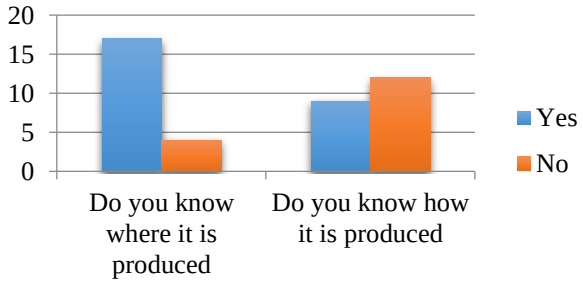


Figure 8: Answers to the questions "Do you know and how is produced Sharri Cheese?"

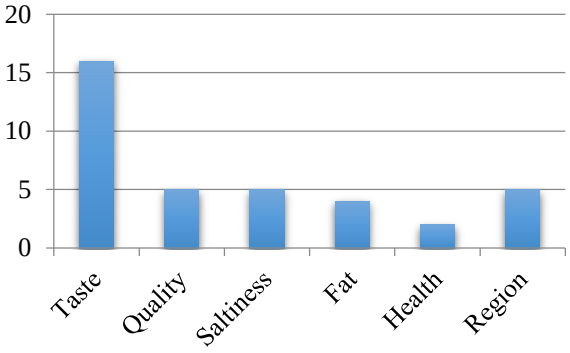


Figure 9 : Main characteristics of Sharri cheese

To the question "what are the main characteristics of Sharri cheese?" the most frequent characteristics associated were "taste" (16), "quality", "region" and "saltiness" (5) (Figure 9). We collected a total of 6 characteristics, though it was an open question. The distinction between sheep and cow cheese was not spontaneously cited.

1.2 Two different consumption patterns depending on the age group

Sharri cheese (SC) can be sold under different forms and in different places. In supermarkets, people find jars of SC, ready to eat, and mainly made out of cow milk. In greenmarkets or in the farms, the cheese is mainly sold in bread form (whole cheese) or in blocks (pieces of cheese) but it is not yet ready to eat.

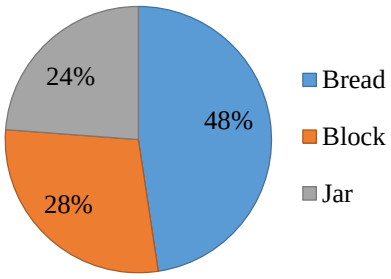


Figure 10: form of Sharri cheese purchased

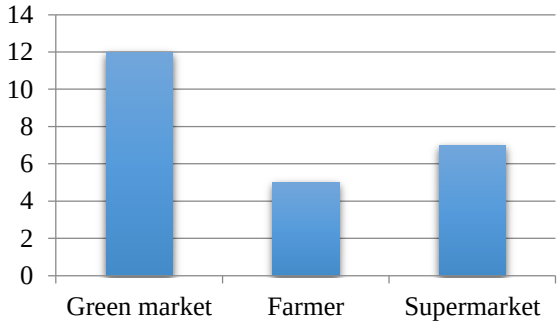


Figure 11: Place of purchase

Most people who eat SC in Prizren buy their cheese in bread form, in the green market (

Figure 10 & 11). However, globally, all forms of products and places of purchase are used by people.

Regarding these differences, our results show that the age of the consumers has an influence on their consumptions preferences (Figure 12). Elder people prefer Sharri cheese made out of sheep milk. Sharri cheese made from sheep milk is almost entirely done by traditional producers. Thus this same demographic group tends to buy its cheese in bread form (20-30 kg) that they find in the green market or directly at the producer's place. In the green market, smaller blocks of cheese can also be found. These products are not available in supermarkets.

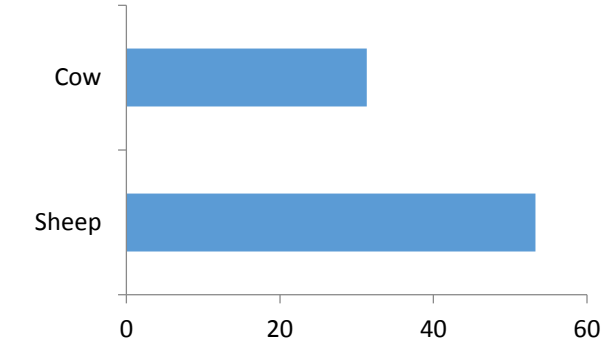


Figure 12: Medium age of people preferring cow or sheep SC.

This consumption pattern forces the consumer to be part of the production process for the last step, this can lead to amusing scenes: some young people return the product, or cut too big pieces, or say it is bad quality but actually it's just that they don't know how to prepare it (KPT4 – Traditional producer). Younger people often buy their Sharri cheese in supermarkets where they can only find industrially made cheese. They prefer Sharri cheese made out of cow milk and buy it in smaller containers (blocks or jars), usually of 2 kg or lower.

The frequency of purchase is thus very different (Figure 13, left). When the cheese is bought in bread form, it is usually bought "twice a year", making it possible to have Sharri cheese all year long while buying only the best cheese made between April and September. On the contrary, the consumption in blocks or jars needs a more frequent purchase. A vast majority of the respondent consume Sharri cheese at least every week (Figure 13, right). The fact that we conducted the surveys in Prizren is a bias regarding this figure.

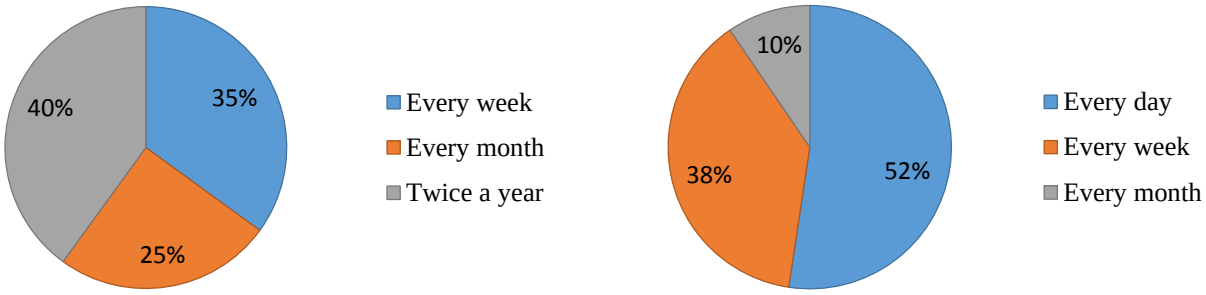


Figure 13 : Prushasing frequency (left) and consumption frequency (right)

Consumer surveys in Prizren show that most people know Sharri cheese and consume it.

However, depending on the generation, people don't consume the same "Sharri cheese".

In average, older respondents prefer the Sharri cheese made out of sheep milk, that they buy at the green market and prepare themselves.

Younger consumers prefer the Sharri cheese made out of cow milk, which they buy in a ready-to-eat form in supermarkets.

2 Defining the territory: Sharri Mountains

After a presentation of some general characteristics of the Sharr region, we will present more in detail the biodiversity aspects of the region, and then the importance of the pastoral activity and its evolutions.

2.1 General characteristics of the Sharr region

Kosovo is a small country of 10 908 km². The majority of the country is mountainous. The Sharri cheese originates from the south of the country, in the Sharri region. The Sharri Mountains (redbox) cover about 1600 km^2, split into Kosovo (43% of total mountain areas) and Macedonia (57%). This massif is one of the highest in the Balkans, counting 15 peaks above 2500 m. The area is influenced by the Mediterranean climate in the South and the Continental climate in the North. Temperatures can reach up to 40 ° C in summer in the valley and drop to -30 ° C in the mountains for extended periods (Mehmeti et al, 2009). Rain is higher in winter than in other seasons, with significant snowfall.

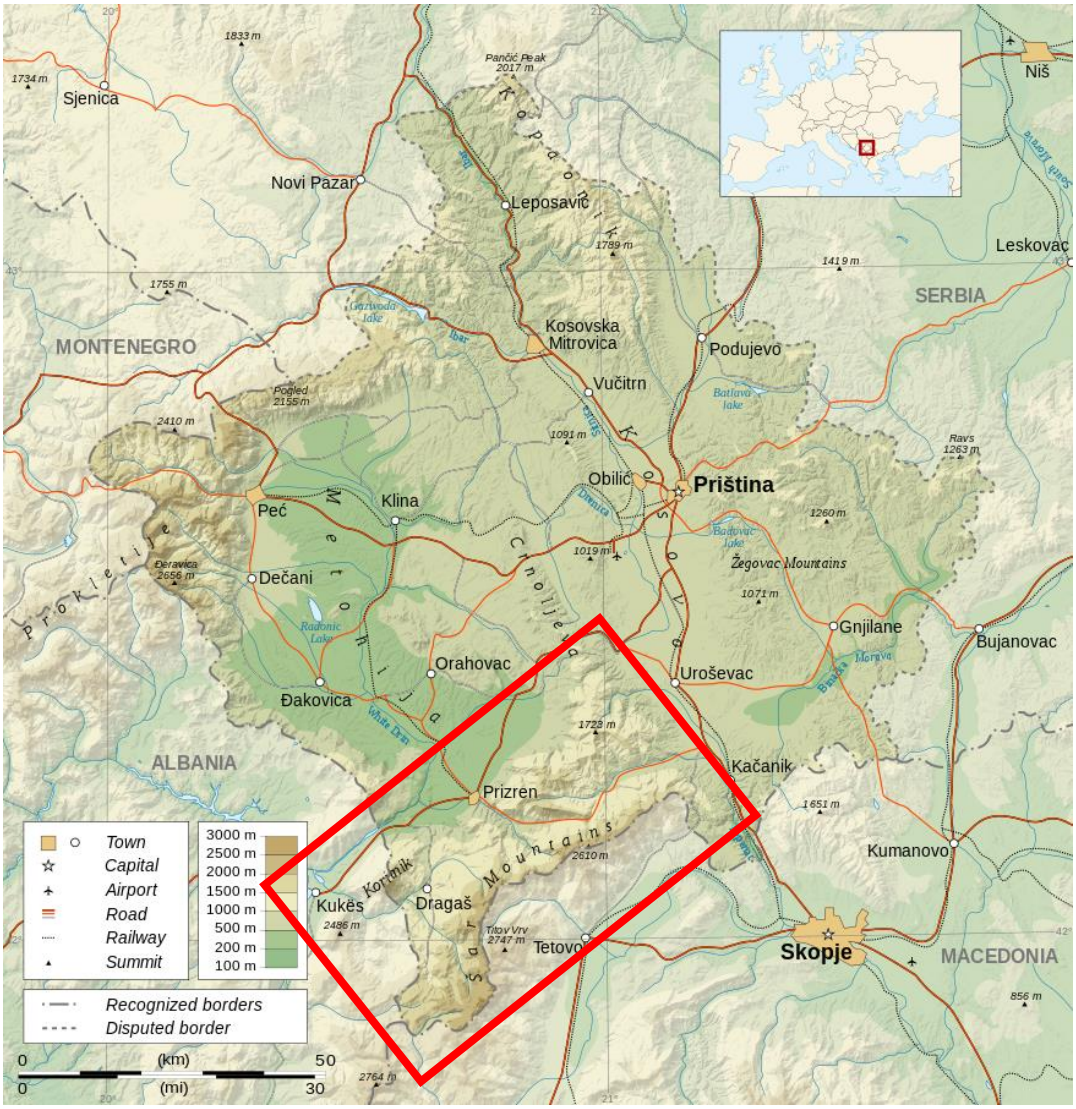


Figure 14 : Presentation of the study area in Kosovo (red box)
Source: © Sémhur / Wikimedia Commons, FAL,
https://commons.wikimedia.org/w/index.php?curid=3617853

The Kosovar part of Sharri Mountains includes 4 municipalities: Dragash, Prizren, Strpce et Kaçanik.

In these municipalities, there are four main ethnic groups surrounding the mountain area, namely the Albanians, Serbs, Bosnians and the Gorani (Figure 15). In Strpce Municipality, the majority of residents are ethnic Serbs (around 66.9%). In Prizren Municipality, there is a diversity of three ethnic groups: Albanians, Bosnians, and Serbs. Gorani constitute the absolute major ethnic group on the Dragash municipality (Brunborg, 2002). The whole territory was observed, with some emphasis in Dargash and Prizren regions. The ethnic diversity complicated the fieldwork because of the languages. Anyway, it was interesting to see that the process of cheese production didn't depend on the ethnic belonging of the people interviewed.

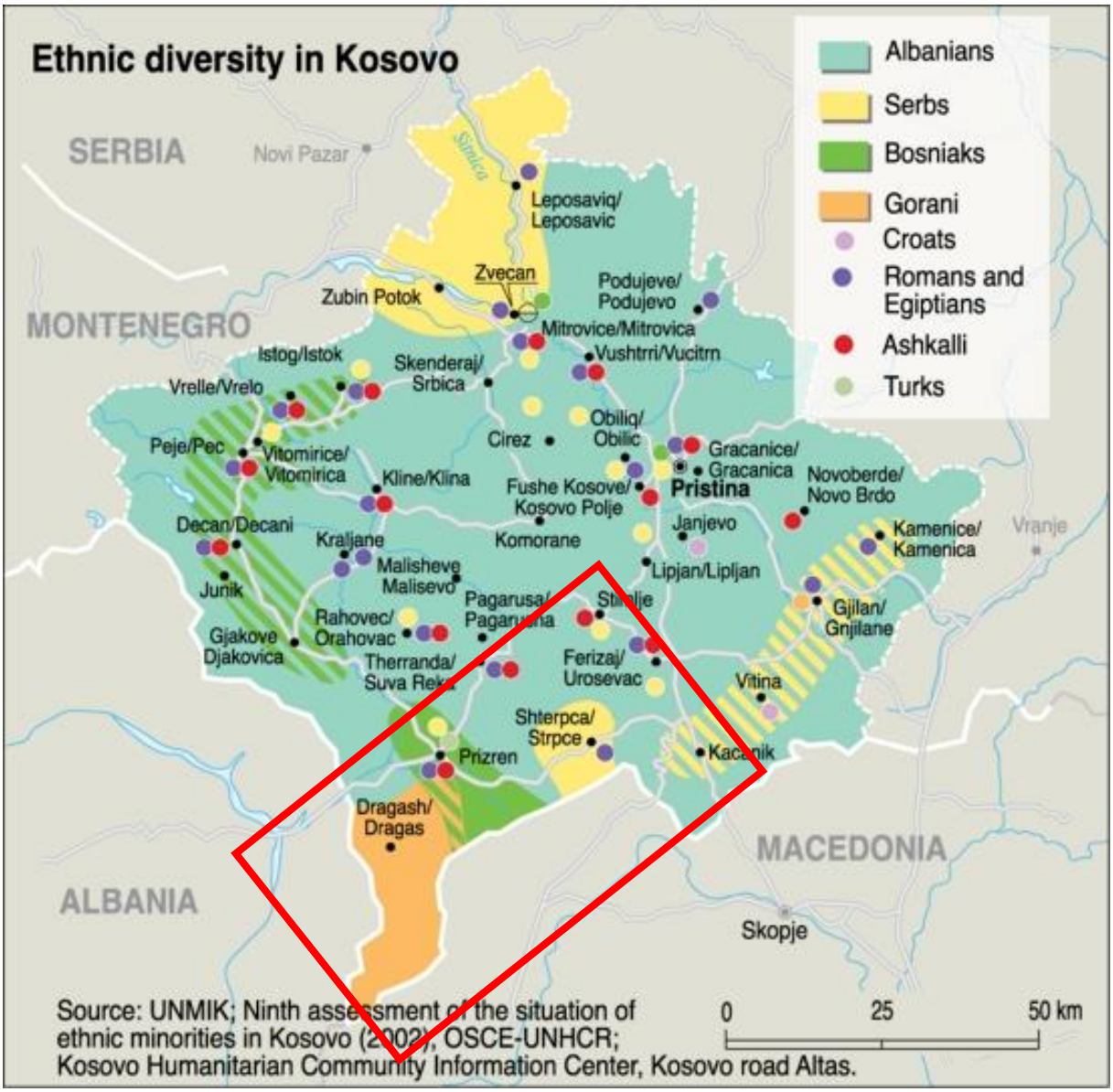


Figure 15 : Ethnic majority in the Sharr Mountains in Kosovo in 2002.
Blue: Albanians; **Orange**: Gorani; **Green**: Bosniak; **Yellow**: Serbs (Source : UNMIK, 2002).

People used to live in rural areas, but after the war a major rural exodus happened. Now, the majority of people live in cities. If the population in cities like Prizren is increasing, rural municipalities like Dragash and Strpce undergo a rural exodus, in particular in small villages.

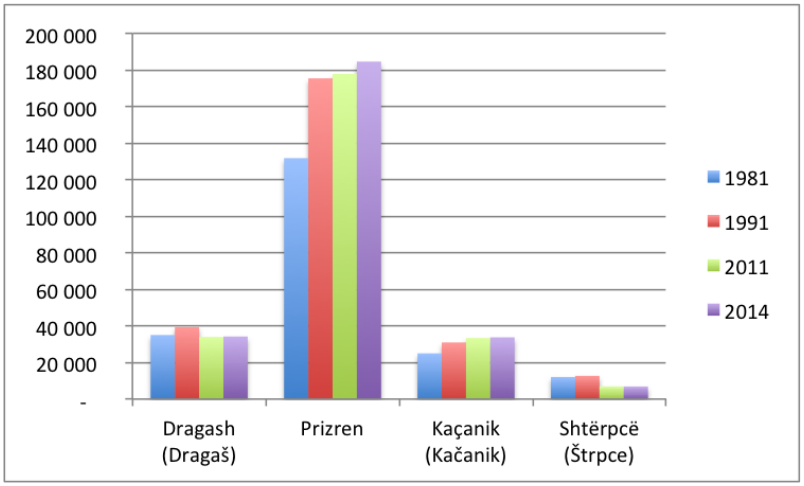


Figure 16 : Demographic evolution of the Sharr municipalities
Source: Kosovo agency of statistics

2.2 A pastoral landscape characterized by high levels of biodiversity

The Sharri Mountains are characterized by a diversity of ecosystems (Sharr National Park Management Plan, 2015). Figure 17 details the land use occupation of the region.

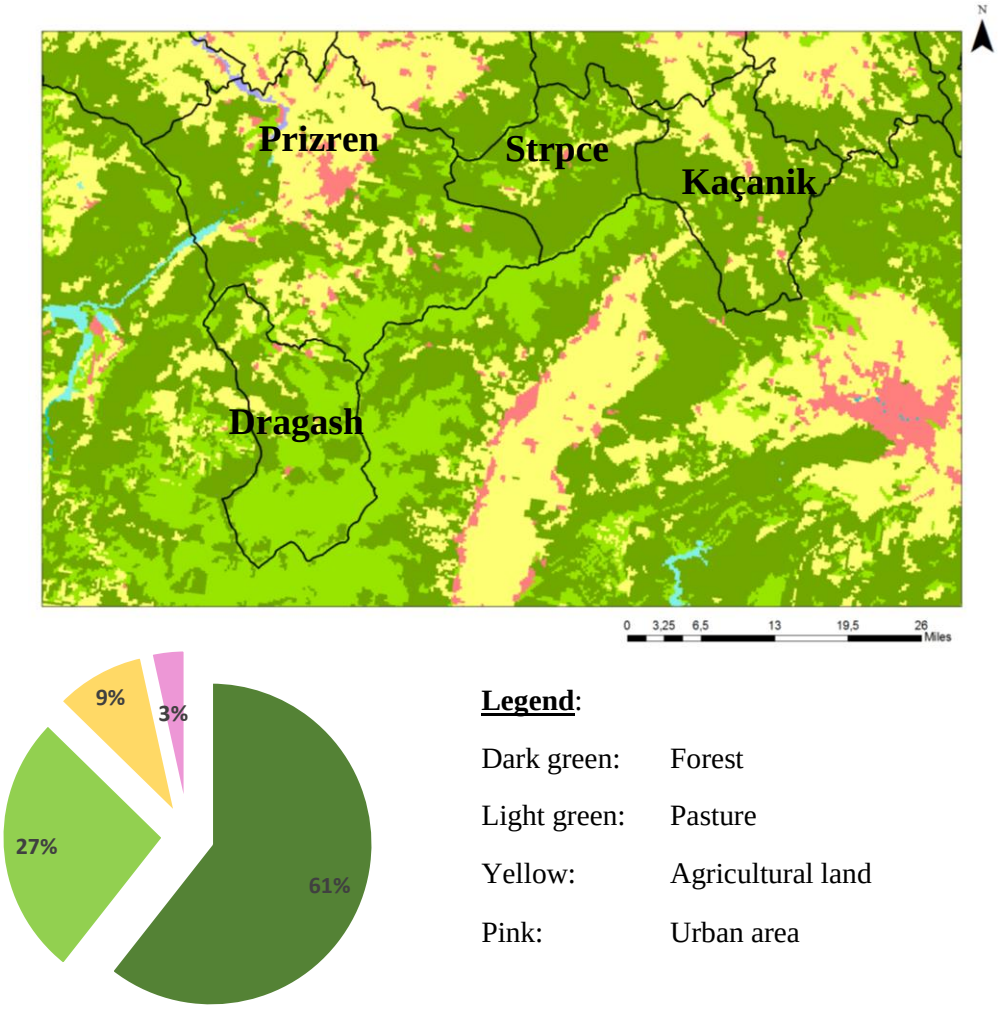


Figure 17 : Land use occupation map of the Sharr Mountains region in Kosovo.
(Source: Corine land cover, 2012)

The different urban areas are represented in pink. The yellow represents the agricultural lands, mostly present in the plain of Prizren municipality. Pastures and natural grassland (light green) cover an important area, in high altitudes. This ecosystem presents a high biodiversity and is in strong relation with pastoral activities. The forests (dark green) are present in all the Sharri Mountains, and mainly in Prizren, Shtërpce and Kaçanik Municipalities. Forests are mainly composed of beech and, to a lesser extent, pine and oak trees cover a large part of the mass between 600 and 1600 m (National Park Management Plan, 2015). Above this limit, the trees are scattered and gradually give way to pastures. In Dragash municipality, pastures and natural grasslands are dominant.

In a global way, the Sharri Mountains present high quality agro-sylvo-pastoral ecosystems (Sharri National Park Management Plan, 2015). This region is extremely rich on endemic, rare, and threatened flora and fauna, which ranks it among the richest regions of biodiversity in Balkans and Europe (IUCN, 2009).

2.2.1 Vegetation dynamics and forest encroachment

Forests cover about 61 % of the total area in the region. The value of forests in this region is demonstrated by the fact that 97 % of the forest area in Dragash Municipality has been identified as "High Conservation Value Forests" (Laze, 2014). The forest ecosystems that require special attention and protection are at higher altitude and include the last primeval forests of the endemic and relictual Macedonian and Bosnian pine. Around 62% of forests are publicly owned; the remaining part is in private hands (KFA, 2009).

In Kosovo, forest has progressed of 2,6 % in 10 years, from 460 800 ha to 481 000 ha (Kosovo National Forest Inventory, 2012). The annual forests incremental growth in the National Park is around 5 m^3 per hectare, providing a total annual figure of 8080 m^3 for the whole forested area of the Park. The phenomenon is clearly visible on the field, with land encroachment visible on abandoned pasturelands. It can be considered as a threat for biodiversity linked to open landscapes (mainly pastureland) that is maintained through traditional grazing

2.2.2 Rare flora linked to alpine or sub-alpine pasture

The higher areas of the region are dominated by alpine or sub-alpine pastures and by a range of cliffs, rocky areas and screes, on either limestone or silicate substrates. These diverse areas support some of the most species-rich habitats in Europe, including a high proportion of endemic species (Veselaj et al, 2006 ; Veselaj et al, 2012). State of rare herbaceous plants, which provide unique value to the mountains' flora, is good and stable. These plants are found mainly in higher areas (over 1800m), and belong to the high mountain pastures.

Some rare species of medicinal plants are subject to illegal use. Most endangered plant is *Gentiana lutea*, which is collected by local people and people who trade it, since it has special curative value (Amidzic & Ostojic, 2006).

Many of the subalpine grasslands have been maintained over centuries through extensive grazing of livestock, managed by shepherds with a traditional understanding of their maintenance. These practices and the maintenance of a mosaic of ecosystems is also a good thing for wild fauna habitats.

2.2.3 Increasing population of wild fauna

Several protected species that are rare in other mountain ranges in Europe still live in the Sharri Mountains (Veselaj et al, 2006). The overall state of fauna can be considered as relatively good. Some of the most important species are presented in the Table 3.

Table 3 : Name of the different emblematic species in Sharr Mountains and the estimate number in 2011

Name	**Estimated population in 2011**
Brown bear (*Ursus arctos*)	45-50
Lynx (*Lynx lynx*)	6-8
Wolf (*Canis lupus*)	10-15
Gray eagle (*Aquila chrysaetos*)	30-40

This species are under permanent protection and classified as "species in danger" by UICN (UICN, 2009). These species need to have both open and close landscape to survive (European Commission, 2012), which makes Sharri Mountains a good location for them.

Main threats are illegal hunting and trading. The following protected species are hunted: chamois (10-5 per year), bears (1-2 per year), lynx (every few years), deer and wild boar. The hunt is mainly conducted through shooting, with some trapping (Report on the State of Environment, 2013). The "sport hunters" usually come from the region, as well as from Italy (KU1).

The population of most species is increasing but the number of some species such as the lynx and grey eagle is quite small and difficult to estimate.

2.3 Potential pressures on biodiversity at landscape level

During our field work, we didn't notice many highly impacting activities in the area apart from rock extraction around Suharekë (KU1) (Veselaj & Mustafa, 2009) and the very poor waste management, as can be seen on Figure 18.

Figure 18: Wastes in pasturelands

Another important threat is an intensive touristic development, with the rehabilitation and extension of the Bresovica ski resort in the Strpce municipality, which is already in project that should be undertaken by a French company "*La Compagnie des Alpes*" (Skiing Kosovo, Abandoned Lifts and All, New York Times, 2016)[1]. The site has been downgraded from a park heart zone to a zone allowing economic development. The scale of the project is still unknown, which makes it potential impact unclear as well. In case the project would become a success, it extension or replication in the area could be a big threat to the biodiversity of the mountains.

[1] Article from The New Yory Times –travel, on line:16/02/28/travel/kosovo-ski-holidays.html?_r=0

"In Brezovicë, this was a national park and they had a rule for protecting biodiversity like in other parks but 2 years ago, the prime minister signed the decision to make an economic potential area out of a big part near to Brezovicë so that they can build some ski lifts and some other things in that region". (KU1)

Also, one limestone is present in Rusenica, which is strict protection zone (lynx reserve), where it has caused considerable damage and disturbance. Global increases of prices may lead to pressure to develop these quarries in the future (Sharri National Park Plan Management, 2015).

Other potential threats could be the development of mining and of intensive forestry activity. For the moment, forestry is not a big activity in Kosovo as a representative of the Strpce municipality explained us (KPI5). Logging occurs mostly at small scale for the needs of the inhabitants and under the control of the forest municipal administration. Yet big companies exploiting wood in the Northern part of the country, in another National Park, are threatening biodiversity in this area (KU1).

2.4 The Sharri National Park: a tool to protect this emblematic biodiversity

The Sharri National Park (SNP) is gazetted in 1986. Located in southern Kosovo, it has been extended in December 2012 and covers today an area of 53 469 ha of land area. It contains a great diversity of habitats and is the Kosovo's most important conservation area (Figure 19).

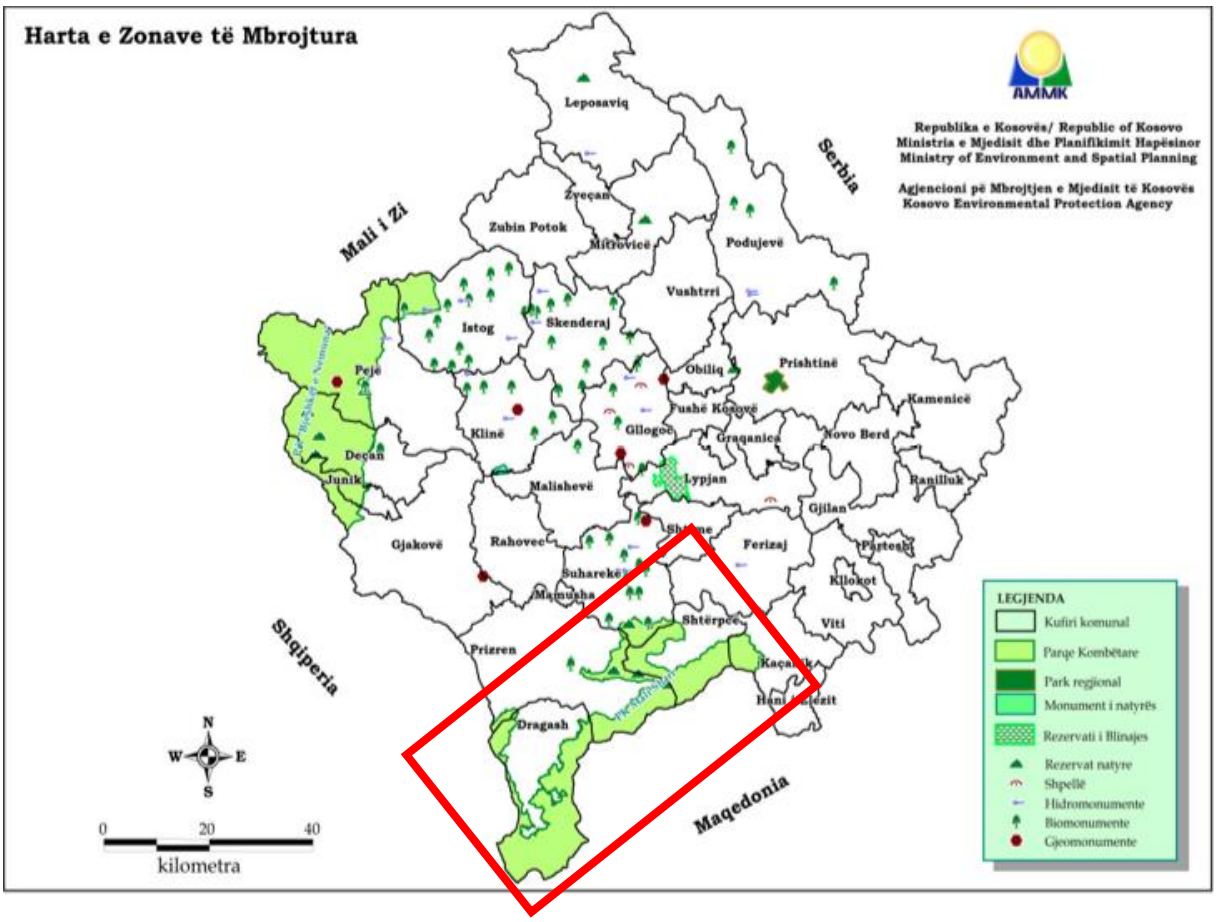


Figure 19: Sharri Mountain National Park
(Source: Ministry of environment).

Traditional uses such as summer grazing and collection of wild plants, mushrooms, and berries are permitted in the park. Numerous families used to graze livestock in mountain meadows of the park. There are still officially 30 villages within the park's boundaries but most have been partially or totally abandoned at the present time. For the managers of the SNP, grazing in the park is a good thing because it allows maintaining pastures opened, and therefore keeping their biodiversity. However they would like to create some rules to be sure that the pasture is done in a sustainable way. Up to now, the management of most pastures in the Park is unregulated and organised by local people according to tradition and local agreements and arrangements.

Some conflicts could emerge because of this will to establish some new management rules.

> *"The people from the national park came here and put some placards here and said that here, all is national park. It means that we have to stay in our homes and not do anything. Become isolated in some words […] I have seen in television how it works in national park. They construct to protect but here what are they going to protect. The ones that protect this place, it is us" (KPT8 – Traditional producer)*

But up to now, these conflicts are much more limited than in other parts of Kosovo and the worries are mainly due to a land rental fee of 1 or 2 € per year and per sheep. The fee is not generalized yet and only a few people pay it.

At the moment, the objectives of the management team are more oriented toward supporting pastoral activities and ecotourism sector against massive and anarchic development of the mountains.

2.5 Pastoral activities are still very important but evolve rapidly

Pastoral livestock breeding is still the main economic activity in the region. The abundance of pastures in the region is reflected by the higher amount of livestock in the region compared to other municipalities in Kosovo. The estimated total number of livestock in these 5 municipalities is approximately 92 869 heads, 21 % of the estimated total livestock in Kosovo (MAFRD, 2010). Most grazing takes place in the Dragash and Prizren municipalities, mainly with sheep. Table 4 show the distribution and quantity of livestock in Kosovo.

Table 4 : Pasture area and number of sheep in Kosovo
(Source: Sharri National Park Management, 2015).

Year	**1955**	**1980**	**1988**	**2004**
Pasture area (ha)	193 000	189 000	175 500	153 000
Nb of sheep	617 600	321 300	420 000	91 800

Human outmigration from the area has led to a decline in livestock numbers in recent decades and could reduce the ecological value of the alpine grasslands. With this human outmigration and diminution of herds, there is less pressure on the vegetation, which causes a closing landscape dynamic.

Several interviewed people (KEP2; KU1) agreed that the carrying capacity for the whole area of Sharri National Park was about 100,000 sheep.

2.5.1 A decreasing sheep population

In the whole region, all interviewed people relate a drastic fall in sheep population in the past decades, and especially since the war. Official figures as well as interviews match on the fact that there has been a strong fall of sheep flocks. Thus, a farmer from Brod told during his interview, showing a mountain covered by forests, that "*before, the mountains were all white from the sheep. Only Dragash had 13000 to 14000 sheep. Prizren had 50 000 sheep… it was a big number.*" (KPT10).

A farmer from Pllanjik relates that "*it changed, in the early 1950s the village owned 4 000 sheep, now there are only 250, which I own.*" (KPT6). This decreasing trend in sheep population seems to be a national trend. Figure 20 illustrates the phenomenon at the country scale. The total fall in the years 2000 is in direct relation with the war.

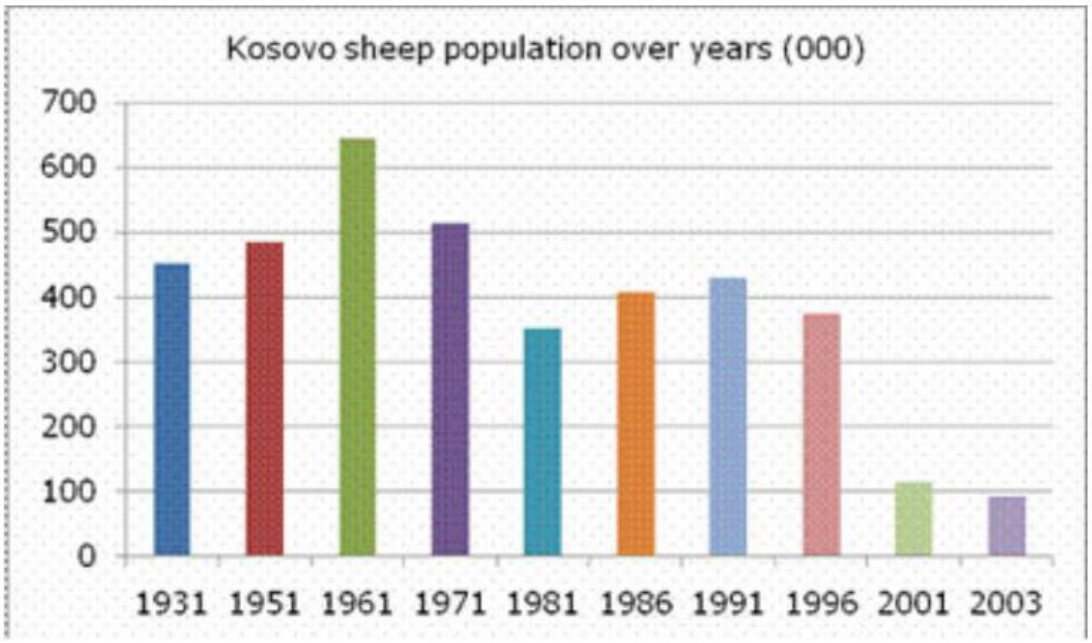


Figure 20: Changes in sheep numbers in Kosovo
(Source: Country Pasture/Forage Resource Profiles, Muhamet A. Kamberi, FAO)

2.5.2 Form Sharri sheep breed to crossbreeds

Despite of the identification of the Sharri breed as one of the Kosovar sheep breed (Bytyqi&al., 2014) most of the farmers told us that their sheep were crossbreeds, but that the cows were still from the local race (KPT1). It seems that this choice dates back to the post-war livestock reconstitution (2000's). Development assistance and foreign aid in the agricultural and livestock sectors, proposed crossbreeding as a solution to increase local breeds productivity.

> *"(We) changed the race of our sheep because they brought us 12 male sheep, so now 50% of our sheep are of that French race. The French race is better. As for the original, traditional race, the sheep were small ones and not that productive. That's why we prefer the French race." (KPT3)*

However, a farmer, who owns 1000 sheep, regrets the vulnerability of the crossbreeds.

> *"Before we had just Sharri Race. Now it's mixed. The majority are Sharri though. When the race was just from Sharri they didn't had any disease [itch] but when the Wurtemberg came it started." (KPT10)*

2.5.3 Livestock evolution from sheep to cows: differentiated trends by municipalities

Post-war livestock evolution seems to favour cattle population as compared with sheep population.
In the whole region, interviewed people relate a change, if not a shift, in pastoral practices: from sheep towards cows. Today, livestock distribution varies among the 4 municipalities covering the Sharri Mountains (Figure 21). While Strpce has an almost equal number of cows and sheep, the municipalities of Dragash and Prizren still keep up with a more important number of sheep (Figure 21).

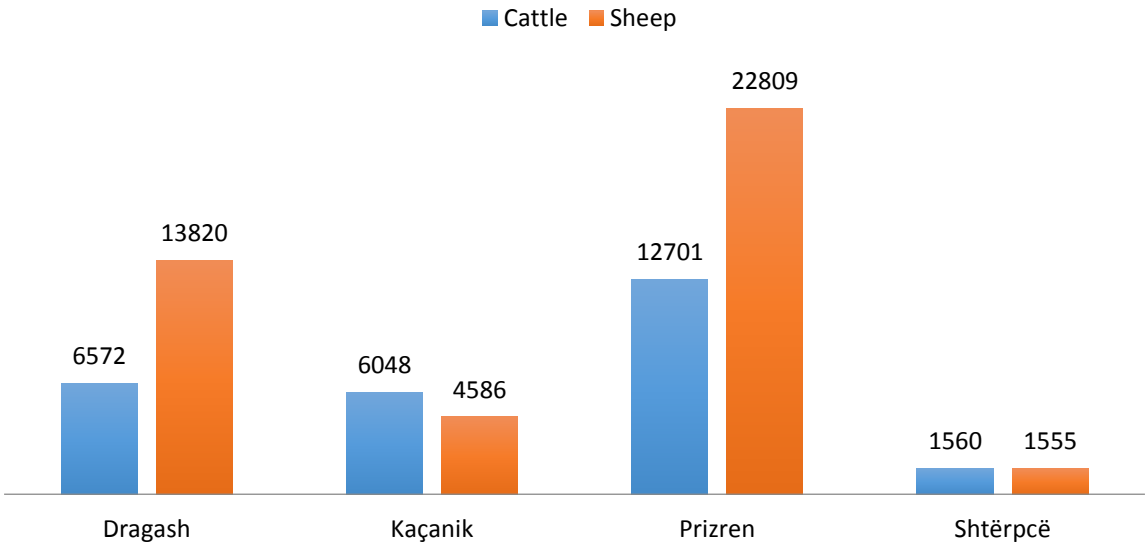


Figure 21: Livestock population per municipality (number of heads)
(Source: Agriculture census 2014, National Statistics of Kosovo)

2.5.4 Restructuration of livestock composition a farm level

These figures hide diverse situations in terms of livestock composition: sheep, cows, or mixed livestock systems. Looking at the recent numbers (Figure 22), we can see that cattle breeding are outnumbering sheep production (there are 16,4 times more farms dedicated to cattle breeding than sheep rearing). During our field work we did not found statistic data allowing us to draw a chronology of this evolution; however our interviews tend to relate a significant change of practices related to the post-war reconstruction context.

"*After the war, the younger generations abandoned their sheep*" (KPT1).

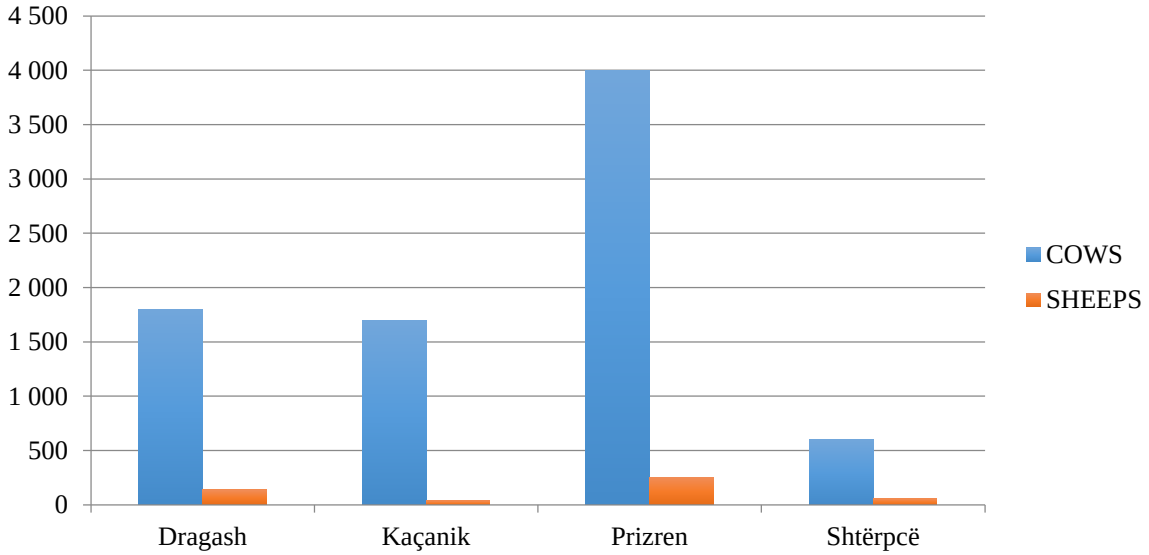


Figure 22: number of agricultural holdings, per livestock production and municipality
(Source of original numbers: Agriculture census 2014, National Statistics of Kosovo)

However, data of the recent agricultural census show a clear difference in livestock composition at farm level, in favour of cattle breeding.

Looking further at the size of herds (Figure 23), we can see that this increase in cattle population is stirred up by auto-consumption production. Small agricultural holdings counting 1 or 2 cow represent from 58% to 75% of the total cattle population! On the other hand, development of small scale cattle breeding (fewer than 10 heads) seems to be an increasing trend, allowing both auto-consumption at farm level and market production of meat and dairy products, and counting for 22 to 37% of the total cattle population of the Sharri territory. Finally, medium to large cattle farms represent only 3 to 5% of the total cattle population.

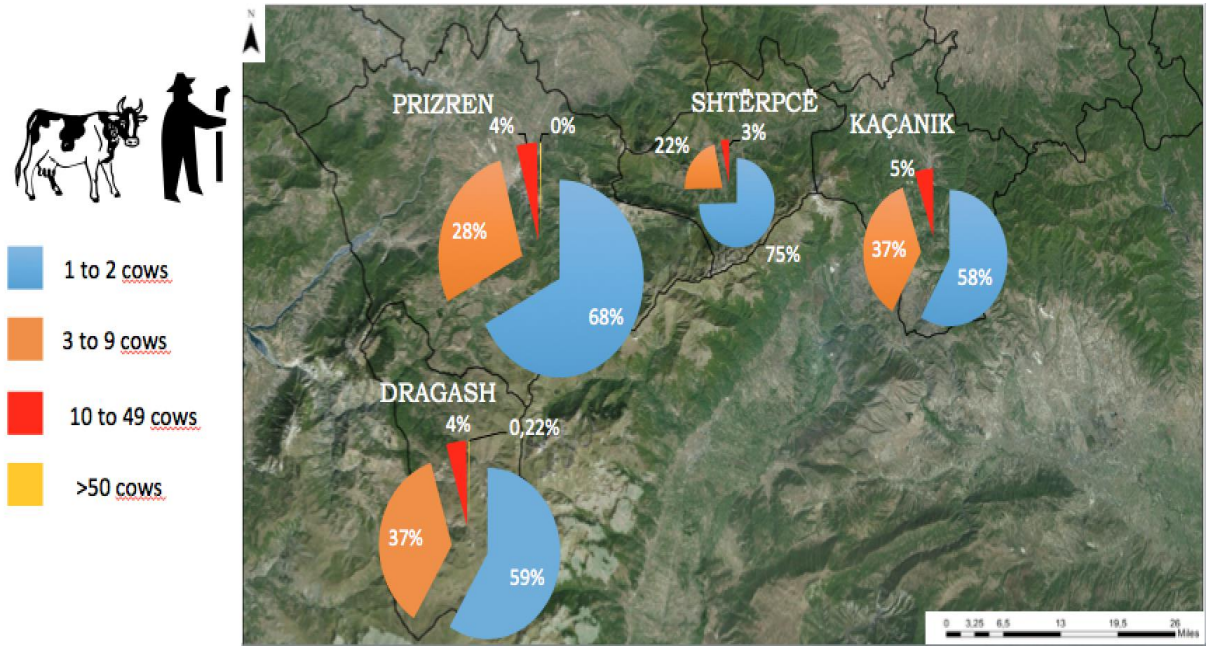


Figure 23: Class distribution of cow herd size per farm
(Source of original numbers: Agriculture census 2014, National Statistics of Kosovo)

Additionally, when considering the ratio of head of livestock related to the number of holders (Figure 24), it appears that there is an important concentration of sheep livestock

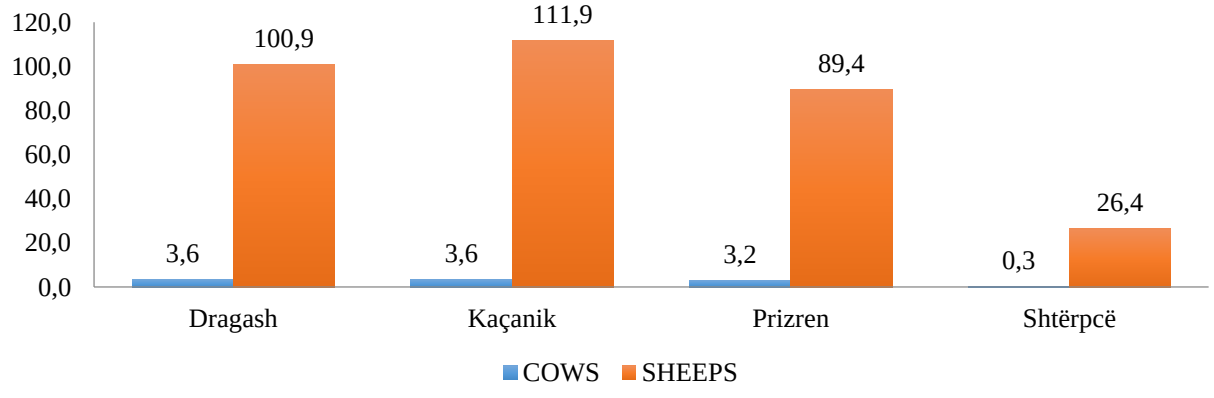


Figure 24: Head of livestock / holder, average per municipality
(Source of original numbers: Agriculture census 2014, National Statistics of Kosovo)

While decreasing sheep livestock is getting concentrated into specialized sheep breeding farms, development of cattle livestock is stirred up by auto-consumption and small scale cattle breeding.

Sharri region presents a very high biodiversity - inherited from agro-sylvo-pastoral practices allowing the presence of both a rich flora and fauna. This richness is recognised by the presence of the Sharri Mountain National Park with the aim of supporting the development of low impact economic activities, like pastoralism and ecotourism.

However post-war dynamics are affecting land use in the Sharri Mountains: transformation of demographic structure and markets trends are affecting the traditional livestock farming systems. Rural exodus induces farmland abandonment, reforestation, and diminution of the livestock pressure though transhumant grazing leads to landscape closure and biodiversity loss.

On the other hand, there are few alternatives for a sustainable territorial development. At landscape level, unregulated urbanism and extraction activities, absence of systematic waste management and potential project of mass winter tourism may have a negative impact on natural and cultural heritage of Sharri territory.

In that context, what could be the role of a Geographical Indication on an emblematic pastoral product of the region? What could be the leverage effect of a collective action, fostering both rural development and environmental conservation?

3 Transhumant livestock grazing systems in the Sharri region

We did not proceed to a systematic livestock system analysis. However, we made a series of interviews with livestock breeders that help us to get a global understanding of the pastoral production practices linked to traditional Sharri cheese production, and get some insights on the livestock's systems constraints and opportunities.

The figure below details our sample of interviewees, which is over representing transhumant livestock breeders, specialized in sheep production. Small and medium scale livestock farming systems (under 100 heads of sheep) have not been taken into consideration. Most of them can be considered as pastoral systems, but they are non-transhumant during summer period, unless some collective organisation at village level (in Strepce Valley, for instance). Further characterization of the diversity of existing livestock systems would be needed.

Table 5 : Caracterization of traditional cheese producers interviewed

Producer	Approximate altitude of the farm	Flock composition	Nb of sheep	Nb of cows
KPT1	1000 m	Cow	-	50
KPT2	1500 m	Sheep	140	-
KPT3	500 m	Sheep	1000	-
KPT4	500 m	Sheep	450	-
KPT5	500 m	Sheep	120	-
KPT6	1500 m	Sheep	250	-
KPT7	500 m	Sheep & cows	300	10
KPT8	1000 m	Sheep & cows	250	23
KPT9	1500 m	Cow	-	30
KPT10	1000 m	Sheep & cows	1000	43

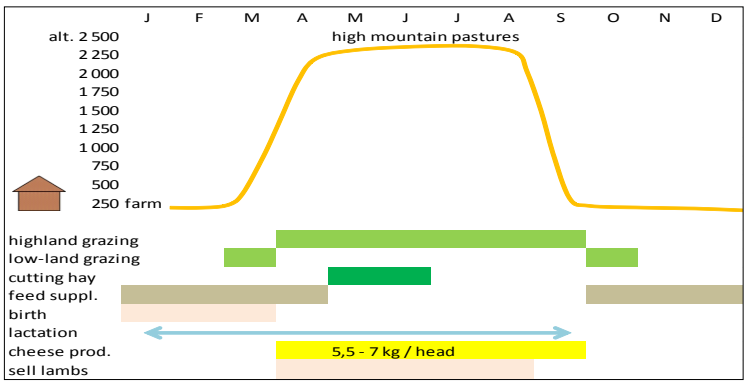
Based on this sample, we focused on the common features of those transhumant grazing systems, in order to describe their common characteristics as well as the key elements of variability or differentiation.

3.1 Common features of transhumant livestock grazing systems

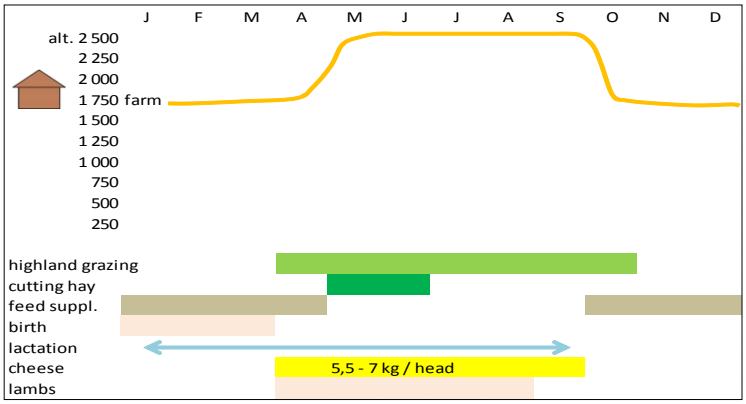
All the farmers interviewed are maintaining a seasonal transhumance to the Sharri Mountains which is a seasonal droving of grazing livestock, from the farm land in winter time, to the high mountain pastures in summertime, between 2 000 to 2 500 meter.

Departure on transhumance varies among farmers and villages, from April to June. It mainly depends on the weather and the altitude of pastureland (KP2). Most of the interviewed farmers come back to villages on September and some of them on August (KPT3).

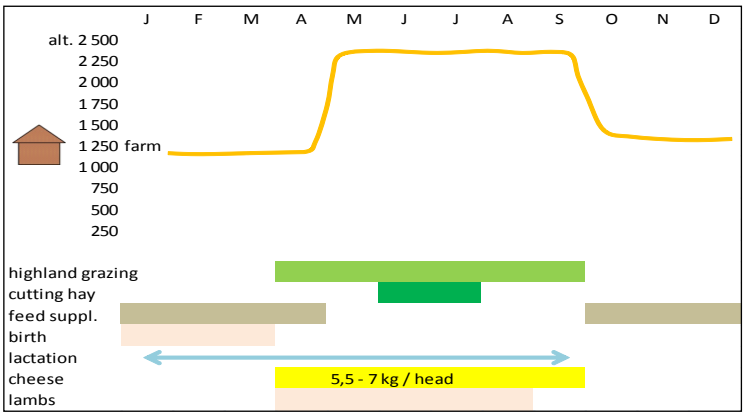
Production calendars for three types of farms in the Sharri region (low land, medium and high land farms) are illustrating a common organization of the production that heavily relies on summer transhumance for livestock breeding.
These livestock production systems are not clearly specialized toward sheep meat on milk production.
Most of the new born are sold before summer transhumance, but marketing strategies highly varies, and represent an important annual income, weighting the in overall profitability of the exploitation.
Most of the lactation period is valorised thought to cheese production, with an average yield of 5 to 7kg/head.



The first case represents a farmer located in low-land area in Poslishtë (250m a.s.l.) (Prizren Municipality), who goes to high mountain pastures in summertime at 2250m a.s.l (KPT7 - Traditional producer). The holding produces his own corn and is self-sufficient for feeding his livestock, which comprises 300 sheep and 10 cows.



The second case (KPT10 - Traditional producer) represents a producer of Kosavë (Draggash Municipality), whose farm is located at 1250m a.s.l, and who goes to pasturelands located at 2250m a.s.l. The holding buys its corn to feed its livestock, which comprises 144 sheep and 10 cows, from October to April. That corn usually comes from Serbia.



The third case (KPT6 - Traditional producer) represents a farmer located at 1750 a.s.l. in Pllanjik, (Draggash Municipality and who goes to pastureland at 2500m a.s.l. The holding produces its own cereals, and feeds its livestock with barley, whey, oat, fodder plant.

Figure 25: Production calendars of transhumant grazing systems in Sharri region and their geographical localization

3.2 Access to high mountain pastures

Most high mountain pasturelands are public land (State property). When the country was part of Yougoslavia, people used to pay a fee for pastures (KIP1) but since then, the access to pasture is unregulated. Most of the farmers bring their livestock grazing on these lands, considered as free-access land.

> *"The mountain of this place, everybody can use it. I have great relations with other producers" (KPT3 - Traditional producer).*

> *"It is the land of the village so we can use it." (KPT8 - Traditional producer).*

However, in the Sharri Mountains National Park territory, a grazing permit is required by the Park administration costing 1 or 2 € per sheep and per season.

> *"[I pay] 2€ per sheep to the National Park, and the payment is valid from 15th of May to 15th of September. […] Only the first year after the war was free and then everyone who goes there pays " (KPT4.2 - Traditional producer)."*

Some farmers, from the villages recently included in the Sharri Mountains National Park, are reluctant to pay.

> *"There have been people from the national park here. And they ask (us) for the money for the places we use for the sheep. We have to pay for it. For instance (we are) from Brod and the lands are ours. And we don't have to pay for it. They can't come here and say "we are going to take these ones". You'll have to force us to pay it. Because we have to pay too much for other stuffs so we can't afford to pay it." (KPT10 - Traditional producer).*

> *"Because of the national park, we have to pay something. But if we have to pay something to the national park, we can't afford it and we can't keep the sheep anymore so we have to sell all of them and give up the work. In a way, they are forcing us to give the money, but we don't have money to give them. And these are our mountains." (KPT8 - Traditional producer).*

On the other hand, it can be argued that this cost is non-significant compared with the national subsidies schemes supporting livestock breeding:

> *"The shepherds are just paying a few money: for 100 sheep it is about 150 €. And the ministry of Agriculture is giving them subsidies" (KU1).*

However, this issue seems to be a low intensity conflict. Up to now reluctant farmers have not been forced to pay as there is no enforcement mechanism.

But one can wonder if sheep grazing is considered as beneficial to the biodiversity of pasturelands, why do not they benefit from "environmental payments", as a way to maintain transhumant grazing systems in the area?

3.3 Flock herding and management during transhumance period & cheese production

3.3.1 Workforce as a central factor for transhumant grazing

The maintenance of transhumant grazing practices highly relies on sufficient available workforce to carry all the necessary activities of flock herding and management as well as cheese production. If cheese making is usually ensured by family members; flock herding can be assigned to seasonal shepherds.

> *"The production, I make everything by myself. I have people to help me, but just for looking after sheep, not to produce anything (…) During the season my workers have to take care for the sheep in mountains". (KPT4).*

"We go there (i.e. pasturelands) with all family. We are three brothers and we come with our wives and children." (KPT3)

Indeed, the first source of workforce is the farmer's family. However, changes in demographic structures as well as a social depreciation of shepherds' work make necessary to call on external employment crucial to manage medium to large herds.

"And the younger generations abandoned their sheep and I`d like to share my story about my son, he couldn't get married after the war because… who would marry a shepherd ? And that was the reason my own son abandoned the sheep [for the cows]" (KPT1)

Thus, half of the farmers call on seasonal work force during summertime. These semi or specialized farms show a good economic profile (eg. a 1000-sheep flock or a 300-sheep flock self-sufficient for feeding) and employ seasonal shepherds. However, Kosovan shepherds are getting difficult to find and most of them come from Albania. Average salary is about 300€ a month - food, beverages and accommodation not included (KPT10).

3.3.1 Shepherd dogs

Sufficient workforce to ensure a constant flock herding during summertime is therefore a central point for transhumant grazing continuation. Shepered guarantee a good flock protection against predators (wolves, bears, ect.), allowing cohabitation between pastoral practices and wild fauna. Additionally, Sharri dogs are trained as guard dogs for livestock, proved to be extremely well adapted and efficient (Figure 26).

Therefore, using a local dog race, coupled with an increased vigilance, conflicts with wild fauna are very limited.

Figure 26: Sharri dogs in a farm
(Source: Y Legraverant)

"The wolves, it has too much. But sometimes, also from the bear. But they are not as dangerous as the wolves. […] It happens that I lose 10 sheep per year. But if you are not aware to look at them and to protect them, I could lose 100 of sheep" (KPT10 - Traditional producer)

"There are problems with the wolves, but [we] have 15 dogs. Always 24 hours a day." (KPT3 – 1000 sheep - Traditional producer)

Wolves have attacked some sheep. But (we) have the dogs who are in charge, who protect the sheep. (...) It happens every year, 1 or 2. Because the dogs react and wolves don't have time to attack more sheep." (KPT5 - Traditional producer).

3.3.2 Summer cheese production

Summertime is the main period of cheese production (particularly for sheep) and workload is intense. Traditionally, during herd transhumance, cheese production occurs at the *bachilo,* a small summer house in mountain pasturelands. The distance from the *bachilo* to pasturelands varies among the farmers, but this is usually "*around 2 to 3 kilometers*" according to a farmer from Mushnikova (KPT5). All interviewed farmers milk their animals twice a day in the pastureland, and most of them (apart from one exception) prefer milking it by hand instead of using milking machines[2].

[2] We will see in section 8 that hand-milking is considered as a problem by the administration for sanitary reasons. If they make machine milking compulsory, it might be complicated for farmers to fulfil the requirements.

"We still prefer to milk the cows by hand. Two times a day. 6 am and 4-5pm. We have several milking machines, which we bought by ourselves without any outside help, but they are not used often." (KPT1- Traditional producer).

"We milk (the sheep) in the pasturelands, with the hand. When (we) milk the sheep, it is not longer than 1h. "(KPT 5- Traditional producer)

As the *bachilo* is located in a mountainous remote place, sometimes within a several hours of walking distance from the village, milk transportation is a challenge. Market remoteness and need of conservation over long period of time are traditionally the main factors explaining the production of an hard brined cheese (KIP1).

But, summer Sharri cheese production does not entirely occur at the *bachilo.* Some farmers are choosing alternative ways to send or transform their milk. Some bring it back to dairy collection point at the village or sell it at farm gate to the dairy collection truck. They transport the milk by hand, or with the help of horses or tractors, in metal bottles of 5 or 10 litres (sometimes a cistern – KPT10).

"[We] milk them in the pasturelands, with the hand. And [we] bring the milk here with the hands, in metal milk bottles of 5 to 10 litters. " (KPT 5 - Traditional producer).

"We bring it with the tractors, sometimes with horses" (KPT2 - Traditional producer).

"[We] manage to go there with horses and then bring [the milk] here [with] jars of aluminium" (KPT9 - Traditional producer).

Others choose to perform cheese transformation process in their farm. Usually the cheese process is performed by a family-member (KPT8 - Traditional producer) that stays in the farm during the summer season.

3.4 Flock management practices during winter time

Feed autonomy during winter time is one of the main factors of differentiation amongst the transhumant livestock systems we observed. Livestock feeding strategies are linked to farm geographical location, private land availability and production objective.

3.4.1 Forage resources

During wintertime, the farmers rely on hay to feed their livestock up to a proportion of 60 to 75%. Thus, cutting and stocking hay during summer is essential. Hay is mainly cut by hand. It often requires some help from family members.

(We cut hay) by hand. Yes (we do it) with my father […]. I have another sister who is married and her husband comes and helps (us) with the hay. (KPT5 - Traditional producer).

Other farmers use some harvesting machines to cut the hay. Thus, a farmer tells us that "*the only help (we) ever got was from FAO, and that was a harvesting machinery. Yes, it really came to hand. The pasture and hay then are carried by horse also to the farm*" (KPT1 - Traditional producer).

3.4.2 Complementary feeding

Hay is not sufficient and animals need complementary food. While some farmers rely on their own crop production, others need to buy it. That strategy determines partially the degree of resilience of farmers to external factors such as markets' volatility.

Table 6 gives an idea of the costs of animal's feeds for farmers who rely on external complements:

Table 6: Prices of main animals feeds in Kosovo
(Source: Country Pasture/Forage Resource profile, FAO, Dr. Muhamet A. Kamberi

Price, €/kg					
Type of feed	**2002**	**2003**	**2004**	**2005**	**2006**
Alfalfa hay	0.10	0.16	0.15	0.12	0.13
Grass hay	0.08	0.14	0.12	0.09	0.10
Cereal straw	0.02	0.055	0.043	0.05	0.05
Maize silage	0.04	0.04	0.04	0.03	0.03

Farmers situated in plain areas can cultivate their own crop, if they have the workforce for it. On the other hand people in small valleys are closer from high pastures but most often cannot produce crops around their farm.

For farmers who can't rely on their own cereal production, feeding costs are the most expensive costs, reaching up to 20% of total revenues. Thus, in our sample of interview, both of the farmers owning the biggest flocks (1000 sheep) of the survey spend up to 21,000 € a year for feeding their sheep. This leads to a higher dependency on foreign markets, as the corn they buy comes from Serbia. At the same time, relying on external feeding resource allows some scalability, diluting other structural costs on a higher number of livestock. Two of the farmers relying on external feeding are among the most profitable, in absolute figures, of the panel.

3.5 Economic constraints and production choices at farm level

Economic factors are important to take into account, especially when considering the sustainability of transhumant livestock grazing systems. In that view, we analysed some of the main factors influencing production choices (livestock composition, milk or meat specialization, valorisation strategies, etc.). Cost estimations presented below are extracted from our semi-directive interviews. We did not intend to build a systematic representation of holding profitability, and we did not collected data on additional sources of income to livestock breeding.

However, these rough economic estimates can help us to draw some general hypothesis.

One of the main hypothesis is that cattle breeding is becoming more revenue-generating that sheep rearing. If we apply a ration revenue generated / head of livestock, we can see that this ratio is on average of 98€ / sheep, while it reaches 1435€ / head of cattle.

Table 7 : Revenues generated from livestock breeding activities at farm level

Code number	KPT3	KPT7	KPT4	KPT5	KPT6	KPT2	KPT8	KPT10	KPT1	KPT9	KIP4
Number of sheep	1000	300	450	120	250	140	250	1000	0	0	600
Number of cows	0	10	0	0	0	0	23	43	50	30	150
Sheep cheese revenues	40 000 €	9 000 €	13 258 €	9 369 €	11 400 €	5 600 €	8 333 €	0 €	0 €	0 €	13 333 €
Sheep milk revenues								32 000 €			
Cow cheese revenues	0 €	0 €	0 €	0 €	0 €	0 €	39 205 €	0 €	85 227 €	40 909 €	204 545 €
Cow milk revenues		12 750 €						51 600 €			
Lambs revenues	51 000 €	24 000 €	48 000 €	1 650 €	15 000 €	6 720 €	12 000 €	54 000 €	0 €	0 €	38 400 €
Wool revenues					200 €			800 €			
Other revenues	690 €										
Subsidies (15€/sheep)	15 000 €	4 500 €	6 750 €	1 800 €	3 750 €	2 100 €	3 750 €	15 000 €	0 €	0 €	9 000 €
TOTAL estim. REVENUES	**106 690 €**	**50 250 €**	**68 008 €**	**12 819 €**	**30 350 €**	**14 420 €**	**63 288 €**	**153 400 €**	**85 227 €**	**40 909 €**	**265 279 €**

The second hypothesis is that market opportunities and appreciation of pastoral sheep products are decreasing. Wool used to be an important source of revenue for sheep owners but today it is not worth for a farmer wooling the sheep himself. Indeed, it costs more than the price of the wool.

> *"Before the war, we used to manage sheep, because we used to earn more by selling their meat, milk and wool. We sold the wool to Serbian factories at that time, to Turkish factories in Dragash too but after the war the Turkish factory closed and the boarders with Serbia and with the situation going on, it got impossible to sell like we used to so we switched to cows." (KPT1).*

Sheep milk price remains very low compared to cost production. There is at least one gathering point accepting sheep milk but the price is very low (0,34€/L). But sheep milk is less appreciated by the consumers, who prefer the soft taste of cow cheese.

> *"At that time, sheep milk was preferred by the consumers, but now they prefer cow milk because of the lower percentage of fat than in sheep milk".(KPT1)*

Currently, lamb production still remains a good source of income. Most of interviewed farmers were waiting for the Ramadan period to sell the lambs, are the prices are soaring up from 60€ to 150€/ per lamb during those times.

> *"In January, the lambs are born. It's about 800 to 900 lambs. And then in March or April [we] sell them. And then after we start making cheese. So there are revenues from the sales of lambs. Right now we have between 800 and 900 lambs in the stables. We have raised them in order to sell them in spring" (KPT3).*

Sheep cheese products are in an intermediate stage. Sharri cheese made out of sheep is recognized as a traditional/genuine product. Its good reputation helps to maintain a good price, equivalent or superior to Sharri cheese made out of cow milk.

Transhumant grazing systems used to be the main modality of livestock production in Sharri Mountains. Their constraints (seasonality, market remoteness, etc.) and characteristics (mountainous pastures) have shaped traditional Sharri Cheese production and specificities: hard brined cheese, made in summer pastures, suitable for long term conservation and consumption all over the year.

However, the post-war economic and social context seem to have a strong influence on the evolution of transhumant practices as well as on flock constitution and therefore on Sharri cheese production.

Two major changing trends are perceptible but they need to be further informed: (1) a shift from sheep to cow production, and the maintenance of fewer but large sheep rearing transhumant systems (2) a growing tendency to shift from transhumant to pastoral systems, organized around small or medium scale exploitations.

As a result, these changing trends have an important impact on the actual land use, as they tend to diminish the spatial extension of livestock grazing.

4 Sharri Cheese value chain and distribution channels

Value chains are a way of analysing a series of transformations that are necessary to bring a product to final consumers, representing all the intermediary phases of production. The value chain analysis put the emphasis on the valued added to the preliminary product, by combining it with other resources (knowledge, transformation skill, man power, etc.). As the products go through all transformation stage, its final value increases. Value chains are also a way of representing the relationships between a wide ranges of players directly involved in the production process (ie. stakeholders) or indirectly (ie. shareholders). The value chain governance is therefore an issue to be assessed by understanding market and power relations between the different parties to a transaction organized in a vertical coordination (FAO, 2014).

The value chain analysis is used here as a tool to address issue and main challenges of developing a Geographical Indication on a hard and brined cheese locally produced in the Sharri Region. We also chose to add a territorial dimension to the VCA taking into account the geographical location of all players and transformation steps along the chain.

We identified four main stages along the Sharri cheese value chain, adding value to the product: raw milk production, raw milk collection, milk transformation (cheese making process) and cheese distribution.

Rapidly, we were able to distinguish two main cheese production channels, involving different type of players, primary resources, and occurring at different places: ***on farm cheese production and dairy production channels***.

Out of these two different production channel, different products called "Sharri cheese" can be identified, ranging from '***traditional sheep sharri cheese***": a hard, aged, raw sheep cheese, made on farm and "***farm cow sharri cheese***": a hard, raw cow cheese, made on farm, until "***industrial sharri cheese***": a hard and brined cow/or mixt (cow and sheep) cheese, dairy made.

4.1 Raw milk production: making Sharri cheese out of cow or sheep milk?

In the Sharri region - that encompasses the four municipalities of Dragash, Prizren, Kaçanik and Strpce - around 43 000 sheep and more than 20 000 nursing cows respectively produce 1, 3 million litres of sheep milk versus 75 million litres of cow milk (Our own calculations based on the Census of Agriculture, National Statistics of Kosovo, 2014).

Table 8 shows the main elements of price, animal productivity, etc. that are informing the choice of making Sharri cheese out of cow or sheep mill. Both cow and sheep milk present pro and cons, in the current productive conditions in the Sharri region.

4.1.1 Cow milk production seems to become more attractive.

Cows are much more productive when it comes to milk production. First, they have a longer lactation period, allowing farmers to produce cow milk all year long. Second, the daily productivity of cows is 50 times higher than the one of sheep. Of course, a cow comes with higher costs than a ewe - mainly feeding costs - but even if these costs are taken into account, cows remain more interesting in terms of milk productivity. The prices at which milk is bought in collection points do not make a real price difference between cow and sheep milk: cow milk is bought at around 0,32 €/L while sheep milk is bought at 0,34 €/L, leading to a premium of only 0,2 €/L as sheep milk is concerned. As a consequence, it is understandable that most of the milk sold to collection points is cow milk because it is more profitable.

4.1.2 Sheep milk however comes with some advantages.

Sheep milk contains more fat and proteins than cow milk, so only 6 litres are required to produce 1 kg of Sharri cheese, whereas between 11 and 13 litres of cow milk are required to produce 1 kg of cheese. Given the low price at which sheep milk is bought in collection points and the improved milk/cheese ratio of sheep milk, it is logical that sheep farmers decide to value their milk by making cheese with it, let alone the fact that Sharri cheese made of sheep milk has been a tradition for centuries in the region.

		Sheep	**Nursing Cow**	
Milk production	Number in the Sharri region[1]	≈ 43 000	> 20 000	
	Lactation period	mid-April to mid-September	All year long	
	Estimated number of lactation days in a year	150 days	250-300 days	
	Estimated daily productivity during the lactation period	0,24 L/day	15 L/day	
Collection price	Average buying price at collection points[3]	0,34 €/L	0,32 €/L	
Milk/cheese ratios	Average number of litre needed for 1kg of cheese[2]	6 L/kg	11 L/kg	
	Estimated percentage of milk transformed into Sharri cheese[4]	90%	14% (at the farm)	7% (dairy sector)

Table 8 : Raw milk production in Sharri region and Sharri Cheese production

[1] Census of Agriculture, National Statistics of Kosovo, 2014
[2] Field data, Kosovo producers database
[3] Interview KIP2
[4] Broad estimation.

However, a new industrial player may change the current trade off. During our interviews we heard about a dairy industrial player that regularly collect sheep milk at farm gate at a price of varying between 0,80€/L and 1€/L.

> *"So if he gives us 1euro/litre, we are going to sell it all. Because it is not sure, selling [cheese] in the green market. Because sometimes it happens you can't sell everything a day. So we agreed because they give us the money for example for 30 to 40 litre/day they give us the money immediately that day."KPT10 –Traditional producer*

4.2 Two different production channels: farm versus dairy production channels

Thus the issue of sector player's mobility and their transportation capacities for milk and cheese is raised. It is especially true in a mountainous area like the Sharri, where roads can be narrow, difficult and don't cover all the mountains. This hurdle, combined with the need for dairies to analyse milk before buying it, leads to an extra stage for the dairy sector: this is the "Milk Collection" stage, taking place before transformation that will be further described.

The overall picture of the Sharri cheese value chain (Figure 27) shows the existence of two main production channels: ***on farm cheese production channel,*** for which milk is transformed into cheese, ***and a dairy production channel,*** in which milk is sold by farmers to the dairy sector and cheese is then produced by dairies.

Each of these production channel leads to different products called "Sharri cheese" by those who produce them.

- On one side, ***on farm cheese production channel*** may produce Sharri cheese out of sheep or milk, depending on the farm flock
- On the other side, the ***dairy production channel*** leads to the production of Sharri cheese made of pasteurized cow milk (or sometimes mixed cow + sheep milk).

This analysis leads us to different products competing for the name of "Sharri cheese":

  - "***traditional farm sheep sharri cheese***": a hard, aged, raw sheep cheese, made on farm
  - "***farm cow sharri cheese***": a hard, raw cow cheese, made on farm;
  - "***industrial sharri cheese***": a hard and brined cow/or mix (cow and sheep) cheese, dairy made

As we have seen it already, the "on farm" cheese production channel is inherited from traditional practices in the region. The dairy production channel is more recent. Indeed, after the fall of communism, dairies flourished. Some of them used to be State companies or cooperatives, which got privatized and modernized.

As markets and consumer preferences were evolving, the dairy industry has developed cow milk products since its emergence in the 1990s. Among those, Sharri cheese has been a flagship product. At first, dairies would also make Sharri cheese out of sheep milk, a Sharri cheese resulting of a mix of sheep and cow milk.

Consumption habits have yet evolved. Cow Sharri cheese has become increasingly appreciated by young people because of a lower fat content, a lighter taste and smell (see 0). Interviews suggest this societal evolution may be a consequence of public health campaigns, prescribing to consume less fat. Cow Sharri cheese is also slightly cheaper compared to sheep Sharri cheese that nowadays has become somewhat of a premium product. Supermarkets may also have played a significant role in this evolution (see 3.4.5). Out of all these reasons, dairies have progressively stopped making and selling Sharri cheese containing sheep milk.

> *"At first times, [we] started to produce Sharri cheese only with sheep milk. But the sheep milk has a big % of fat, so people started not using it and not buying it. Gradually, we started to produce Sharri cheese with sheep milk too and with cow milk. And we saw that people started to buy and to consume more cheese from the cow milk. And for the moment, we've eliminated the Sharri cheese that was made from sheep milk and we're just producing Sharri cheese from cow milk." (KIP 3 – Industrial producer).*

Please note that quantities presented in the figure below are only rough estimates. In depth studies and a more systematic review on data production statistics would be highly needed to get a better understanding of Sharri cheese production and market size, for both Sharri cheese production channels.

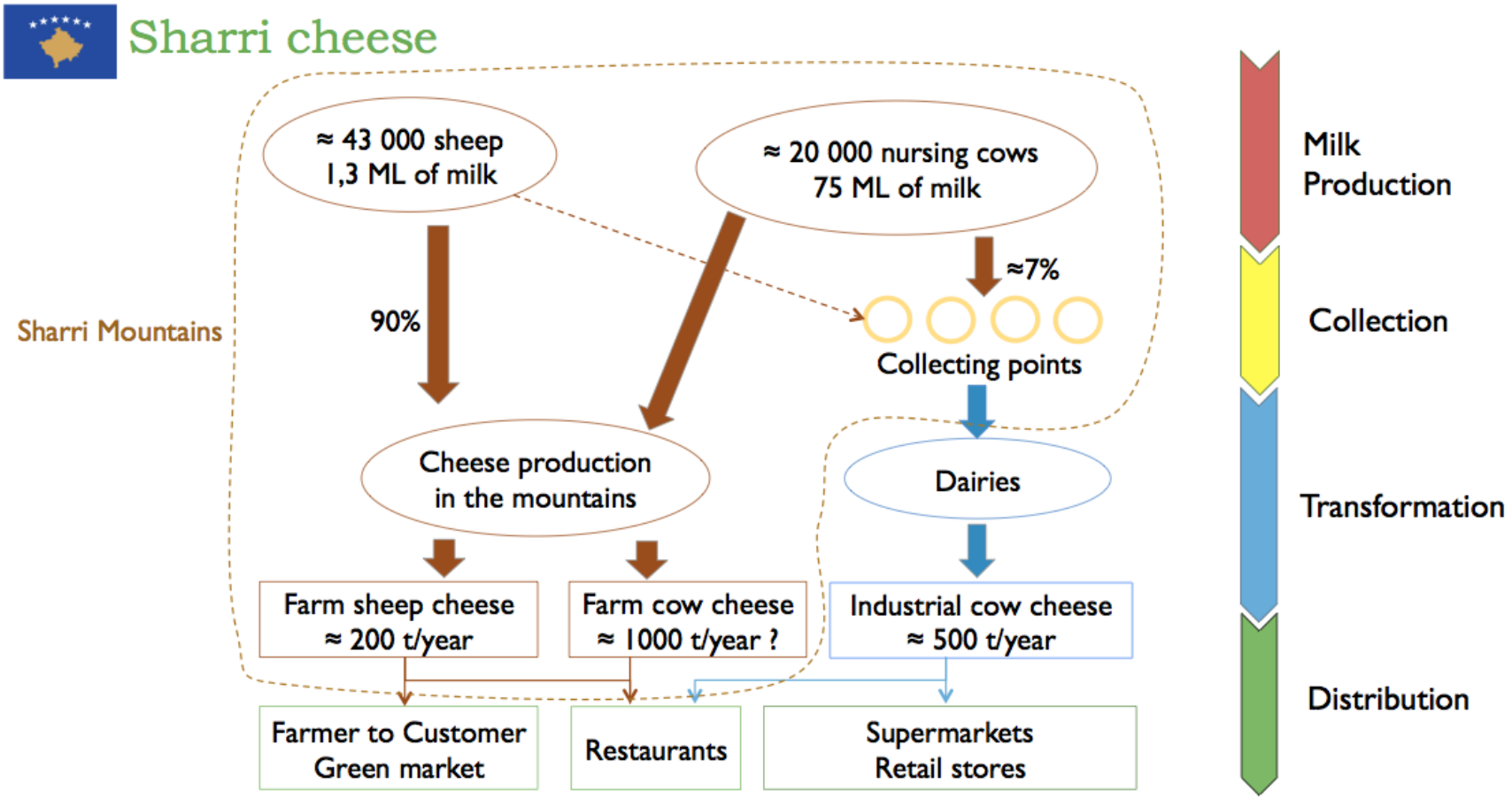


Figure 27 : The Sharri cheese production channels
(Farm track in Brown and Dairy track in blue)

4.3 Several distribution channels reflect different markets and different systems of constraints.

We have identified four main distribution channels for Sharri cheese: Standardized markets such as supermarkets and retail stores, restaurants, green market, and farmer to customer direct sales.

4.3.1 Different products, packaging and prices

Each distribution channel offers its own products, be it cow cheese or sheep cheese, industrial or farmer-made. Prices and packaging differ according to the distribution channel (Figure 28).

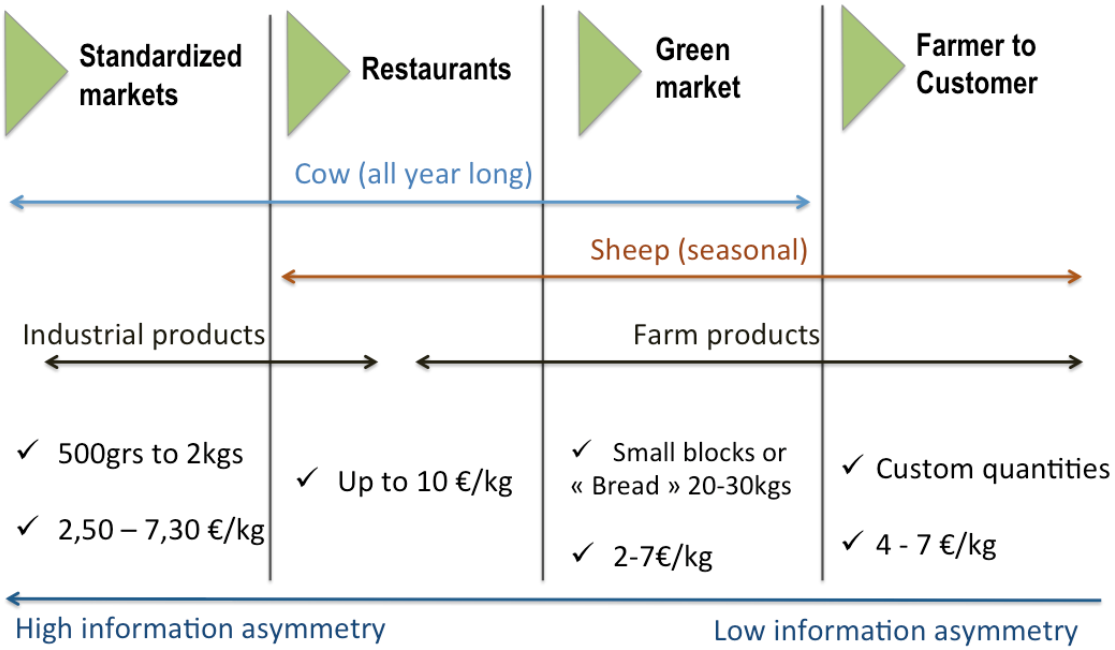


Figure 28 : Several distribution channels provide different products.

Standardized markets: In Prizren, supermarkets and retail stores offer cow Sharri cheese made by the six local dairies. They are sold in jars with a yellow cap that contains Sharri cheese in brine (

Figure 29). The weight ranges from 500 grams to 2 kgs. The price per kilogram can go from 2,50€ to 7,30 €. This ratio - price/kg - is higher when the purchased quantity is lower (500 grams), but it also depends on the perceived quality of the brand. Interviews show that ABI is the brand that sells the most products. No farmer-made sheep cheese is sold in such standardized markets.

Figure 29: Industrial Sharri cheese sold in a Prizren supermarket

Restaurants buy cheese at around the same price as it is sold in the Prizren green market. Afterwards they sell it at a much higher price to tourists and in particular members of the Albanian diaspora that come back in the Sharr region every summer. Some luxury restaurants also buy transformed Sharri cheese from dairies, associated with some herbs or aroma.

The "***Zhuppa Valley***" revealed to be by itself an important distribution channel for farm-made Sharri Cheese, with a supply area that stretches even on Dragash municipalitiy. The Valley is particularly renowned among Albanian visitors, coming especially to consume Sharri cheese, during summer time. In the first part of Zhupa Valley (from Reçan to Prevallë) at least 25 restaurants are selling from 10 to 60kg of Sharri cheese per week, depending on the season, which represent a total of 780 kg to 1000 kg per year per restaurant.

At the ***green market***, Sharri cheese is sold in the form of "bread", which means big pieces of 20 to 30 kilograms that need to be prepared at home before consumption, or in small blocks of 2 to 3 kg. For customers who buy directly from the farmer, cheese is sold in custom quantities. A common habit is to buy 10 to 20 kg at once for a few months.

4.3.2 Systems of constraints exerted on the upstream players

This led us to investigate further about the systems of constraints that each distribution channel may impose on players that are upstream in the value chain (Figure 30).

Farmers cannot sell their products in supermarkets because they don't own a registered company with a licensed trademark, so they don't pay taxes to the state on the cheese they sell. What is more, supermarkets focus on high volumes and buy at a lower price, which is not suitable for sheep cheese given the higher costs of production. Farmers would also need to be able to sell packaged cheese all year long to be in a good position to negotiate with supermarkets. All in all, a lot of constraints prevent farmers from selling their products directly in standardized markets. Other distribution channels remain available for farmers.

Of course, industrial players don't benefit from the Farmer to Customer channel; however they sell their products in all cities of Kosovo, which allows them to reach a high number of customers, even those that are far away from the region.

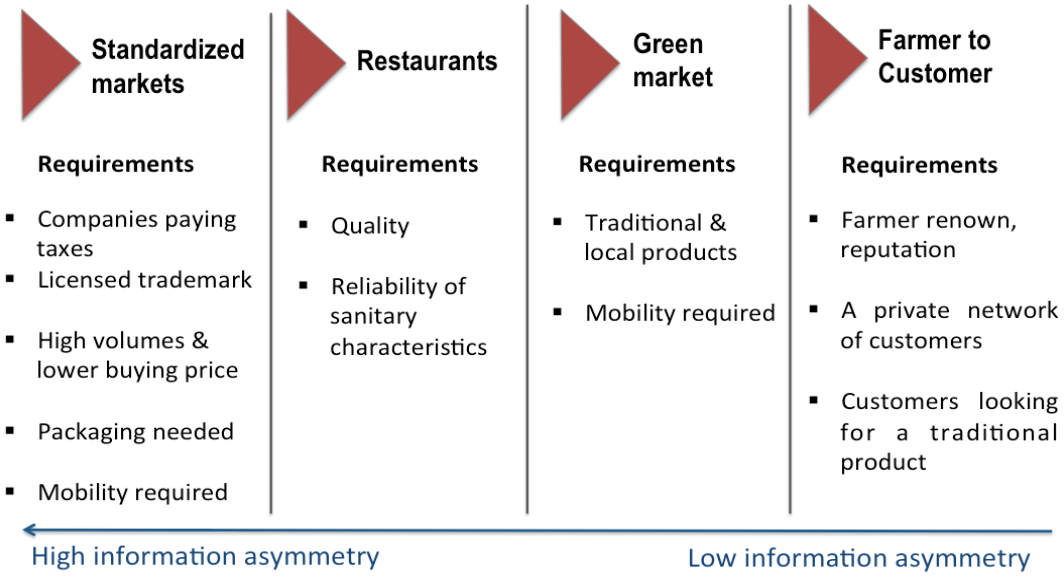


Figure 30 : The different systems of constraints on the different place where the cheese can be sold

The expected economic impacts of a GI on Sharri Cheese would be (1) creating a premium price (2) opening new markets/defending Sharri Cheese reputation at national/international level.

However, three products are competing for the same name: two hard cheeses made on farm, out of raw milk of cow or sheep, and one semi-industrial product made on dairies, out of pasteurized cow (or sheep) milk.

These products are sold on different distribution channels under different packagings: breads of hard Sharri cheese are sold thought short value chains and informal markets, characterizing farm made Sharri cheese. Industrial hard and brined Sharri cheese is sold bottles, ready to be consumed, in supermarkets and shops all over the country.

Therefore, depending on the product definition adopted in the Code of Practise, two different production channels and related players will be able to take advantage of the added value expected from a GI. Unless a collective action allows a better coordination and integration of the two segments.

5 Process: a dichotomy farmers/milk processors

All the "Sharri cheese" producers are globally following the same steps for the cheese fabrication. However, we will show in this chapter that some steps make key differences between "traditional" and "semi-industrial" process of dairies. We also identified a third process, still quite marginal, that is practiced by people we ha called "modern farmers"

Figure 31 gives an overview of the different steps of the process.

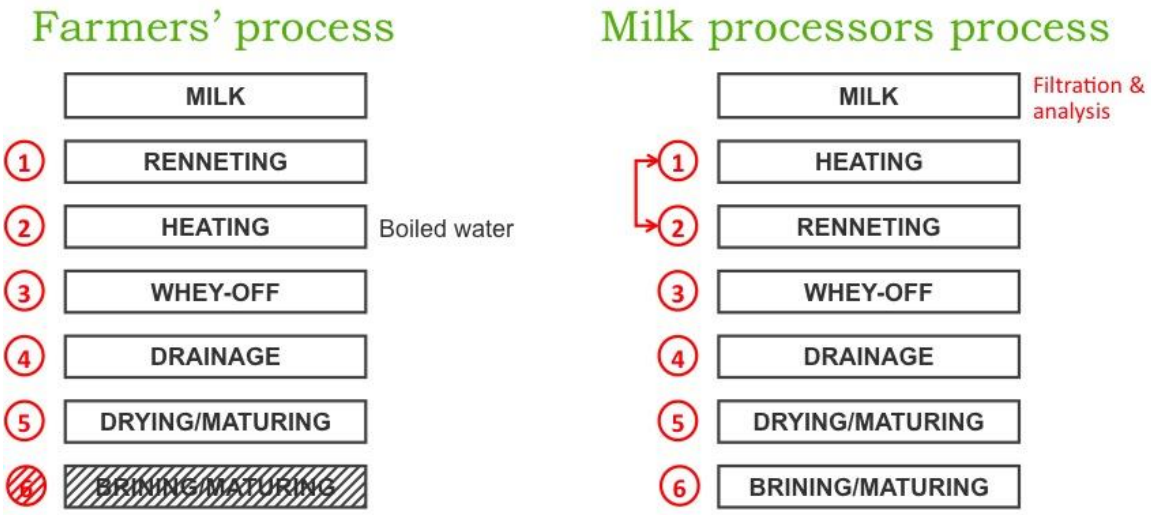


Figure 31 : Overview of sharri cheese production processes

5.1 Farmers process: a process considered as traditional

For the Sharri cheese, farmers use 5L on average to make 1kg of cheese. This figure can vary according to the season, depending on the fat present in the milk.

5.1.1 Renneting

Just after milking in plastic or stainless steel containers, the milk is still hot (about 34°C). At this moment, farmers add the rennet (about one spoon for 40L of milk), which is a cheese-making leaven and will transform the milk into cheese.
After that, farmers close the device with a tissue and wait the transformation between 35 and 50 min (Figure 32).

Buying of this rennet is not traditional.

> *"50 years ago, we didn't use rennet, but [it came] directly from the stomach of the cow." – KIP5.*

And now, farmers could have some problems with the origin (Albania, Bulgaria, Germany, etc.) and the efficiency of this rennet.

> *"There have been difficulties for buying the right product. (…) If the rennet is bad, it doesn't become cheese" – KPT3.*

So this step will necessary need to be clarified and uniformed in the book of requirements.

Figure 32 : Result of the renetting phase.

5.1.2 Heating

Next comes the step of heating: they add boiled water in the transformed cheese (Figure 33). This is a crucial step because the structure and acidity of the cheese depend of the water temperature (KIP1).

Then they keep on adding boiled water until the temperature goes up to 45-60°C and mix all the time while boiling.

When the cheese is transformed, farmers use a tool to cut the cheese in little parts to let the water go through it.

"*If some little blocks of cheese remain, it means the boiled water didn't go through it and it will not be the best quality" –* KPT4.

Here again, the use of boiling water is another mark of modernization.

"*The process, the more primitive one, was heating the stone to one hundred degrees and that stone they put it on the milk". –* KPT3.

Figure 33 : The addition of boiled water in the transformed cheese

5.1.3 Whey-off

To separate the whey from the milk, they don't use machine, but separate by hand. They use usually a filter for the step of whey separation, to avoid keeping some little blocks of cheese left.

Figure 34 : The separation of whey from cheese by hand

5.1.4 Drainage

When it only remains the cheese, they put it in a cloth and press by hand (and sometimes with a stone too) (Figure 35).

Most of them hang up the cheese and wait between 6h and 2 days. But there is not a unique process depending on the families.

> *"Meet 3-4 farmer in different parts. They will try to introduce you the same procedure, but they are not one standard, in the end you are not able to standardize Sharri cheese." – KU2.*

The process can also be different according to the weather. For instance, when the weather is cold, most farmers put the cheese back in boiled water for a while before hanging it.

Figure 35 : drainage step with cheese squeezing by hand

5.1.5 Drying/maturing

Then the cheese is bread-shaped and farmers let the cheese dry on wooden or metal shelves. They roll the cheese 2 or 3 times per day, and they go up the cheese with a bottom-up process. They wait between 7 and 10 days in a room at natural temperature. Some farmers consider there are a minimum number of days to respect.

> *"You can dry the cheese to one or three days but the quality of the cheese will not be there. The minimum is ten days." – KPT5.*

For most people, the yellow colour of the cheese is very important. To conserve the cheese, they put salt on it, cover it with boiled water and wait about 4 days.

5.1.6 Brining/maturing

The final phase of the process is realised by the consumers because farmers can't afford the packaging.

To make it edible, consumers have to keep it in a brine. They have to cut the cheese in triangles, put a layer of cheese, then salted water, then another layer of cheese, then salted water, etc. It has to wait for 40-45 days in order to get the proper taste of Sharri cheese (KPT4).

But the young generation is not always able to realize this step.

> *"Some young consumers don't understand that, return the product, or cut too big pieces, or say it is bad quality but actually it's just that they don't know how to do it." – KPT4.*

5.1.7 Conclusion

This part shows that farmers adopt globally a common process but with some variability in terms of waiting time, quantities, hygienic conditions.

> *"There are as many cheeses as there are producers, even if they have the same process, it is Sharri cheese but it cannot be the exact same." – KPT4.*

People see this process like a very old tradition that needs to evolve (KU2). But farmers have always been improving improved their process: they use boiled water, use more and more stainless steel containers, put rennet, etc.

But this process, which is qualified as traditional and natural ("*For traditional producers, everything is natural."* – KIP5), is under high pressure because the conditions are very hard and farmers don't have much more benefits.

> *"The process is really hard that's why other farmers sold the milk to that company but that's how you lose tradition. It is a hard work but it's worth to keep the tradition". – KPT6.*

The benefits of farmers are very low because they don't have access to a larger market than individuals and green market. This is largely explained by the hygienic standards which are not respected.

> *"Those individuals who make the cheese they don't sell it to the market because they need a special license in order for them to sell it to the market and they have to be controlled and tested by some standards which are set by Agency for Food as they deal with food safety". – KIP1.*

We will see later on that some solutions could be found to allow a traditional process to be maintained and certified under a GI brand.

5.2 Milk processors process: a process considered as semi-industrial

Concerning the milk processors process, one of the three points which is very different from farmers' process is the numerous samples analysis when the milk arrives in the *lactofreeze*.

> *"We fulfil all the criteria to work. Regarding hygiene and sanitary requirements for the production here. – KIP1*
>
> *"They can refuse the milk if the milk doesn't fulfil many criteria: if it contains antibiotics they refuse the milk. And if the acidity level is lower than 6,5 they refuse it too. If the freezing point is lower than 0,57°C it means there is water in it. And if the fat is lower than 3,5%. (…) And protein if it is lower than 3,2%". – KIP1.*

These criteria can vary between the different processors, and it shows that standards are not adopted concerning the milk quality to make the cheese.

> *"If it's not good quality, we don't use it. If pH is upper than 8, we don't use it. If the farmers give cows' antibacterial or medicine or something like that, we don't use the milk that comes from it."– KIP3.*

All the workers wear specific sanitary clothes and all containers are stainless steel (
Figure 37). There are also one or two steps of filtering. Here again the quantity of milk used for 1kg of cheese is quite variable: between 8 and 13L of milk, and it depends of the processor.

Figure 36 : Analysis of a milk sample (pH, fat, protein, freezing point)

Figure 37 : Specific clothes equipment

5.2.1 Heating

The first step of milk processor transformation is pasteurization, which is the second very different point from farmers' process, that's to say they heat the milk at 72°C for 18 sec with a machine. They pasteurize for mainly two reasons: because farmers "*don't comply with ISO standards"* (KSC4 -) and because ok hygienic standards.

> *"Milk has taken so much time to come here, until it arrives bacteria has reproduced, so we pasteurize to eliminate them." – KIP1 – Industrial producer.*

This procedure of pasteurization is entirely mechanized. The rest of the process is hand-made.

> *"Sharri cheese can't be made with automatic machine contrary to other cheeses we produce." – KIP1.*

The last strong difference concerns the adding of additives by most of the processors before putting rennet. Some of them use oxygen peroxide to disinfect the milk or also bacterial additive to fasten the process.

> *"[The bacterias] reproduce, heat the sugar of the milk, and the sugar is turned into acid lactic, so the bitterness is raised. And they also can put calcium: it makes the cheese harder and goes the water away faster – KIP4 (p.132).*

5.2.2 Renneting

Before adding rennet, they check if pH decreases to 6,4. Here again, the brand of the rennet is not standardized. They put between 7 and 10 spoons for 1200L, close the device and wait between 40 min and 1h30 (which is quite similar to the "traditional process" duration).

5.2.3 Whey-off

They cut the transformed cheese in little parts thanks a metal tool and separate the cheese from the whey thanks to an electric pump. Then most of processors add boiled water until the cheese heats up to 65°C. Finally, they remove the hot water with the pump (Figure 38).

Figure 38 : Separation of cheese from hot water with a pump

5.2.4 Drainage

They also use a cloth and press by hand, hang up and let sue for 2 or 3 days.

5.2.5 Drying/maturing

After this time, the cheese is cut in small pieces. The pieces dry for 24 h to 3 days in a room on metal shelves with an air machine (for the bigger processors). The cheese becomes yellow (Figure 39).

Figure 39 : Drying step

5.2.6 Brining/maturing

The last step is the packing with the brine. In general, the water is 10-12% salted and stay 15 days and in cold room before to be sold in supermarkets. Most industrial players add some copra in the water (for at least 25 days) to give the cheese a special taste. But this is not a traditional habit.

> *"The original Sharri cheese is not packed with copra into the brine." – KPI1.*

5.2.7 Conclusion

In this part we can see that there is a unique global process for the milk processors, but we can also observe some variability, which depend of the level of equipment and the culture and experience of the processor. They distinguish themselves from the farmers with high level of hygienic conditions before starting the process.

> *"We educated the farmers [who sell their milk] to take good care of the animals and to not bring us the infected milk. In the contract it is said that if the milk comes with problems and is infected, then the damages are paid by the farmers. So they are very careful with that". – KIP1.*

The high level of hygienic conditions continues during all the process with a specific treatment of the milk with pasteurization. Pasteurization is a guarantee for them to access to the big markets.

> *"Supermarkets don't take cheese from them [farmers that make cheese at the farm] because they don't do analysis, they don't pay the state, and their milk is not pasteurized, and so on." – KIP3.*

However, farmers have to pass controls that guarantee good sanitary conditions of the flock.

> *"We control the sheep each year, each vaccine, we don't skip none. And we do the blood tests each year too to avoid the brucellosis mostly or any other disease". – KPT6.*

Despite of advanced conditions of mechanization, the process of Sharri cheese is mainly realized by hand. Still, processors try to create a standardized process thanks to all the good conditions of equipment. The main objective is to create a product that is always the same.

> *"Traditional products are never the same. Customers know the taste, they choose taste, smell, and hardness and don't want every day differences because the client is disoriented". – KIP1.*

5.3 Modern farmers process: a process considered as intermediate

Modern farmers are farmers who have invested in equipment to improve work conditions (mechanization, sanitary) in the process thanks to financial support from state, development agencies

or NGOs. They are very few and represent an intermediate situation between farmers and milk processors.

They are aware of the importance of sanitary conditions.

> *"We try to be clean and in good sanitary conditions for ourselves, not because they visit us, but because I want to have my clients and be the best in the cheese market. – KPT3".*

The opportunities of market opened thanks to these good conditions are a determining factor to respect good hygienic conditions.

"They saw the quality of the cheese, so they decided to have it for themselves in Germany." – KPT3.

For the process, they use some special clothes and they can easily wash their hands and know the importance to filter the milk to stop the dust and other harmful particles

For 1kg of cheese, they need 5L of milk.

5.3.1 Heating

Like the milk processors, modern farmers start to heat the milk before adding rennet. **But they don't pasteurize it.** The heater goes under the device with a pump that always mixes the milk and allows every part of it to heat by spreading the boiled water all around the device. The thermometer always shows the flowing water's temperature and there is also one for the milk's temperature (45-47°C). Some farmers simply use a stainless steel they heat up to more than 50°C. It lasts between 20 and 30min.

5.3.2 Renneting

While the milk is heated they add the rennet (about 5g for 40L of milk). After this, they stop the heater and continue to mix for 2 minutes. They close the device where the milk stays for 40-45 minutes. The origin of the rennet can vary too.

5.3.3 Whey-off

Then they the transformed cheese with a stainless steel tool and turn on the heater (about 40°C) once again while they cut the cheese in little parts, this takes 10-15 minutes. Then after the whey is removed thanks to a pump.

5.3.4 Drainage

Then they put the cheese in a round-shaped container (stainless steel) that gives its bread-shaped form and press with hands so the remaining liquid is removed also, and wait 12h. After that they hang up the cheese for 12h in a cloth. Some also put the cheese in boiled water for 10min before hanging up for 12h.

5.3.5 Drying/maturing

Then, the cheese is yellow colour and they cut it in small pieces. It dries on stainless steel stand at natural room temperature between 3 and 5 days, and they roll it every 10 hours so the air can pass through all the places and till it's really solid.

Some put the bread-shaped cheese between 7 and 10 days on wooden stands that have spaces which allow the air to enter each part, which also consists on rolling the cheese each day in the morning and the afternoon and to use a bottom-up way.

5.3.6 Brining/maturing

After that they put it on wooden stands and spread salt all around. They leave it for another 12h and start packing it. Then it's sold or conserved. If it isn't sold after 2 or 3 days, they make a salted water (10%) to get conserved. So there are two ways of spreading the salt: on the wooden stands or in the plastic jars.

"When the cheese is 40 days old, the taste and the quality are better." – KPT4, but "the Sharri cheese you can consume within 10 days to eat" – KPT6.

5.3.7 Conclusion

For "modern farmers", there is a big improvement in hygienic conditions and these farmers are now sensitive to this aspect of the production. Moreover the work conditions are really better while keeping their traditional practices.

> *"Long day ago it was really hard to go to the mountain, so now they are roads, they can go easily. He can send there the container and the container really making to be cleaner. In one hour you can send the container in the mountain. That it is easy to send the container in the mountain because we can tract him with a tractor, and the container is really more sanitary because in mountain the climate is really instable: "we have snow, wind, everything gets dirty so the container is really clean."* – KPT3 .

Regarding the implementation of GI, modern farmers are a good example of adaptation to standards thanks to financial support.

The Sharri cheese making process is exactly similar from one community to another living all along the Sharri Mountain range.

However, some differences exist between farm Sharri cheese (produced by traditional or modernized farmers) and semi-industrial Sharri cheese (produced by local dairies).

Even if the different steps remain quite similar, the three main differences are (1) the sanitary controls on raw milk (2) milk pasteurization and (3) the brining of the cheese.

Additionally, most of the dairies use cow milk to answer consumer's preferences and changing habits and observer a shorter maturing period.

6 Legal and institutional framework on Geographical Indication in Kosovo

If Kosovo has already started a legal convergence process toward the EU Geographical Indications framework and has recently issued a new law on GI that complies with EU standards, the institutional setting at national level is remaining a step behind, and reveals competing visions carried by the different institutions involved in this building process.

6.1 Legal convergence process (2004-2016): from a general Law on IPR to a specific Law on GI

This sub-section gives an insight of the history of the protection of intellectual property in Kosovo and focus on the main stipulations of the succeeding laws on Geographical Indications.

Back in the early 2000s, Kosovo started the negotiations with the EU on stabilization and association agreement (SAA) and had to adopt all the laws in regards to the intellectual property rights. Through EU technical instruments and cooperation, Kosovo issued and voted its first Law on patents, trademarks, industrial designs and copyrights in 2004 (Law No 2014/49). This law has been amended twice since then and the last versions has voted in 2011 (Law No 05/L-28, on Industrial Design).

The Intellectual Property Agency (IPA) under the umbrella of the Ministry of Trade and Industry (MoT), started to investigate the question of Geographical Indication in 2012. The first law on GI was voted for the first time in 2013 (Law No 14/L-187, on GI and Designation of origin).

However, after revision by EU experts it came out that amendments had to be added to the Law on patents, trademarks and designs, and that a new Law had to issue on GI and designation of origin to fulfil the gaps with the EU directives. This process was delayed by the politic crisis of 2013 (6 months of government suspension). Finally, the new Law on GI came out in 2015 and was voted in January 2016 (Law No 05/L-051) (Figure 40).

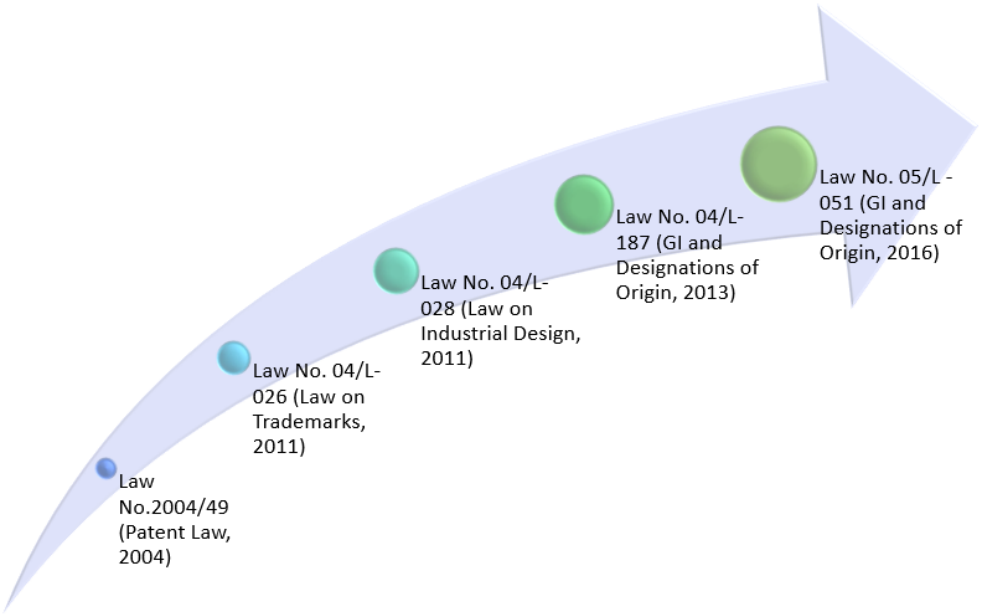


Figure 40: History of the laws for the protection of Intellectual Property in Kosovo

To fully comply with the EU standards, two main provisions were added to the first Law on GI, related to (i) guaranteed traditional specialties (Box 2) as well as (ii) a trans-border issues (Box 1).

These two points are particularly important while considering a GI on Sharri cheese.

First, the Sharri Mountains stretch over Kosovo, Macedonia and Albania. In the case of a large territorial delimitation for the Sharri cheese that would include Macedonia and/or Albania, protection of Sharri Cheese name may be possible under a joint application of different national groups.

Second, it is important to note the difference between GI and guaranteed traditional specialties. While GI deals with the link between a product and its territory of production, the guaranteed traditional specialties only protects a traditional method of production (recipe) (Josling, 2006). Thus, the traditional specialty does not certify that the protected food product has a link to specific geographical area, but that it has a « specific character » inherent to a traditional process or traditional raw materials. In that sense, any cheese that would be produced outside Sharri region but according Sharri Cheese methods, would not be granted a GI protection since they would not be able to prove their link to the territory.

Box 1 : Law No 05/L-051, article 20
on Trans-border geographical indications

In the case of a name designating a trans-border geographical area or a traditional name connected to a trans-border geographical area, several groups may lodge a joint application.

Box 2 : Law No 05/L-051, article 78
on the mandatory criteria for a product being a guaranteed traditional specialty

1. A name is eligible for registration as a guaranteed traditional specialty where it describes a specific product or a food that:
1.1. Results by the method of production, processing or composition that correspond to traditional practice for that product or food; or
1.2. Is produced from raw materials or ingredients that are traditionally used.
2. In order for a name to be registered as a traditional specialty guaranteed, it should:
2.1. Be traditionally used by referring to a specific product, or
2.2. To identify the traditional character or specific character of product.

A last point of attention on the legislative framework on GI we would like to raise is related to the relation between Trademarks and GI. If a GI conflicts with a Trademark or if a Trademark uses the name of a geographical area, the GI always prevails (Box 3). At the European level, some exceptions are made as an extension of the Article 23 that states that « *each Member shall provide legal protection for geographical indications* » (Josling, 2006). However, the Kosovan Law does not mention any provision. In the case where a GI would be registered using the same location name as an existing trademark, both names are allowed to coexist. This point should also be taken into consideration because the name of"Sharri cheese" is already used by many industrial producers as a Trademark.

Box 3: : Law No 05/L-051, article 13
on the relation between trademarks, designation of origin and geographical indications

1. Where a designation of origin or geographical indication is registered pursuant to this Law, the application for registration of a trademark corresponding to one of the situations referred to in Article 12 of this Law associated with the same type of product is rejected, if the application for trademark registration is submitted for registration after the date of filing of the application for registration according to this Law. […]

3. A trademark, the use of which corresponds to one of the situations defined in Article 12 of this Law, and to which it was applied for registration in good faith in Kosovo before to the date of filing of the application for registration, according to this Law, may continue to be used despite registration of the designation of origin or geographical indication, if there are no grounds for its invalidity or revocation according to the Law on Trademarks. In such cases, the use of the protected designation of origin or protected geographical indication shall be permitted as well as use of the relevant trademarks.

6.2 GI administrative framework: competing visions on Geographical Indications

Registration body: As of today, only the MoT through the Intellectual Property Agency is dully identified as being the registration and accreditation body.

Certification body: Notwithstanding, the Livestock department in the Ministry of Agriculture, Forest and Rural Development (MoA) has been temporary chosen as the certification body as a remedy of the lack of a private operators accredited by the IPA.

Control body: The same process will have to be done for the control body which is currently embodied by the Food and Veterinary Agency (FVA).

This organization is summarized in Figure 41.

Figure 41 : Organization of the different bodies to frame the GI

The three bodies mentioned above are the main players in the GI creation process.

Nevertheless, according to the interviews that we led with representatives of the three different bodies, it seems that each of the three groups is tied with different interests related to their position, which makes them look in different directions.

GI as a tool to support small scale producers: The IPA, whose mission is to write the law, see the GI as a way to promote small-scale agriculture and small producers? It is obvious that for them, the real

Sharri cheese is made out of sheep milk, but still they are aware that putting a GI exclusively on sheep cheese would exclude and prejudice a lot of cow cheese producers. According to a representative of the IPA, the plan is to « *take the Sharri cheese as a good example to continue with other PDO and PGI* » (KPI2). The Sharri cheese would also be the first Kosovar product to benefit from a GI. Its success would then validate the law.

GI as a tool for modernizing the dairy sector: For its part, the MoA aims at promoting the rural development from an economic and social standpoint while keeping in mind their Europe orientation. As part of its strategy, it tries to modernize the production to get closer to the EU sanitary standards by standardizing, intensifying and mechanizing the farms. To achieve this goal, the MoA already gives a 70€ subsidy per cow to egg the farmers to increase the size of their cow flock (while it is only 15€ per sheep). As an additional incentive, the Livestock department of the MoA is also assessing the possibility of raising this subsidies up to 100€ for cows, 20€ for sheep and add a new 50€ subsidy for Sharri dogs. This proposal should be discussed next July to be implemented next year. Moreover, in the MoA's opinion, the cow cheese is preferred by the consumers, so there is no reason not to help the cow cheese industry to get bigger.

> *« To determinate specifically what is the Shari cheese, we must describe precisely what is the transformation of proteins and fat, the procedure of pasteurization, of the enzyme, of the maturation etc. All is about the technological process » (representative of the Livestock department of the MoA, KPI3)*

GI as a tool for a territorial rural development: The FVA's opinion is midway between the vision of the MoA and the IPA. Whilst they take care of the public health by working on the improvement of the hygiene and sanitary level organizing controls on feed and food, they also ensure that the farmers keep their traditional process. Their strategy would then be to unify the production process before putting any name on the cheese, but while applying a flexibility provision. This concept has been elaborated by the European Commission and aims at helping the relevant national body to implement food safety requirements in an appropriate manner for the small farmers who cannot afford new machines.

> *"No matter if the cheese is made in a wooden pot or in a stainless steel case, or even if it is hung 10 or 12 hours so that it dries, it doesn't make that big a difference. However, the important point would be that the animals could pasture. That's what the flexibility concept is about. And I trust the farmers would comply more easily with the sanitary norms thanks to it "(KPI6).*

6.2.1 Secondary players to support the different visions

Two more institutions come to support the visions aforementioned. First, the National Park seems to endorse the views of both the IPA and the FVA by working on a cooperation project with the GIZ to provide equipment to the small sheep farmers in order to enable them to upgrade the hygiene. The National Park as well as this project carry the environmental issues. Indeed, the pastoral practices that favour sheep pasture help to maintain grass and open fields within the park. In the same line, the National Park also plans to create a specific brand for all the products produced within it. This would include the cheese but also other products like honey, meat etc. As far as the cheese is concerned, as long as the farmers follow the traditional process for making the cheese and pay a tax (amount still to be decided), they could benefit from the brand. So far, this project has not started yet, but if it really takes place, this could have a positive environmental impact as well as a positive impact on public health, and then foster the sheep agriculture while improving the quality of life of the farmers in this area.

On the opposite, the University of Agronomy and Veterinary - which is in charge of carrying out studies with the farmers in order to write down the standards that would define a traditional process - clearly stands for the vision of the MoA. In the same line as the Livestock department, a professor in zoo technology underlines the fact that if the traditional sector doesn't change its practices (for

example hand-milking) and upgrade their processing channel, it is likely to gradually disappear. According to him, two scenarios can be foreseen: either an organization of producers is created to support the sanitary issues while saving the traditions, or industrial companies are likely to come up with big investments for modernizing the production channel. This second option would clearly favour the medium and big farmers who already have the capacity to absorb these investments while setting the small farmers aside.

GI building process is still at an embryonic state in Kosovo. Even if the legal framework is ready, it still needs to be validated by a successful implementation and the registration of products as PGI.

Sharri cheese could be one of those products. Nevertheless, if it gathers some of the required characteristics like the traditional aspect and the fact that it's produced mainly in the Sharr region of Kosovo, a lot of parameters still need to be defined.

Indeed, we saw that the various institutions in charge the implementation of GIs didn't share the same visions of the GI tool: valorising small-scale agriculture for the IPA, modernising agriculture for the MoA, and enhancing rural development for the FVA. The final shape of GI products in Kosovo will be partly defined by the vision that will prevail among these institutions.

7 Synthesis: Key Strategic Issues in the creation of a GI on Sharri cheese and potential impacts on rural development and agro-biodiversity conservation

In order to create a GI on Sharri cheese, several choices have to be made regarding the definition of the territory, the product and the collective action behind it. These choices will favour different types of players, practices and lead to different degrees of environmental protection.

After presenting a typology of the different players directly or indirectly involved in the creation of a GI on Sharri cheese, we will therefore review the different parameters on which a GI will have to make arbitrages.

We will then analyse the potential impact of these choices on players, rural development and environmental protection. Finally we will select the scenario leading to the highest degree of environmental protection before critically analysing its limits as well as the limits of the GI tool in itself.

7.1 Players typology

Different stakeholders will be directly or indirectly involved by the creation of a GI on Sharri cheese. As previously evoked in this document, these players have different understanding and views of what should be such a GI. It is therefore critical to have a good vision of the typology of players involved, their issues, strategies and constraints, in order to make a relevant analysis of what is at stake in the creation of a GI on Sharri cheese.

As these different players have already been introduced previously, we realised a synthetic table summarising key elements for each of them (Table 9).

These categories of players differ from the preliminary categories used in the database of the project. Indeed, when we started analysing the data collected, we realised it might be more relevant to slightly change the player's typology in order to better reflect the reality of the field and to make categories more uniform in terms of stakes, strategies and constraints

This typology allows pointing out some inter-sectoral groups of interest for several aspects.

On one side we have dairies, supermarkets and ministry of agriculture, that insist on minimizing the sanitary risks by pasteurizing the milk, even if it changes the organoleptic qualities of the cheese. This group is also favouring the intensification of the agriculture, and in particular cow production.

On the other side, the veterinary agency, the national park and the farmers (mainly the "modernizing farmers") are more in favour of an improvement of sanitary conditions, but with some flexibility that would allow the maintenance of traditional practices. They also give more importance to the pastoral practices, and to sheep flocks going high in the mountains in summer time.

Restaurants are at the moment not clearly positioned as they benefit from all kind of products.

This gives a small idea of the position of players concerning the strategic choices that are now going to be developed.

Table 9 : Players around the definition of a GI on Sharri cheese

Player category	Player sub category	Stakes	Strategies	Constraints
Farmers	Traditional	Improve sanitary conditions Protect traditions and conserve sheeps Increase sales and margins Necessity to find new sale channels	Increase flocks Pay for sanitary controls	Access to funding Lack of workers Difficulty to adapt to sanitary and regulatory requirements Packaging
	Modern	Protect traditions and conserve sheeps Increase sales and margins Necessity to find new sale channels	High quality product Increase flocks	Packaging Funding and workers
Dairies and transformers	In Prizren	Regular milk quantities and quality Export	Shift from sheep milk to cow milk GI to prevent imitation by other dairies	European laws that prevents from exporting for now Loss of tradition
	Outside	Increase sales and margins	Use the reputation of Sharri cheese	European laws that prevents from exporting for now GI if it is created
Distribution	Supermarkets	Being able to buy products in high volumes at low prices at any moment of the year. These must be mass consumption products.	Buying from registered companies that deliver standardized products all year long	Their customers' preferences. Must focus on highly demanded products because of low margins.
	Restaurants	Answer to the demand for Sharri cheese coming from customers and summer tourists	Buying cheese where it's available, either at the green market or in supermarkets, and selling it at a much higher price	A volatile demand with a peak in summer
Institutional players	IPA	Have the law validated by a successful GI implementation: use a GI on Sharri cheese as a proof of concept and case study	Use the Sharri cheese as a good example that would pave the way to more PDO and PGI	Lack of funds, lack of private entities able to take over GI certification and control
	Ministry of agriculture	Get closer to the EU standards to comply with their EU orientation, Improve Kosovo's food independency	Intensification, standardization, mechanization of agriculture and livestock	Receive conditional or at least oriented funding form the EU and other international institutions Admission to the EU
	Veterinary agency	Improve sanitary standards for economical & public health issues	Unifying the process of production with a flexibility provision to improve sanitary standards on Sharri cheese	Not enough staff, lack of funds and training for sanitary inspectors
Environment players	Ministry of environment	No information, cancelled the scheduled interview		
	National Park	Protect park biodiversity and tradition	Develop eco-tourism, maintain pastoralism, valorise local traditional products; Try to convince farmers to collaborate	No visibility, no specific law
	NGO	Develop projects for biodiversity conservation and environmental education	Find resources with international cooperation institutions	Lack of financial resources and political support

7.2 Relevant Key Strategic Issues to create a GI on Sharri cheese

Choices to be made to create a GI on Sharri cheese are still very open, which leaves some space for prioritizing rural development and/or environmental protection if some players are willing and able to push in this direction.

7.2.1 Territory Delimitation

The first parameter to decide on when creating a GI is the territory on which this GI will be based. During our interviews, we noticed that depending on their location, interviewees had different understanding of the territory of Sharri cheese production and on what should be the territory of a GI on Sharri cheese. These different opinions were based either on identities or on geographical criteria.

Different visions of the territory in terms of identities

As we travelled around the Kosovar Sharri Mountains to better understand the limits of Sharri cheese production, we met different players, and mostly farmers, who had different opinions on this topic, that are materialised on the map below (Figure 42).

These different opinions were mainly supported by a cultural and identity argumentation.

According to some of them, the plateau above Dragash (1), where are situated Brod and Restelice, is the historical cradle of Sharri cheese production. But as we moved away from this plateau to the rest of Dragash municipality (2), the mountainous part of Prizren's municipality including the Zhupa valley (3), to Strpce (4) and finally the western part of Kacanik's municipality (5), we also met people who claimed Sharri cheese was also made in their valley. When we asked the farmers to explain to us the process of making Sharri cheese, we could also observe that their practices were relatively close. In addition, two other question marks remain. First, regarding the exact limits of Sharri cheese making claims in the municipality of Kaçanik since our time was limited and we didn't have the opportunity to sufficiently investigate this point. The second remaining question mark regards cheese production in Macedonia. As the Sharri Mountains spread from Kosovo to Macedonia and Albania, it is possible that farmers of these regions also use this appellation. Yet we again didn't have the time to enquire more on this issue.

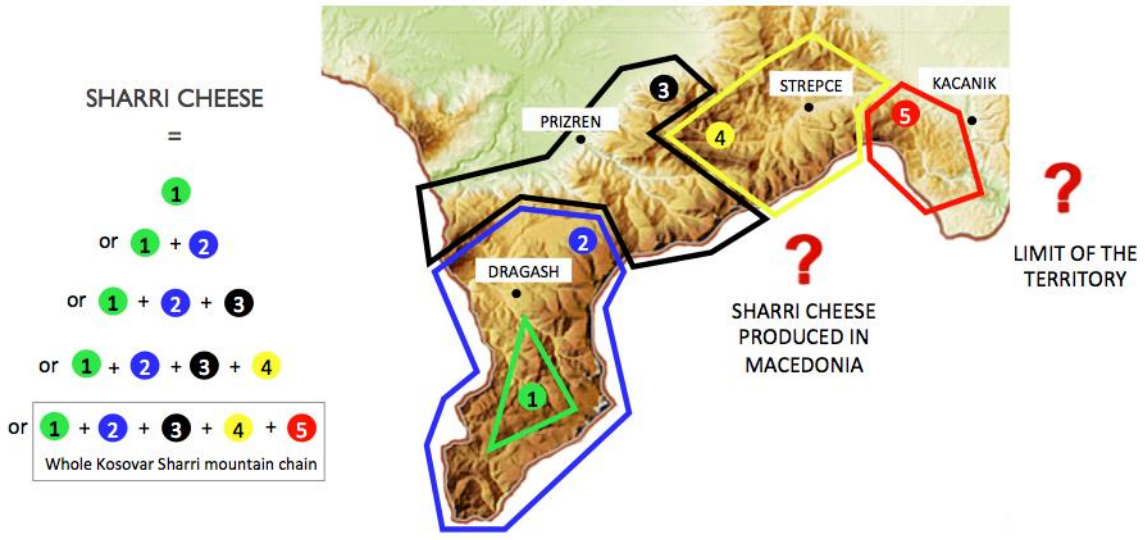


Figure 42: Different identity visions of the territory of Sharri cheese production

(Background map Maphill). The number are based saying of players

Different visions of the territory in terms of geography

Before exposing the different visions of what should be the territory for a GI on Sharri cheese based on geographical criteria, it is important to point out that, for a GI on cheese, be it an PGI or a PDO, the territory of milk production and transformation doesn't have to be exactly the same. Indeed, milk is one of the raw materials that can come from another territory than the territory of the PDO as long as this territory is clearly defined and the PDO's book of requirement respected (Kosovo's Law on GIs). Visions of the Sharri cheese territory also differed between interviewees regarding geographical criteria. These different opinions have been summarized in the figure below (Figure 43).

For some players, Sharri cheese is made with milk produced by animals fed in the highland pastures and transformed into cheese in the Batchilo.

Others think the milk has to come from the pasturelands but can be transformed in the mountain's valleys as well.

Another opinion is that the milk has to be produced in the mountains, regardless of the altitude and transformed there as well.

Finally, a few players think that it has to be produced in the mountains, but can be transformed in the plain of Prizren.

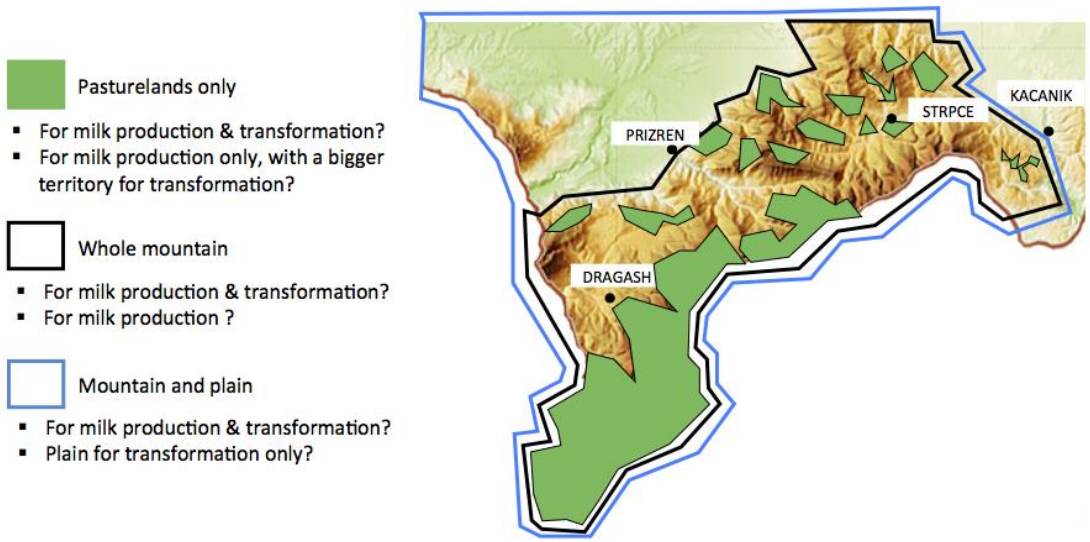


Figure 43: On which type of arguments can the choice of the territory of a GI be based?

It seems to us that a definition of the territory based on geographical criteria would be more relevant than a definition based on identity criteria, as long as the cheese making process remains similar, which seems to be the case as far as the Strpce valley, but regarding which we lack information on Kaçanik's farmers.

7.2.2 Product Definition

The second important thing to decide when creating a GI is the definition of the product, which will lead to the drafting of the GI's book of requirements. During our interviews and observation in the Sharri region, we noticed that Sharri cheese was not a stabilised product and could be highly variable. Indeed, even if cheeses called Sharri cheese were always hard-brined cheese, they could have very different aspects and characteristics. These differences can be regrouped in two categories, namely (i)

milk and pastoral practices and (ii) transformation, which corresponds more or less to the definition of the process but can also concern the place of transformation.

These differences have been summarized in a non-exhaustive synthetic gradient figure below (Figure 44) that we will further detail in the following paragraphs.

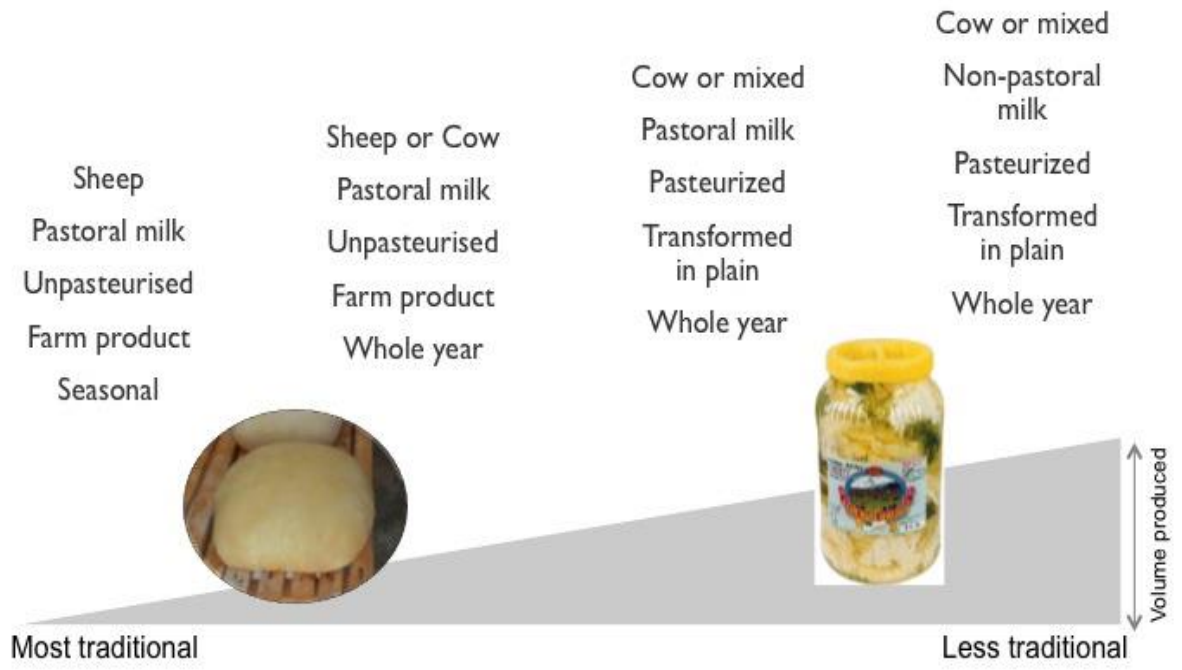


Figure 44: Typology of Sharri cheese products

7.2.3 Raw product and related pastoral practices

The first differences we noticed among different products claiming to be Sharri cheese were linked to the nature of the milk used as raw material.

Type of milk

The main debate we encountered regarding Sharri cheese was focused on the nature of the milk used to make it: should it be sheep milk, cow milk or mixed milk. Most people agreed traditional Sharri cheese is made with sheep milk.

> *"Because they are saying that Sharri cheese is produced with cow, but it's not true. No it is not true Sharri cheese. Because no matter how the cows are headed up to the same place in the mountains, it is not Sharri cheese. Sharri cheese is with sheep milk." KPT5, traditional farmer*

However, several players also made it with cow milk for several reasons. The first motive evoked both by farmers and dairies was a changing demand of consumers. As it was described earlier in this report, the younger generation tends to prefer cow cheese while concerns on fat intakes are rising among the population, creating a preference for cow milk over sheep milk, the latest containing more fat.

> *"At first times, we started to produce Sharri cheese only with sheep milk. But the sheep milk has a big % of fat, so people started not using it and not buying it. Gradually, we started to produce the Sharri cheese with sheep milk too and with cow milk. And we saw that people started to buy and to consume more cheese from the cow milk. And for the moment, we've eliminated the Sharri cheese that was made from sheep milk and we're just producing Sharri cheese from cow milk." KIP3, industrial producer*

Another important reason evoked is the higher profitability of cow cheese production, due to the fact it is not seasonal and that costs and efforts for producing it are lower than for sheep cheese, while in the same time the selling price of sheep cheese is slowly decreasing to the price of cow cheese. According to some dairies still producing a little bit of Sharri cheese made with sheep milk, it would be harder and harder to find people willing to sell them sheep milk for this precise reason.

> *"At the beginning they had more farmer and around 1700L of sheep milk. But now it is more or less 700 L. (…) it is because they (sheep farmers) are leaving their job. Migration has hit them hard and they are selling their sheep to move to another aspect of the job." KIP2, industrial producer*

But maybe it is also because they don't grant them a big premium on sheep milk over cow milk. The dairy cited above buys cow milk for 0,32€/L and sheep milk for 0,34€/L. On the other hand, we met sheep farmers who sold their sheep milk to another located outside of the Sharri region that was collecting sheep milk in the mountains for 0,75€/L and was promising 1€/L for the 2016 season. These farmers seemed quite satisfied with this price.

In this light, the critical issue for Sharri cheese made with sheep milk seems to be more a matter of consumer demand and price premium than a matter of production. If the GI could enable farmers to secure such a premium on sheep cheese and develop the demand for sheep cheese, then the production would likely follow. If the GI makes no difference between cow cheese and sheep cheese, then, on the contrary, cow cheese would be likely to take over sheep cheese. This is therefore a critical choice to be made when designing a GI on Sharri cheese.

Pastoral practices

Another very important parameter to decide on concern the pastoral practices involved in the production of the milk used for making Sharri cheese. Many players underlined that one of the key characteristics of Sharri cheese was to be made with the milk of animals kept most of the time outside and fed in the mountain's pasturelands with mostly natural food.

So it depends from the place; from where the sheep are fed. It has fresh air and everything is fresh. So that's the reason why Sharri cheese is delicious and why it tastes so good. KPT5, traditional farmer

Key parameters to decide on are: the pastoralism rate (min. number of outside grazing); a clear definition of pastures (altitude, location and characteristics of the pasturelands); the type of winter alimentation and the maximum amount of concentrates or corn authorised.

7.2.4 Cheese production process and milk transformation

Regarding cheese making process, main variables concerned the place of transformation, the choice to use pasteurised milk or not, the length of maturation, the sanitary conditions and the final packaging of the product.

Where? At the "Batchilo", on farm or in the dairies?

It is first very important to define the place where the cheese should be produced. Is it a cheese from pasturelands, made from milk produced by animals milked in the highland pastures with the cheese being transformed directly in the *Batchilo*, like it is the case for the denomination « *chalets d'alpage* » for the French Cheese Beaufort? Or can it be as well a « farm cheese », made at the farm of producers who bring back the milk to their house and transform it there, which is most common case among farmers interviewed. A last option could be to authorise it to be transformed in the valley, like it is already being done by dairies from Prizren. In this case it would be a dairy cheese. If it is possible to choose only one of this options, it is also possible to combine them, without distinguishing them or by

using sub-mentions for a same GI, which is the case for the abovementioned « Beaufort » and on which we will come back later.

Pasteurized milk or not?

Regarding pasteurisation, the cleavage was clear between farmers and dairies or semi industrial farmers. While farmers quasi never pasteurised their milk before turning it into cheese, dairies always did. Dairies justified pasteurisation with concerns about hygiene; while farmers mostly didn't have the financial means to invest in pasteurisation equipment and also thought it would change the taste of the cheese.

Sanitary conditions

Sanitary conditions also differ between different types of producers. Dairies and semi industrial producers have all the equipment required like special protection clothes, stainless steel tanks and tools, tiled floor and walls and performed several tests at each type of the process (on the milk used and on the cheese at different transformation stages). Modernised farmers had some of these items while traditional farmers had almost none of them (Figure 45). Dairies' products, milk and cheese, are tested very often by the Food and Veterinary agency. *"Sanitary control come quite a lot, 1 time every 1,5 month, by surprise."* KIP1.2 Industrial producer Sharri.

Regarding traditional farmers, tests are made on animals by veterinaries while some surprise tests can be made on milk and cheese by the Food and veterinary agency, between 0 and 3 times per season. Yet the agency lacks staff to control everybody in the mountain frequently. If the goal of the GI is to export Sharri cheese outside Kosovo, the book of requirements will have to set up some rules regarding hygiene and sanitary conditions. Yet as it is the case in France, flexibility and derogation conditions can be set up for small producers as well.

Figure 45: (from left to right) Pictures of semi-industrial (KIP1), modern (KPT9) and traditional (KPT4) farmers.

Cheese maturation: what duration (drying and brining)?

As we have seen in the process section, the duration of maturation is not unified between producers. The choices made in the book of requirement can exclude some process and favour others.

- For famers, drying ranged from 5 days and 2 weeks for farmers, who mostly sold cheese under the form of breads.
- For dairies or semi-industrialised farmers, it ranged
    - From 7 to 10 days if the cheese was dried under the form of a bread or in blocks
    - 24h to 3 days if the cheese was dried in the form of small bits
    - To which were added 25 days in the brine

A very slight number of people also produced soft cheese they called Sharri cheese, while recognising it was not traditional Sharri cheese. Some flexibility could be kept regarding this parameter, yet a

minimum duration of maturation should be defined in order to make it possible for the cheese to develop all its organoleptic qualities.

Packaging: should Sharri cheese be sold before or after brining?

While traditional and modernised farmers mostly sold their cheese under the form of a bread, before the brining phase, or in blocks kept in the brine but sold without it, semi industrialised farmers and dairies sold it in small bits contained in a jar full of brine. (Figure 46) The GI could or could not impose one type of presentation. The main issue is that while younger customers tend to prefer the jar package since they don't know any more or don't want to bother with making the brine themselves, traditional farmers often don't have the financial capabilities of providing such a packaging.

Figure 46: Presentation of Sharri cheese, from left to right: bread, blocks and jar

While making all the above mentioned choices regarding the definition of the product, it is important to keep in mind that the GI tool provides some flexibilities and that other market tools or labels could be used to protect products that would not fall under the defined GI.

Possibility of creating subcategories of products with "sub-mentions"

Subcategories of products can be distinguished from each other's under the same GI by the use of « sub-mentions ». We could imagine sub mentions to distinguish cow Sharri cheese from sheep Sharri cheese or to distinguish between different practices.

For example, the PDO « Beaufort » can be accompanied by the mention « Beaufort d'Eté », which means the Beaufort was produced during the pasture season, with milk coming from the pasturelands, while the mention « Chalet d'Alpages » indicates that the cheese has been made with milk from pasturelands as well but has also been transformed there (Figure 47).

Figure 47 : PDO Beaufort, mention « Chalet d'Alpages » and mention « Beaufort d'Eté »
(Pictures from http://www.lineaires.com and www.refuge-alpage.com)

7.2.5 Collective action mainly driven by stakeholders

In Kosovo, the GI builing process on Sharri cheese has mainly been initiated by the government.

More precisely, by the Intellectual Property Agency (IPA) that was in charge of the creation of the GI law and therefore supervises its implementation. The Food and Veterinary Agency and the Livestock

department of the Ministry for agriculture are also involved. These institutions are willing to use Sharri cheese as a case study to build experience and capacity in Kosovo for the implementation and management of future GIs. These institutions seem to be willing to provide technical and maybe financial support for the creation of a GI on Sharri cheese. Their position have been described in greater detailed in the point 8 above. But they are only stakeholders of the Sharri cheese production.

Sharri Cheese's shareholders are producers. For the moment, they are staying in a waiting position.

In the past, German cooperation (GIZ) initiated a project for the creation of a collective trademark on Sharri cheese. If dairies and industrial producers have heard about GIs, and seem to understand the difference between GIs and trademarks and appear interested, they have not yet initiated any collective action to take over the process of registering the GI. On the other hand, if some farmers already have some hints about intellectual property tool, they mostly confuse GIs with trademarks and need to be convinced. If during or interviews we found out the existence of an association of Sharri cheese producers in Prizren municipality, this association has no link with GIs and doesn't seem very active. This situation is summarized in Figure 48.

Figure 48: Collective action for a GI on Sharri cheese

7.2.6 Decision Tree: possible combination of Key Strategic Issues

Choices made regarding these parameters will favour different types of players, practices and lead to different degrees of environmental protection. In the figure below we showcase the major options regarding these parameters and the potential impacts they could have in terms of players favoured (in black), rural development (in blue) and environmental impacts (in green). This decision tree is obviously not exhaustive since possible combinations are numerous. For each major parameter, options showcase have been chosen to illustrate a gradient of combinations that give a rough idea of the field of possibilities of choices and their potential impact, from choices more in favour of traditional producers and optimising environmental impact to choices more favourable to a concentration and relative industrialisation of the value chain. In a same way, all the parameters on which the book of requirement could settle, for example the number of days spent by the animals in pasturelands, the percentage of winter food coming from the mountain vs. the percentage of concentrates allowed… were not detailed in the section breeding practices. Boxes in the figure below simply represent general orientations and don't go into details.

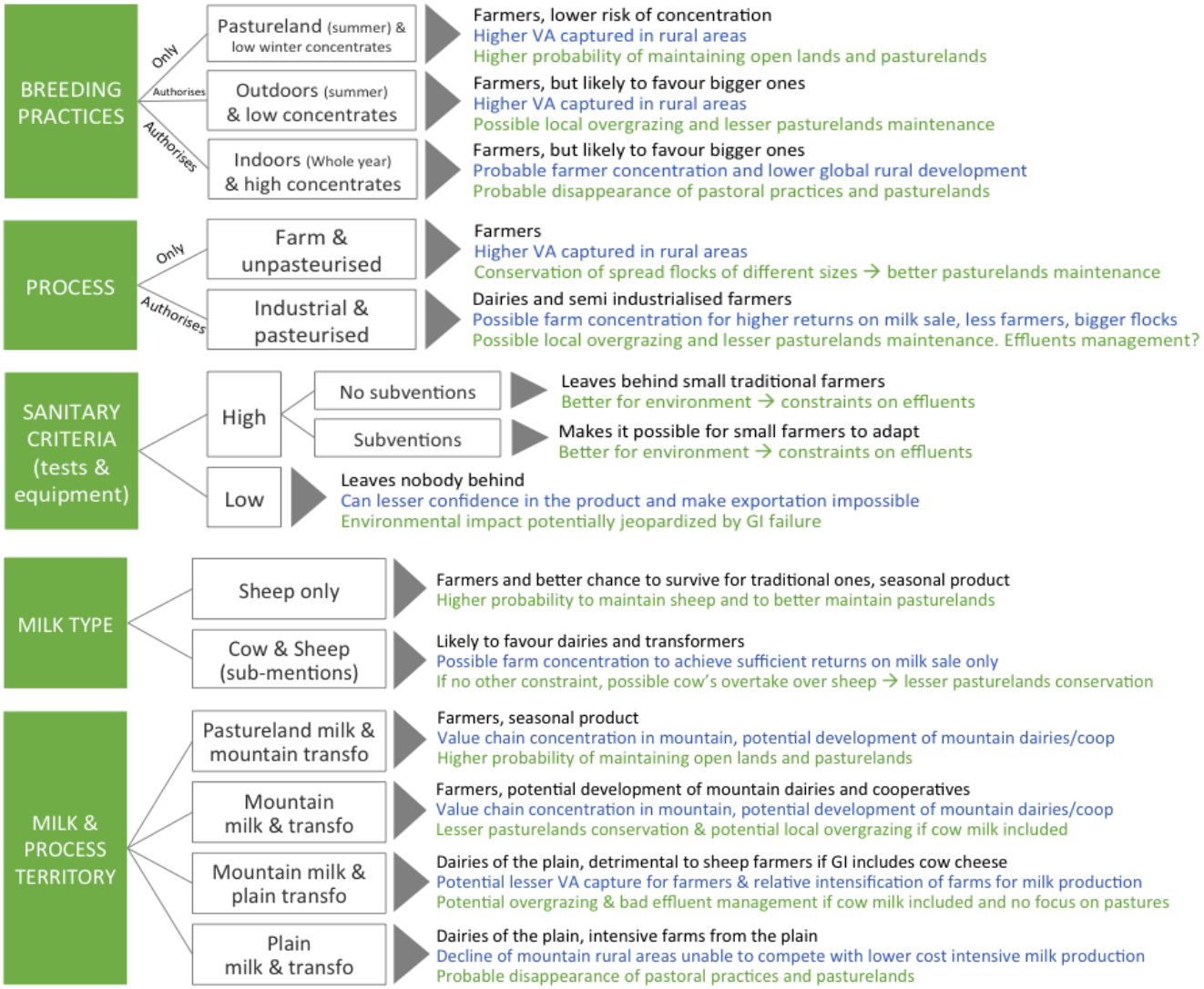


Figure 49: Decision tree on major open parameters for the creation of a GI on Sharri cheese
*VA means value added ** In these boxes, subventions are understood as accompanied with technical assistance.

7.3 What could be the contribution of a GI on Sharri cheese to environmental protection?

A certain degree of environmental protection can be reached through the GI, depending on the choices made. However, such an environmental friendly GI could be fragile and choices favourable to regional development might lead to leave besides some key environmental stakes.

Given the openness of the decisions still to be taken for the creation of a GI on Sharri cheese, this GI can, to some extent, be leveraged to protect agrobiodiversity in the Sharri Mountains. These opportunities are described in the following paragraphs.

7.3.1 Potential beneficial environmental impacts

Regarding the environment, the GI could mainly be leveraged for pasturelands conservation and to foster a better management of effluents. Yet the scale of these impacts depends on how many farmers, and especially traditional vulnerable ones.

Preservation of pasturelands through sheep and pastoral practices conservation

As we have seen in the previous parts of this report, open lands and pasturelands are particularly threatened in the Sharri Mountains due to the decline of sheep populations and of pastoral practices. Yet these habitats are particularly bio-diverse and rich of an endemic flora and fauna that is affiliated to them. The main impact on biodiversity and agro biodiversity conservation a GI on Sharri cheese could have is to aim at reviving these practices and maintaining or increasing the population of sheep in the mountains back to an equilibrium point (according to some testimonies, the mountains were possibly slightly overgrazed during the Yugoslavian period). Indeed, sheep have a higher impact on pasturelands conservation than cows since they tend to be brought higher in the mountains, for a longer period of time, while cows tend to stay closer to the villages, even if kept in open lands. Also they don't have exactly the same grazing practices; sheep have a higher tendency to eat regrowth.

Case 1: GI on Sharri Cheese, excluding cow milk

In order to ensure the survival of sheep flocks in the mountains, it is necessary for sheep Sharri cheese to secure a premium over cow Sharri cheese, which in turns requires a clear differentiation between the two products.

If the GI focus only on sheep milk Sharri cheese, cow cheese from the Sharri Mountains could benefit from another GI with a different name or from another label, like for example a Park label.

- Another solution evoked by the IPA was to use a PDO for sheep Sharri cheese and a PDI for cow Sharri cheese, yet uch a solution could confuse customers since the difference between PDOs and PGIs is not always well known. Furthermore, having only a PGI on cow Sharri cheese could lead to lesser constraints on production systems and thus diminish the leverage of the GI on this point in terms of rural development and environmental protection.

- A last possibility would be to make a unique GI for cow Sharri cheese and sheep Sharri cheese. Yet if such a solution is chosen, it would be necessary to be very careful when settling on the other parameters of the GI, in order to make sure cow Sharri cheese doesn't push sheep Sharri cheese out of the market. For example, in order to conserve an environmental impact, a GI authorising cow cheese to be sold as Sharri cheese should make sure, through its book of requirement, that cows are brought in the pasturelands as well and not simply kept outdoors around the villages and fed with concentrates This would aim at making sure Cow Sharri cheese and Sheep Sharri cheese have the relatively similar level of constraints and, in case this would still not enable sheep cheese to remain competitive enough against cow cheese, at ensuring at least the survival of pastoral practices.

Case 2: an inclusive GI on both cow and sheep milk.

If the GI were to cover both sheep and cow cheese, it would be necessary to be very careful regarding the definition of the territory for transformation of the milk into cheese. Indeed if the GI authorises both cow cheese and transformation by dairies in the plain, the risk is high for "industrial" cow cheese to push farming cheese (most often sheep cheese) out of the market. Dairies indeed have a higher focused on cow cheese due to its higher profitability, a better access to markets outside of the Sharri region and higher volumes.

This could lead to the growth of gathering points in the mountains for cow milk and to a progressive increase of the size of cow milk specialised flocks and to concentration of the farms to the detriment of other farmers, especially if no constraints specifically impose to bring cows in the pasturelands. If transformation in the valley is authorised for a GI on sheep milk only, such a risk would be lower. Indeed, we already met several producers of sheep milk selling their milk to a dairy without abandoning their pastoral practices. As long as the price is high enough and the premium secured on sheep Sharri cheese fairly redistributed to sheep milk producers, such practices could thus be preserved.

Effluents management

The GI could also have another positive impact on environmental protection by fostering a better management of animal effluents. Indeed, by requiring the improvement of winter stalls for sheep and for cows (if cow cheese is covered by the GI) the GI could lead to better hygienic conditions for the animals and their milk but also prevent effluents from leaking towards rivers or other sensitive places. Several stalls we visited were located close to a watercourse. This could therefore be an interesting impact of the GI, though of a lesser scale as open lands preservation. Yet, as it was underlined in the decision tree above, such requirements should be accompanied by subventions and technical assistance in order not to leave behind small or traditional farmers whose capital could be too low to implement them.

Scope of these potential impacts

Yet positive impact of GI on the environment depends on the leverage effect of the Code of Practices on livestock breeding practices on the area.

This is why focusing only on transformation in *Batchilo* could be counterproductive by including a too small number of farmers, though it might be an interesting sub-mention to create, similar to the French sub-mention for Beaufort "Chalet d'Alpage" (Figure 47). This concern about the scale of the environmental and rural development impact of the GI should also lead to a selection of a vast territory for Sharri cheese, regardless of identity criteria showcased in Figure 42 as long as the territory and especially the pasturelands are biologically similar and that processes for making the cheese don't differ significantly.

Moreover, when designing the GI and giving the impulse for the development of a collective action around it, a special attention should be granted to who should be involved in this collective action and, when drafting the book of requirement or selecting the territory, to who could be excluded by these rules. Also, even if some players are not *a priori* excluded from the collective action or by the GI rules, a lesser level of information, negotiation power, political weight, or adaptation capability could exclude them *de facto*.

7.3.2 Limits of a GI regarding environmental protection: What the GI alone cannot do?

Yet the practices we are looking forward to safeguard are fragile. They highly dependent from local natural ecosystems and a socio-economic environment they contribute to maintain.

This fragile equilibrium could thus be threatened by systemic evolution trends like rural exodus or by conjectural decisions leading to intensive development projects[3].

These threats have been synthetized in Figure 50.

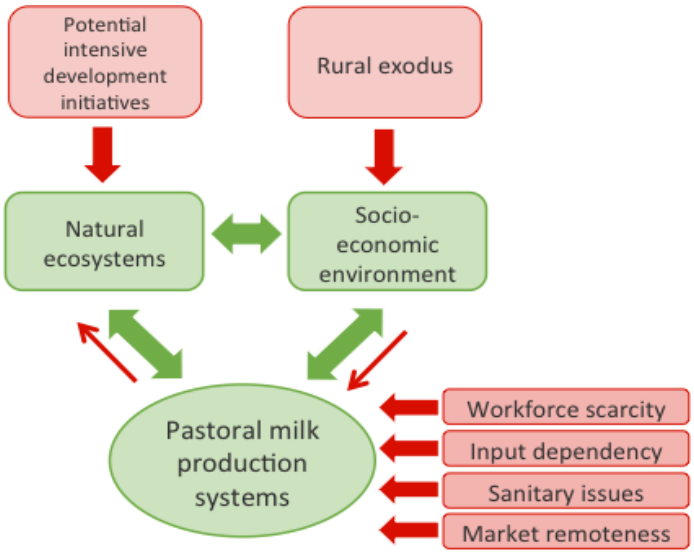


Figure 50: Major threats to traditional Sharri cheese production

Indeed, a GI on cheese only would likely be insufficient to achieve this alone. Other strategies aiming at environmental protection should be envisioned:

- Combination of labels

Other market tools, like other GIs, park brands or organic labels could thus be used to promote other products from the area like meat, and especially sheep and lamb meat to further incentivise sheep breeding, raspberries that are developing in Strpce municipality (KPI5), honey.

- Public policies for sustainable development

- Public support should also focus on supporting small rural traditional agriculture and traditional products value chains, through conditional subventions for example or support to investment that would also include small producers. Yet the Ministry of Agriculture seems to be willing to go towards an intensification of Kosovo's agricultural systems. (KPI3).

- A softer kind of tourism could also be developed with the promotion of a form of ecotourism that would show off the biodiversity of the area and the diversity of its habitats by promoting trekking, hiking, animal observation and photography or at least by circumventing small ski resorts to less valuable areas in terms of biodiversity. This would require dedicated public policies and support. A better control of the aforementioned activities (tourism, forestry, mining, quarrying) should be put in place Yet the government doesn't seem to be willing to go in this direction given the small weight of

[3] Here we are referring the project of rehabilitation and extension of the Bresovica ski resort, mining, intensive forestry, energy, that are not for now highly developed but could be in the future if it were to be the development trajectory chosen by the government and municipalities.

the Ministry of Environment and the low consideration of environmental criteria in its decisions. (KU1).

Conclusion for a GI on Sharri cheese

Sharri cheese is an emblematic product, known all over the country and traditionally produced in the Sharri Mountains. It has been selected as a pilot product for implementing a GI in Kosovo.

However, our field study showed that the name recovered different products (cow/sheep) and different processes (pasteurised or not). Protecting the name would therefore also mean that cheese producers define more precisely what can be called "Sharri cheese".

Up to now, the collective action toward the creation of a GI and a book of requirement is at its very beginning and is mainly stirred up by national institutions. We showed that depending on the choices made in the GI, this tool could favour more specifically some players.

At the moment individual farmers are not organised in a collective way and most of them don't have access to the formal national market. However, they still produce important quantities of cheese in a traditional way (non-pasteurised) and their pastoral practices are consistent with an environmental management of the mountain.

Milk processors are more organised and have access to shops and supermarkets to sell their cheese. They only produce cow cheese to answer a changing national demand for low-fat cheese. They buy the milk from the mountain and support in this way the rural development of Sharri Mountains.

Depending on the players invited to the GI negotiation table, depending on the vision defended by the institutions in charge of the GI implementation… this tool can be used to defend and promote different products and different actors. Between an industrialised Sharri cheese made out of mountain milk and an exclusive traditional sheep cheese produced at the farm, many intermediary combinations can emerge.

From an environmental point view, it seems that the book of requirements should insist on the importance of high altitude summer pasture practices, and support the maintenance of sheep and cows flocks in the mountains. Indeed, this characteristic seems to have an influence on the taste of the cheese (GI stake), and it is also a way to maintain high pastures open (environmental stake).

CHAPTER 4: GI PROJECT IN PLJEVLJA CHEESE (MONTENEGRO)

In order to study the implementation of a GI on Pljevlja cheese, we followed quite the same steps like for the Sharri cheese. However, we had less time and the city was much further from the capital Podgorica than it was in Kosovo. The diversity of players that we met was therefore influenced by these characteristics.

- The perception of the product by people in the street: what do people mean when they use the name Pljevlja cheese? What is this product for them?
- The pastoral practices at the origin of milk production
- The value chain of Pljevlja cheese and the distribution channels
- The production processes
- The legal framework for GI implementation
- A general discussion on GI implementation and on its socio-environmental implications.

It seems important to mention at the very beginning that the concept of GI was known of more people than in Kosovo, because a local association was already built in order to get a GI on Pljevlja cheese.

1 Differences of product perception

Pljevlja cheese is known and eaten all over Montenegro. To have information on how it is consumed and perceived, we realized a questionnaire and our translators conducted the street survey in Pljevlja city, at the very heart of the region of production. Thus the consumption patterns may largely differ from what could have been observed in other urban centres of the country. We collected 20 questionnaires.

1.1 A strong territorial link to the product

Most consumers know where the cheese they consume is produced (18/20) and they often know precisely the village in which it is produced (Figure 51).

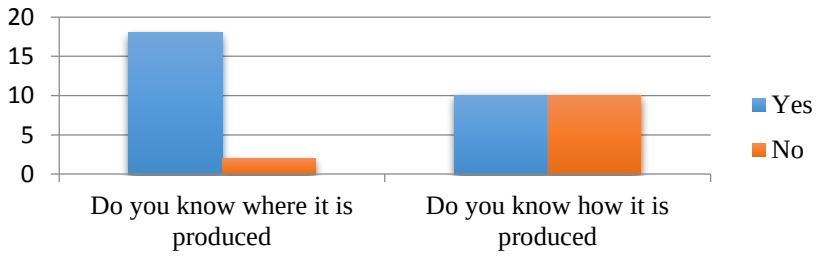


Figure 51: Where and how is Pljevlja cheese produced

This is due to the fact that all the consumers surveyed buy traditional cheese, either directly from friends or family (47%), from a farmer they know personally (21%) or from the green market (33%).

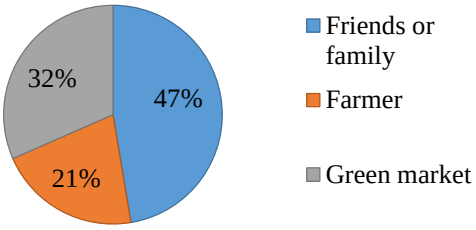


Figure 52: Place of purchase

1.2 A coherent product

On the contrary to the Sharr situation, there is a consensus on the milk used for the making of Pljevlja cheese and thus there is no debate on core characteristics of the product. Thus we remove in this survey the question on the type of milk preferred. It was not something we expected at first because the literature talked about both cow and sheep Pljevlja cheese (like in Kosovo). It seems that absolutely no one produces sheep Pljevlja cheese anymore.

The question of the "main characteristics" of the cheese was again an open one and we received four different answers, "taste" being largely the most important (13) (Figure 53).

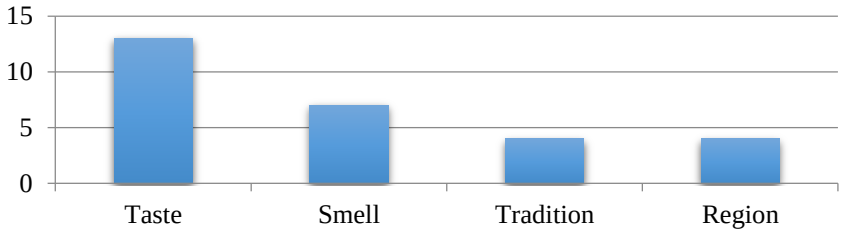


Figure 53: Main characteristics of Pljevlja cheese

1.3 A product consumed frequently and in various forms

A majority of consumers eat Pljevlja cheese on a daily basis (16/20), buying their cheese every week or month in quantities ranging from half a kilo to 10 kg. We witnessed that Pljevlja cheese was very important in the daily diet of the consumers, even more than Sharri cheese. The frequency of purchase showed less marking figures since there is no "bread" form of product and no bi-annual purchasing pattern (Figure 55).

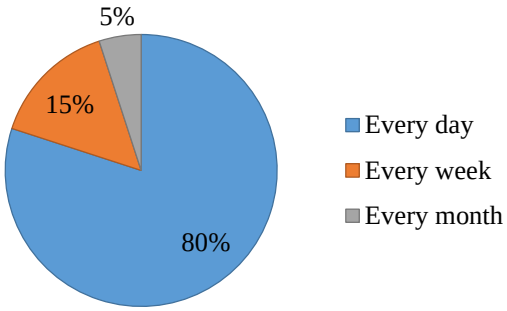


Figure 54: Consumption frequency of PC

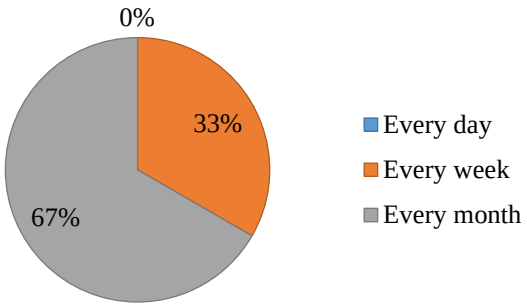


Figure 55: Purchasing frequency of PC

The cheese can be found in hard form (13/20 preferred this form) or soft form (Figure 56). That is the main distinction made by consumers. Some consumers like both.

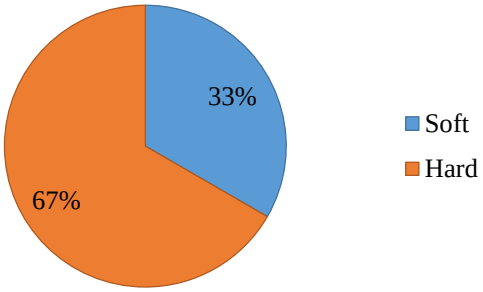


Figure 56: Form of Pljevlja cheese preferred

Pljevlja cheese is known and consumed by everyone we met in Pljevlja city. There is no debate regarding the definition of the cheese and the milk used. The packaging also seemed much more homogenous than for the Sharri cheese. The main distinction for consumers is made between soft and hard Pljevlja cheese, both being most of the time consumed on a daily basis.

At first viw, the definition of the product "Pljevlja cheese" seems quite simple. However, we didn't have time to complete the study with some analysis of the perceptions in the south of the country, and in particular in Podgorica, to see if people perceived the product in the same way.

Just as we did for Sharri cheese, we are now going to study all the different key elements needed for shaping a GI on Pljevlja cheese.

2 Pljevlja territory: what is at stake for a GI?

Montenegro is a small country of 13 812 km². However, it has a remarkable diversity of landscapes and ecological habitats, ranging from the Adriatic seacoast with a warm Mediterranean climate all the way up to Bobotov Kuk, to mountains standing more than 2 500 meters above sea level in the Durmitor National Park.

2.1 The landscape is mainly composed of agricultural and forests lands of high biodiversity

All Pljevlja territory is above 700 meters of altitude. Climate conditions are characterized by cool short summers and severe winters with abundant snow. It is limited on the North and on the West by Serbian and Bosnian borders, and on the south by the Tara Canyon.

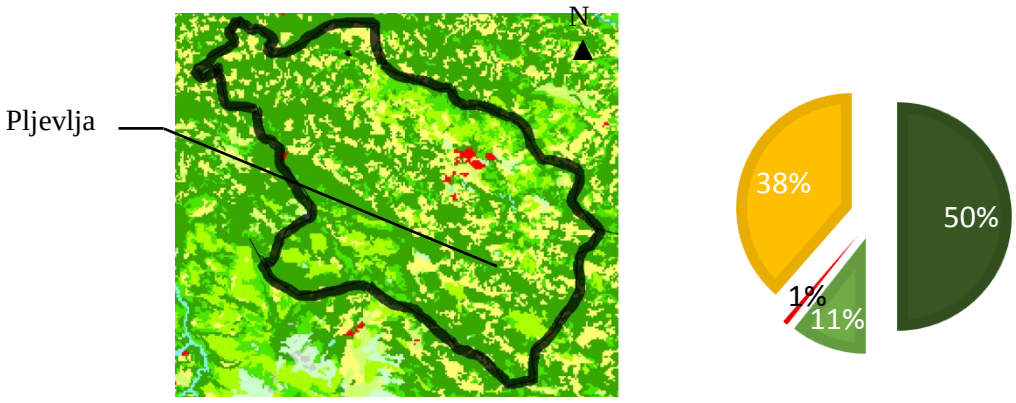


Figure 57 : Land use occupation in Pljevlja municipality in the north of the Montenegro.
In black green are represented the forests; in light green, the pasture; in yellow, the agricultural lands; in red the urban areas (Source: Corine Land Cover, 2012).

The territory of Pljevlja municipality is characterized by a mosaic of forests (50 %) and agricultural lands (38 %). Urban areas represent 1 % the territory and pastures represent 11 % (Figure 57). Most of the time, each farm has fields around the house, both for the herd and for agriculture.

The forests are in majority public, only 3 % of private forests on the territory and they represents 70 000 ha. 75 % of the forest area is composed by conifers, mainly pine and spruce.

6000 ha of the territory in the South belong to the Durmitor National Park. The Durmitor National Park and the Tara river basin are both recognised as important sites by the UNESCO (World heritage site and Biosphere Reserve). In this mountain ecosystem, characteristic flora exists: the Alpine flower Edelweiss (*Leontopodium alpinum*), and the endemic Montenegrin bluebell (*Edraianthus montenegrius*). There are also many relict glacial species.

Montenegro has 65 species of mammals, including large carnivores like bears (*Ursus arctos*), wolves (*Canis lupus*), red fox (*Vulpes vulpes*) and chamois (*Rupicapra rupicapra*) although there is a lack of data on their numbers and conservation status. The country has not yet published any Red Data Books for species with conservation status within the country and basic information is sorely lacking. Montenegro is also known to be a centre for domestic animal diversity, including a number of now rare breeds of cows, sheep, goats and donkeys that originated in this region but are not maintained in adequate numbers to ensure their survival.

Pljevlja is therefore a territory with preserved ecosystems and a high biodiversity.

2.2 A territory in mutation

Pljevlja region is one of the most productive regions of Montenegro for energy, wood industry and agriculture.

It has a big thermal power plant that produces the majority of the country's energy, but is also considered as the main source of atmospheric pollution of Montenegro. The biggest coalmine is also located in this region. The exploitation of coal in Pljevlja basins is estimated at approximately 170 million tons/year. It is also a region with an important wood production.

However, this small territory experiences a strong rural exodus, which has social and environmental consequences.

Indeed, Pljevlja's rural population has been decreasing continuously for many years (Figure 58). Population density in Pljevlja is 23 inhabitants/m² and it is lower when compared to other municipalities. Depopulation appeared as the main limiting factors for rural development in Montenegro, and thus for the Municipality of Pljevlja. Industrialization has caused migration from rural areas to the administrative and economic centres.

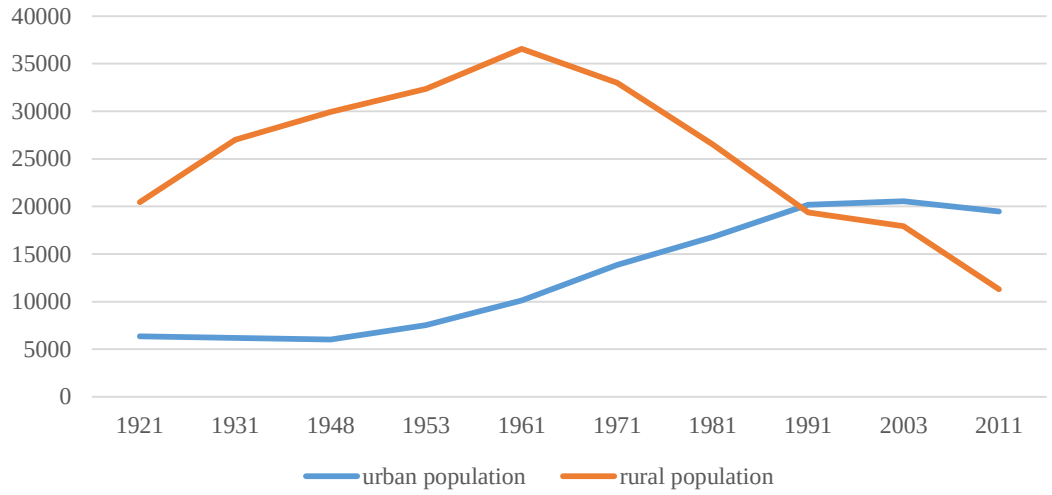


Figure 58 : Evolution of the urban and the rural population from 1921-2011 in Pljevlja municipality (Source: modified from Agricultural census, 2015)

According to the Agricultural Census of 2010, number of farms in Pljevlja municipality decreased in absolute terms to 1 647 households or about 30 % compared to the number of farms in 1960 (5648 to 4001 households). Among the farms, households of 1-2 ha size, and with 1-2 members are the most numerous. Reduced number of farms is a result of mass transfer of rural people in the industry and non-agricultural activities. That was a basic characteristic of post-war rural mobility (Kascelan et al, 2015).

A farmer described the rural exodus in these words : *« In the village […]: there were 500 people voting 20 years ago, today only 200 »* (MPT13).

Table 10 : Number of inhabitants by villages in Pljevlja municipality in 2015

NUMBER OF VILLAGE	NUMBER OF INHABITANTS
11 village	no inhabitants
13 village	less than 10 inhabitants
57 village	between 10 and 50 inhabitants
40 village	between 50 and 100 inhabitants
35 village	between 100 and 350 inhabitants
2 village	over 500 inhabitants (Židovići and Komini)

**Source: General socio-economic statistics, Secretariat for Economy, Municipality of Pljevlja 2015*

This rural exodus led to a strong decline of livestock in recent decades. We tend toward an under-grazing situation. As we saw in Sharri Mountains in Kosovo, this phenomenon leads to a closing landscape dynamic with trees growing back in pasture lands, which could reduce the ecological value of the alpine grasslands.

One of the national objectives is therefore to give a new dynamism to this rural region. GI implementation is part of this strategy, as it is expected to give support and visibility to local agriculture and local specialties.

Pljevlja municipality's economy is mainly organized around energy, forestry and agriculture. However, the rural exodus and change of practices implies some strong modifications of the agricultural pattern o the region. The landscape changes as well with the growth of the forest on alpine pasturelands with high biodiversity (NB: however, forest land might also be a gain of other forms of biodiversity).

Just like in Kosovo, the main question is therefore to understand if a GI can have an impact on these social and ecological dynamics. To put it in other words, would it be a good idea to support Pljevlja cheese in order to foster traditional agricultural practices? Do these practices really have a positive ecological impact today?

To answer these questions, we need to analyse in detail the pastoral practices that allow the production of Pljevlja cheese.

3 Pastoral practices: open landscapes designed by the association of two production systems

During our short fieldwork in Pljevlja, we interviewed 16 farmers. Most of them raised cows. One of them raised sheep only, and four of them combined both activities (Figure 59).

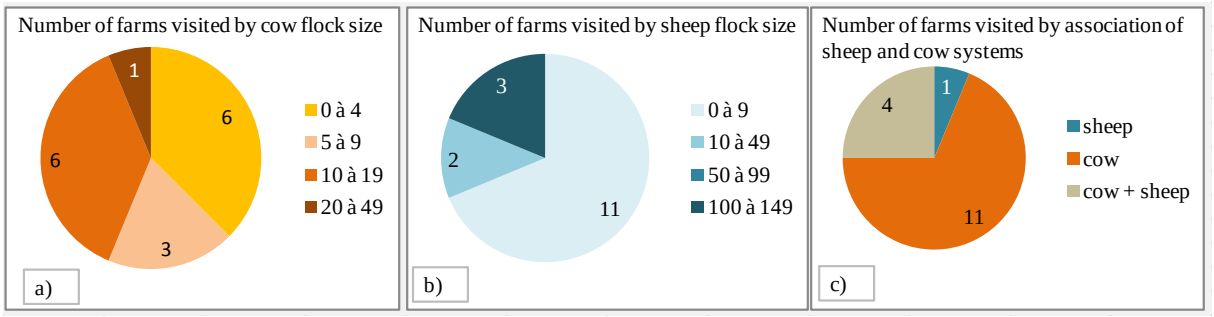


Figure 59 - Description of the farms we visited
a) number of farms visited by cow flock size **b)** number of farms visited by sheep flock size **c)** number of farms visited by association of sheep and cow systems

We are going to analyse the practices associated to both sheep and cow systems.

3.1 Two farming systems: sheep for meat, cows for milk and cheese.

The sheep system is extensive and focused on meat production (Table 11). The two farmers raising sheep mentioned using larger areas than those raising only cows. One of them said he had access to 1.000 ha of pastures with a 110 sheep flock (MTP9 - Traditional producer). In Pljevlja city, a farmer said he usually bought young sheep in the whole municipality to fatten them during 20 days before selling. He had a project for building an industrial meat-smoking unit, with the help of Pljevlja municipality.

The cow system is semi-intensive, generally located in a narrower area around the farm, and focused on milk production (Table 11). One part of the milk is transformed into cheese, the other part is sold to industrial transformers in Pljevlja. The proportion of produced milk transformed into cheese is quite variable from one situation to another.

Table 11 - Comparison of two production systems, sheep meat and cow milk

	Sheep	**Cow**
Products	Meat	Milk, cheese, meat
Intensiveness	Extensive, semi nomadic	Semi-intensive, around household
High-mountain pastures during summertime	Yes	Sometimes
Land ownership	Common lands	Private lands and common lands
Workforce	Need shepherd	Family Electrical fences

Eight farmers declared they owned at least a part of the land they used and 3 of them said they did not rent land at all. The renting price is often symbolic for mountain pastures between 1 and 10 euros/ha/year. It can be higher near Pljevlja, for example for pasture or arable land on alluvial deposit soils (we were told about 50 €/ha/year). A farmer mentioned that a neighbour gave him free access to his land for hay cutting (MTP9, MMM1).

3.2 These farming systems have designed local landscapes

Pastures and meadows can be divided in two groups: the extensive areas, usually common lands, and the semi-extensive areas, sometimes private lands, around the farms. In the Pljevlja Municipality, we can easily see these two forms of land use. Households are generally situated in the centre of a semi-extensive pasture or a meadow area. Sometimes orchards and annual cultures are settled around the household (Figure 60).

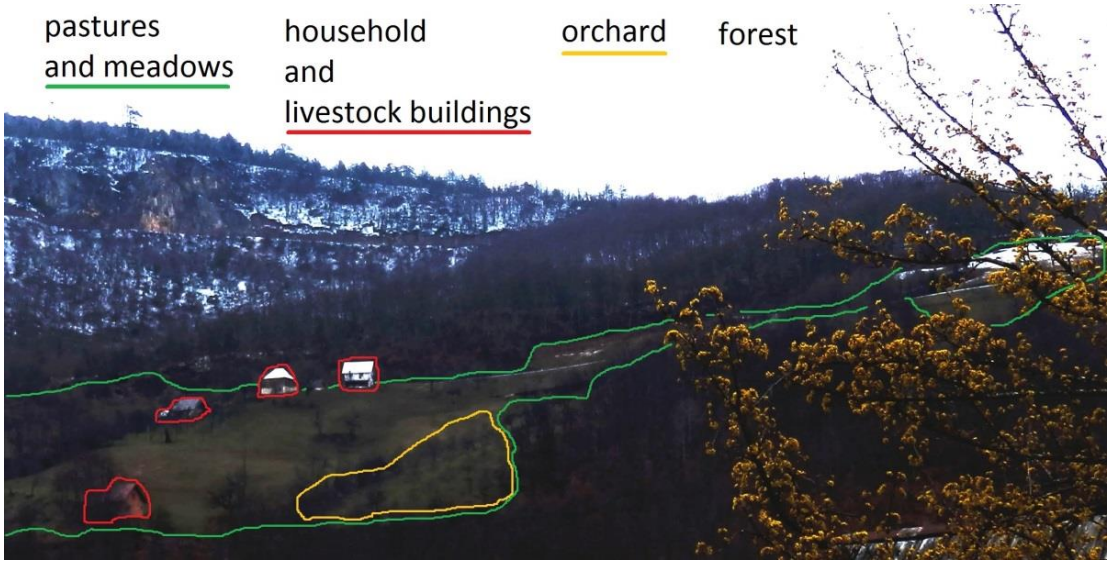


Figure 60 - Landscape description - next to the Tara Canyon, South Pljevlja

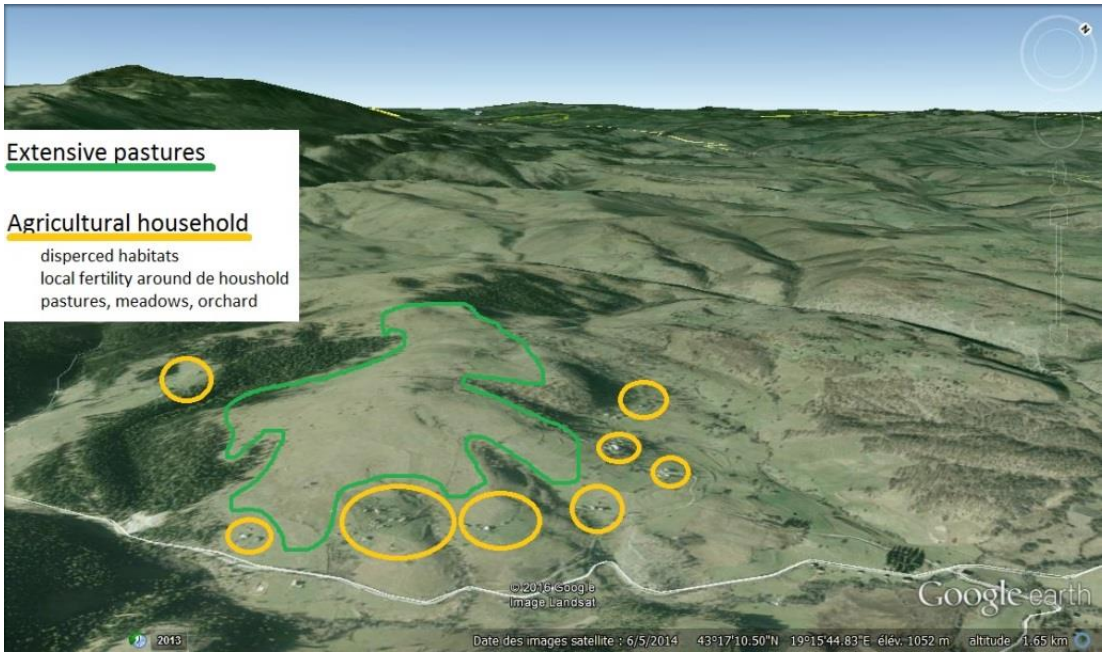


Figure 61 - Lanscape description – South-West Pljevlja, Krusevo
(Source: Google earth)

The extensive pastures are situated on upper lands, sometimes not so far from the farm (Figure 61).

3.3 The sheep meat system is sharply declining, while the cow milk system is recombining

In 2010, in the Pljevlja Municipality, 69% of the family agricultural holdings were focused on livestock grazing whereas the national average was 48% (National agricultural census, 2010). There were 10.606 bovine heads, including 7.054 dairy cows, from 2.754 agricultural holdings (2,6 cows/agricultural holding), and 31.596 ovine heads, including 15 114 ewes for milk, from 840 holdings (18 ewes/agricultural holding) (National agricultural census, 2010).

In 2006, pasturelands represented approximately 11% of the land use in the Pljevlja municipality (Corine Land Cover 2006), corresponding to 14.000 ha approximately. Following the hypothesis that one milking bovine head corresponds to one Livestock Unit (LU) and one milking ovine head corresponds to 0,1 LU, the livestock censed in 2010 represented approximately 0,6 LU per ha of pastoral land. Even if we didn't have access to historical evolution analysis of livestock in the region, all of the 16 farmers we interviewed in the Pljevlja Municipality said this situation corresponds to a dramatic decline of agricultural land use.

One farmer told us about the history of the region, in particular about the decline of the sheep meat system.

> *« Before you could see sheep and cows everywhere in the mountain […]. Before animals were brought in highland pastures. From the 6th of May and then stayed for 6 months in the pasturelands. Minimum 800m to maximum 2300m of altitude. For meat you let the animals alone there. For milk somebody had to stay with them and make the cheese. Today there are almost no sheep anymore. I used to work in the biggest slaughtering house in Pljevlja [where] they used to kill 1000 lambs per day to export to Italy, Greece […]. There was a big animal market in Pljevlja; now it has become a hotel and there is no more animal market. Pljevlja was very well known for meat production […]. There is still one guy that comes each year with 700 sheep and stays 6 months in the pasturelands at an altitude of 700m. But mostly people don't go to the mountain pasture anymore. It is only worth it if you have more than 200 sheep, else there is a lot of land available because of rural exodus » (MTP1.1, Traditional producer).*

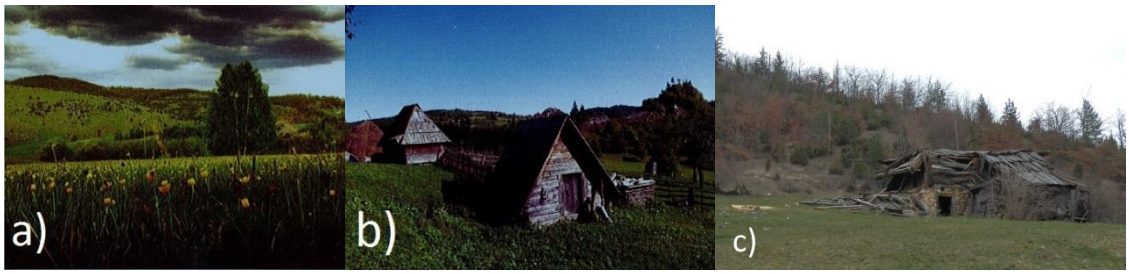


Figure 62 – **a)** high-land pastures (photo credit: Pljevlja municipality) **b)** high-land pastures traditional household (photo credit : Pljevlja municipality) **c)** rural exodus

In Tresnica, a farmer said, « *Nowadays everyone gave up on sheep except one guy* » (MTP6, Traditional Producer).

We were told several explanations about these changes of practices.

First, farmers said that too few people are attracted by the shepherd position.

> *« The first reason is that people that had sheep didn't have shepherds. Because people don't want to make this job. » (MPA1).*

Second, in the southern part of the municipality, close to the Durmitor National Park, wolves' attacks were seen as another reason.

« Wolves are a non-stop threat to sheep, there is always someone to keep an eye on the sheep. The hunting season is from 1st of October till 1st of February (forbidden all year in National park). Number of wolves dropped because of intense hunting » (MTP6, Traditional producer).

Third, farmers talked about the higher profitability of the cow milk system: *« People are more interested in growing cows for milk and meat»* (MTP1.1, Traditional producer).

In addition, public support for livestock raising is linked to volume. The subsidies per head and minimum flock sizes are 10 times higher for bovine than for ovine, as if it was linked to the measurement of livestock unit (1LU = 1 milking cow = 10 milking ewes).

Table 12 - Comparative analysis of subsidies for livestock in Montenegro

	Subsidy per year	**Minimum flock size**
Cow	70 € / head / year	> 4
Ewe	7 € / head / year	> 40

It seems hat before, households were keeping both sheep and cows, as cheese was produced equally out of sheep milk, cow milk or mixed milks. The production of cheese out of sheep milk stopped in the 1990's.

« Now they only produce with cow milk because it is much easier and productive. […] there is no difference between cow cheese and sheep cheese » (MTP5, Traditional Producer).

But the cow milk system is also declining because of rural exodus.

« Before the village was full of people, with 2-3 cows/house » (MTP14 – Traditional producer). « Before every house had cows here. Now only 1 out of 15 houses has cows » (MTP1 – Traditional producer).

First, the number of cows has decreased a lot. Second, the number of households raising cows has decreased also. Because of the rural exodus, a lot of land is available around villages. Thus, farmers do not necessarily bring their cows to the highland pastures.

« There is a lot of food available close to the villages since there are fewer animals » (MTP1.1, – Traditional producer).

« It is also easier to milk the cows [at the farm than in pasturelands] because equipment is there and also dairies don't go to the pasturelands but only to the villages » (MTP1.1 – Traditional producer).

As a consequence, forest is spreading on mountain pasturelands.

« Forest area is larger than before. 40 years ago, people cut more grass: pastures and meadows represented 90% of the municipality territory. Today, it is 45%. Considering wild fauna, populations have not increased. Many people are hunting illegally, just for sport. Some light fires in the forest to foster development of mushrooms that can be sold quite expensive » (MTP13 – Traditional producer).

The Forest administration is less categorical about the numbers, but they confirm the tendency toward open land closure.

« In 10 years there was an increase of 4% of forest. But farmers don't care about the closure of the open fields because there are other pastures to put the animals due to the rural exodus » (MPI2, National forest administration).

3.4 The transformations of the cow milk system

3.4.1 Practices are getting more intensive

Considering feeding practices we could distinguish three categories of farmers: those who keep cows in the cowshed all year long, those who try to keep cows outside all the time, and those who keep cows inside during wintertime and bring them on pasture lands from late spring until middle autumn, from 5 to 7 months a year (Table 13).

Table 13 : Definition of three level of farming system intensity

intensity_1	animal are outside all year long, excepted when raining or snowing
intensity_2	animals are outside during the summertime, around the farm
intensity_3	animals are inside the cowshed all year long

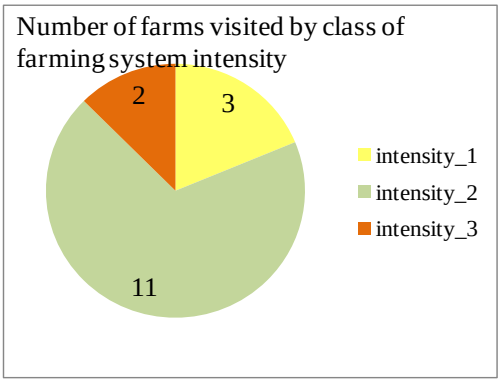


Figure 63 - Number of farms visited by class of farming system intensity

Among the 15 farmers who raised cows, 2 farmers never used any concentrate food (Figure 63). One of them said that *« I think 80% of people now feed their cows with corn and concentrates, which makes a bad cheese »* (MTP6, Traditional producer). Among the other farming systems, the food for cow was usually 50kg of hay or clover, and from 2 to 7 kg of concentrate per day.

This trend could be linked to the switch from farming systems focused on alimentary self-sufficiency to more productivity-oriented farming system for commercial purpose.

> *« We have given concentrates since we started to raise animals for production, and not only for family self-consumption, in March 2012 » (MTP13, Traditional producer).*

For one farmer innovation in farming system toward progress in productivity goes with an increase in cheese quality.

> *« The way of making the cheese is the same as it was 100 years ago, traditional. More cheese produced today and of better quality because cows are fed with vitamins, which make them make better milk. Cows and sheep produce more than before because they are better fed. They are fed with vitamins and there is mechanisation to cut the hay » (MTP1.1).*

However, most people make a strong link between the milk quality and the pastoral practices.

3.4.2 Farmers are aware of the relation between milk quality and pastoral practices.

Several producers told us about the link between the quality of Pljevlja cheese or other local traditional dairy products and pastoral practices.

> *« The specificity of Pljevlja cheese is the grasslands where the cows are, their natural quality. It is good above the altitude of 1000 meters and more » (MPA1- Pljevlja Municipality).*

> *« Pljevlja cheese is special […] because of the quality of the grass » (MTP4, Traditional producer).*

« Here it [Kajmak] is better because cows are fed in the high-mountain grasslands » (MIP2, industrial producer).

The best pastures to have good quality products are located in altitude (above 1000 m). Some specific regions seem to be considered even better because of some specific qualities of the soil, like the area near the Serbian border.

3.5 Design of future local farming systems toward the fulfilment of sanitary criteria and limitation of environmental impacts of intensive production systems

The principal constraint, which determines the evolution of farming system, is the reaction of farmers to the demand for higher fulfilment of sanitary criteria.

The players who take this issue into account in their activity determine three categories of farmers (Figure 64).

Type 1 – Those who have the capability of making investment for their farm installation, and who sell their cheese directly to supermarkets, toward an individual initiative. Two farmers we met are in this category. They are making investments for two different purposes:

- First to practice mechanized milking, produce the cheese in a laboratory, design a special place to make the cheese, with ceramic surfaces, and follow a protocol of cheese tests, once a month.
- Second to invest in modern system of cattle management, building a cowshed, with waste management system: cleaning system, linked to one sceptic tank for liquid, and one sceptic tank for manure.

These producers are often members of the association of producers who are asking for the creation of a GI.

Type 2 – Those who do not have the means to invest in new installations and sell their cheese to middle men. These intermediaries ask them for proof of regular sanitary control of the cheese.

Type 3 – Those who do not have the capacity to send samples of cheese to laboratory, and who do not sell to middlemen. They sell directly at the green market.

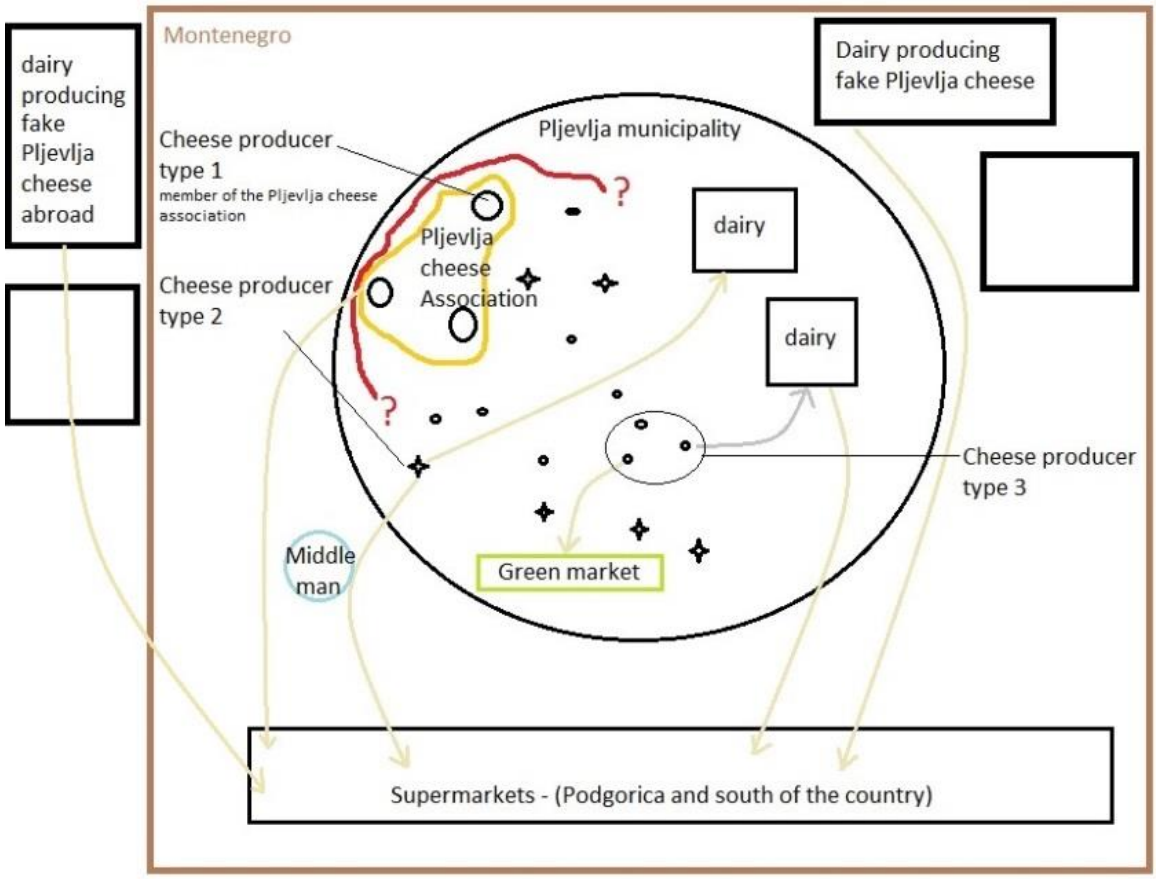


Figure 64 - A cheese producer typology

The local public support is also orientated for the fulfilment of sanitary standards toward local small farming systems: *« 300 000€ for the farmers in Pljevlja for their activities »* (MPI1, Public institution).

3.6 Many other drivers of production systems transformation

The evolution of the proportion of milk transformed directly at the farm, and the proportion of the milk sold to industries is function of:

- The evolution of the cheese price. For many farmers, a good price for the Pljevlja cheese would be 5 €/kg at the farm, hence an increase of 43%, compared to the average price of 3,5 €/kg.
- The evolution of the milk demand from the dairy industry (function of marker protection, interior demand)
- The means of milk collection developed by these players, and the frequency of milk collecting*: « If the milk processors came to his house he would sell his milk as well at a price of 0.30€/L »* (MTP11-traditional producer).

Rural development, small-scale farming and road investments *« But the road to his village is bad»* (MTP11- traditional producer).

Knowing the historical design of local landscapes toward two systems of production, sheep meat purpose and cow milk purpose, it seems GI projects in the region have to be designed toward both products, meat and dairy products. Pljevlja cheese is nowadays nearly exclusively a cow cheese. This

has major implications in terms of building a bridge between the environment, pastoral practice and cheese - the final product. There are indeed some farmers that keep their cows in cowsheds all year long, which is not as common a practice for sheep farmers. Of course, there are also Pljevlja farmers who decide to have their cows go outside most of the time or at least during summer. A geographical indication could have an influence on this aspect.

In Pljevlja municipality, rural exodus and changes of habits induce a diminution of pastoral practices. Today, there are mainly two farming systems. The sheep system aims at producing meat only, and as it is economically harder than cow raising, there are less and less farmers raising sheep. The cow system aims at producing meat, milk and cheese. Today Pljevlja cheese is only made out of cow milk. The ability to meet sanitary criteria and the connexion to the market (intermediaries selling cheese in the south) are the most important elements for valorising cheese. At the moment dairy products are difficult to sell because prices are low. A GI could have an impact on these aspects. From an environmental point of view however, cow raising is of little interest for maintaining pastureland opened (they stay into the stable or in the fields near the farms) and the GI won't have an impact on these aspects.

4 Value chains and distribution channels

The value chain for Pljevlja cheese follows the same three main stages as for Sharri cheese: a) Milk production, b) Transformation into cheese, c) Distribution.

It is also possible to identify a "farmer track" and a "dairy track" that lead to different products that all can be named "Pljevlja cheese". The farmer track can be subdivided into a local track and a national track.

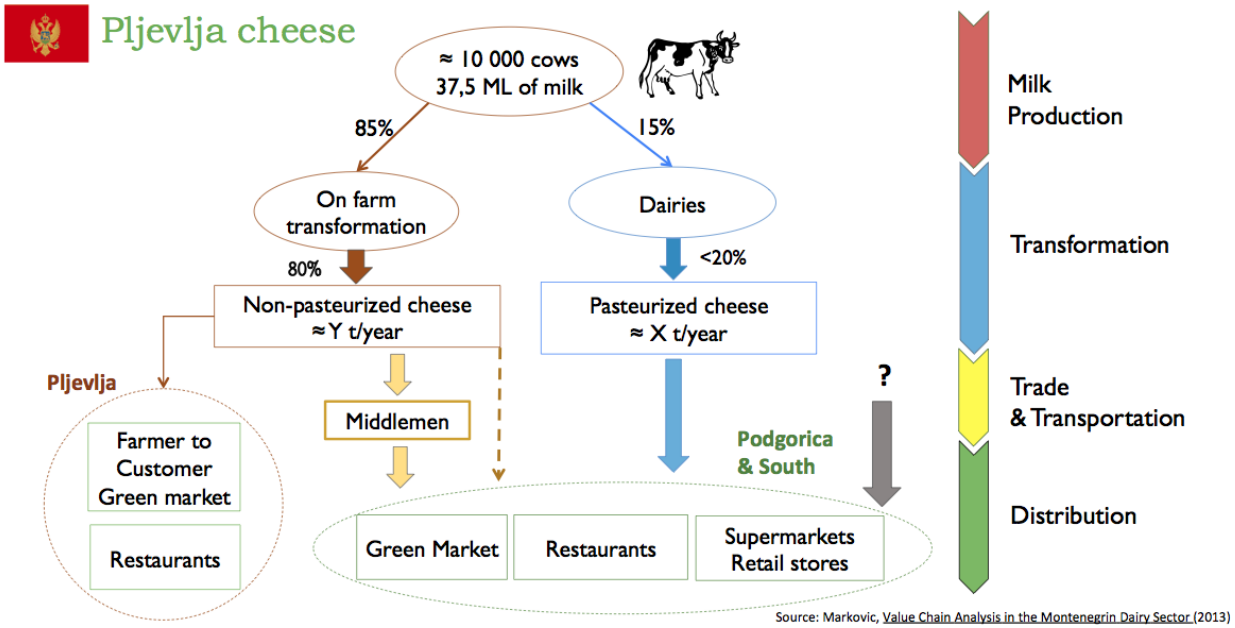


Figure 65 : The Pljevlja cheese value chain

4.1 The farmer track: difficulties to sell cheese locally and importance of intermediate players

In Pljevlja municipality, the commercial demand for Pljevlja cheese is not very high. The main reason is that more or less everybody has somebody in the family who produces Pljevlja cheese. As a consequence, supermarkets and retail stores in Pljevlja don't sell Pljevlja cheese at all. In order to buy some, one can still go to the green market and purchase either light or hard Pljevlja cheese at around 3 €/kg. In a word, the municipality of Pljevlja could be described as a "saturated market", making it hard for farmers to sell all their cheese.

This highlights the importance of middlemen - or intermediaries – who buy Pljevlja cheese from farmers in the Pljevlja region before selling it at a higher price in the South of Montenegro, especially in Podgorica, where this cheese is popular. Middlemen take care of the "Trade and Transportation" stage of the value chain and play a major role in helping the farmers to sell all their cheese. The middleman is sometimes a member of the farmer's family, who sells the familial Pljevlja cheese in Podgorica. Some of them are also professional middlemen.

We also met two farmers with more equipment, who had a direct access to shops and supermarkets in the south. They insisted on their reliability concerning the high quality of their products.

We didn’t have time to study the chain in detail, but the important element for selling the traditional non-pasteurized cheese in formal southern Montenegro shops seemed to be the ability to make sufficient sanitary controls and to be officially registered.

4.2 The dairy track

Other farmers prefer selling their milk directly to dairies. In Pljevlja, we saw that there was an absence of collecting points located in the mountains to gather and buy milk from farmers (like it was the case in Kosovo). The reason is that farmers perform the microbiological, physical and chemical tests necessary to commercialize their milk themselves. Thus dairies can send a truck to farmers and directly buy milk at the farm.

We can try and make some calculations to estimate the weight of Pljevlja cheese market.

There are around 10 000 bovine in the Pljevlja region (Census of Agriculture, 2010). Their production is estimated at 15 L/day, 250 days a year. Hence 37,5 millions litres produced in Pljevlja in a year. According to Markovic (2013), dairies of Montenegro buy 15 % of that production, and less that 20% of what's bought by dairies is used for Pljevlja cheese. We make the hypothesis that these numbers apply to the region of Pljevlja. An average of 8 litres of milk are required by dairies to produce 1 kg of Pljevlja cheese (MIP 2 – Industrial producer). Hence we can estimate a minimum of 187,5 tons of Pljevlja cheese produced by dairies each year. If the price at which it is sold is of around 3,50 €, it represents a market of 656 250 € for dairies.

Dairies have developed their own integrated channels from cheese production to distribution so they don't need intermediaries (Markovic, 2013).

One of the main problems that is told about by many people (farmers and dairies) is counterfeit Pljevlja cheese produced in other parts of the region or even in other countries. It creates a strong concurrence on the market and a brand or a GI are perceived as a possible solution to this problem.

> “*There are other farmers outside of Pljevlja who make fake Pljevlja cheese.*” – MPI1

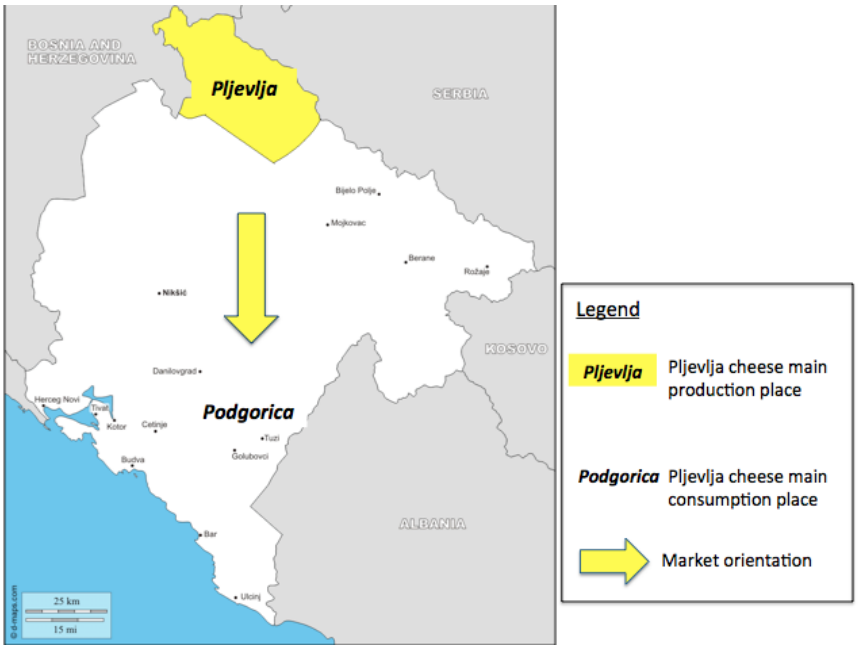


Figure 66 : North/South duality of the Pljevlja cheese market

On-farm transformation implies non-pasteurized Pljevlja cheese while dairies produce pasteurized Pljevlja cheese. Therefore observations confirm the existence of a "farm track" and a "dairy track" for Pljevlja cheese. Whether it is made at the farm or by dairies, there is also a distinction between different kinds of Pljevlja cheese according to the duration of ripening: light Pljevlja cheese can be made with a one-week ripening stage whereas the process to make hard Pljevlja cheese means a one to two-months ripening stage.

We could identify several commercial tracks for Pljevlja cheese.

The traditional unpasteurised cheese is difficult to sell in Pljevlja city where the market is saturated. To access other markets in the South of the country, most farmers need intermediaries (family or professionals). For accessing the formal market, farmers need to be registered and to perform sanitary controls on their cheese.

Diaries collect the milk directly at the farms. There is only one industrial producer of cheese in Pljevlja but other dairies buy milk in the region. They produce pasteurised cheese and sell it in shops and supermarkets in the south of the country. Unfortunately, we could not study the whole chain precisely from Pljevlja and a complementary study in Podgorica and other touristic place would have been useful, as well as an analysis of counterfeit cheeses.

We are now going to get more into details in the distinction between farmer's cheese and dairies' cheese.

5 Process: the importance of sanitary aspects

We identified three kind of players with slightly different products: traditional farmers, modern farmers and dairies. Each of them have processes and production conditions that are different.

Dairies and cooperatives have all the equipment required like special protection clothes, stainless steel tanks and tools, tiled floor and walls and performed several tests on the milk when collecting it from farmers and before using it (process part). Modernised farmers can have only some to all of these items depending on their degree of modernisation and their investment capacity (Figure 67), the first step is to have a tiled table where to make the cheese, as it can be seen on Figure 67. Traditional farmers either made their cheese in their kitchen or in a dedicated room but most of the time, had few or none of these items. Regarding sanitary conditions and equipment related to the animal, modernised farmers could have some cleaning system for stables while traditional farmers had none.

Figure 67: Modernising farmer
(upper left: dedicated cheese room, lower left: new laboratory under construction, upper right: former stable without effluent management, lower right: new stable with more space and effluent management systems with separated tanks for manure and urine) (MPT5)

Figure 68: Traditional farmer's room for cheese making (MPT9)

All farmers commercialize their cheese in containers of about 35kg. They don't have special packaging, but it's very practical because "*you have special place for cheese and you can choose the exact quantity you want."* – MTP12 – Traditional Producer.

Most farmers test their milk around once a month since milk testing is cheap. *"Test of the milk every 3 months, 3€ per test"* (MPT6) Animals are also usually examined by local veterinaries. While registered farmers make samples of their cheese and send them to a laboratory for analysis, unregistered farmers don't. Test frequency varies depending on farmers.

It explains why unregistered farmers can have a bad image from public opinion

"Milk is unclean for consumption because of the hands of farmers." – MTP13 - Traditional producer.

Modernised farmers, who manage to deal directly with supermarkets of the South, test their cheese more often. *"He needs to make tests on the cheese once a month, which costs 120€ per test sent to the University"* (MPT5) Animals are also examined by local veterinaries. When farmers sell to traders, it seems that it can the trader who makes the tests on the cheese (MMM1).

5.1 Farmers process: a process considered as traditional

To make Pljevlja cheese, farmers use about 7,5 L on average to make 1kg of cheese. This figure can vary according to the season: they need 7-8L in winter (milk is fatter because cows eat hey) and about 10 L in summer (milk is less fat because animals eat grass so with lot of water).

> *"The process is very old, it's the traditional way, it needs more time and the milk is not pasteurized." (MPI1)*

We present here the general frame to make the cheese realized by most of the farmers, but there are always some small differences from one farm to another. It is important to keep this flexibility in mind when crafting a GI.

> *"All farmers have their own way to process the cheese." – MPI1*

Figure 69: Steps of traditionnal cheese process

From left to right: (i) Transformed cheese after waiting action of rennet (Source: Jean-Baptiste Rostaing)
(ii) Separation of whey from cheese with "cjedilo". (Source: Mirecki & Konatar 2012)
(iii) Drainage step with wooden planks (Source: Ibid)
(iv) Maturation of cheese in wood container (Source: Ibid)

5.1.1 Renneting

Some farmers filter the milk before adding rennet.

Farmers firstly add rennet directly after milking so that the milk is still warm. In winter they can slightly heat the milk. They put 1 or 2 spoons for 7-10L of milk. Origins of rennet are diverse (Serbia, Germany). Then it waits between 1 and 4h in wood, plastic or metal containers.

5.1.2 Whey-off

They separate the whey from the cheese thanks to a piece of material that is used as a filter (called "*cjedilo*", Figure 69, ii).

5.1.3 Drainage/maturing

Then they press the cheese. It can be done with different tools: with a circular wooden or plastic plank, or with a stone on the plank, or with successive layers of cheese and planks (Figure 69, iii). It stays between 2 and 10h.

5.1.4 Brining/maturing

For the last step, they cut the cheese in small slices and put salt on each slice before putting in wooden or plastic container (Figure 69, iv). They cover with whey. They change regularly the whey and clean the cheese with water: in summer, they change whey every day or every 2 days, in winter some of them keep it for a week.

At the end, farmers can get two types of cheese: soft (env 2 days) or hard (more than seven days-sometimes up to 1 month).

For (Mirecki & Konatar 2012), "*ripening period of two weeks is not enough to develop the sensory characteristics by which Pljevaljski cheese is recognizable*." The authors recommended to ripen the cheese for, at least, four weeks.

To sell the traditional cheese in formal markets, traditional farmers would need to increase the sanitary level of the process.

> *"More controls would be better for everyone: more healthy food for the safe of the families. We have mountains, traditions, with controls everything will be good. – MTP6.*

One of the main problems is that these controls and the modern equipment are expensive and credits are difficult to access for farmers (MPI1). However, some people already made the investments, out of their own funds or thanks to public subsidies.

5.2 "Modern farmers" process: a process considered as intermediate

Modern farmers are quite numerous in Pljevlja municipality (about 30). They benefited of financial support to improve sanitary conditions of the process. For instance, they have now a laboratory with ceramic surfaces and tables, which is the special place to make cheese, and they have a stable cleaning system.

In terms of process, modern farmers follow quite the same steps like traditional ones (and in particular they don't pasteurize the milk) but the equipment and tools are different.

The put the milk in metal cans and bring it to the lab. They filter it in the special cloth for the cheese ("*cjedilo*"). The milk is not heated up because "*if the milk is heated up, it's not a Pljevjla cheese. If the cheese is heated up, the consistency is harder. If it's boiled, the fat of the milk goes up to the surface.* (MTP11). For these modern producers, *"milk is not boiled. It is raw milk. This is the traditional way."* (MPA1). In their farm, they all have their own necessary equipment and *"all of them make Pljevlja cheese, they produce it almost the same way*." – (MPA1).
The process they follow is the following.

The rennet is put in the milk at body temperature. They mix and wait about 1h. Whey is separated with a pump. And then pressed with circular wooden planks for about 4 hours with a stone on top. But they can use plastic instead of wood because wood is more expensive and supermarkets don't always send it back to them. During these 2 drainage phases, they can extract the same weight of whey than final cheese. Finally they cut in slices and salt it (about 5%), put in plastic jar and put whey on it so that it's totally covered. They change the water every day (or sometimes more) and have soft cheese in between 10h and 3 days, and hard cheese between 10 and 20 days.

Modern farmers are aware of the difficulty for most people to receive financial support to improve the work and sanitary conditions.

> *"It's hard for other farmers in the area to do the same because they have no bank account, you need to be registered and to make expensive tests on the cheese and you need to pay the veterinary agency" MTP5*

If the GI is in adequacy with their current practices (traditional process but high sanitary level) a GI could be of great use for these farmers to get a premium.

> *"The recipe to make the cheese (use the whey and not the brine, use special rennet, use the same type of salt), and food safety and sanitary criteria. are the most important things to put in the book of requirements." – MTP5*

Diaries could also be interested in a GI, if it recognises their pasteurised cheese.

5.3 Diaries process: a process considered as semi-industrial

The main difference between farmers' cheese and dairies' cheese is that the latter pasteurise the milk, which changes the taste of the cheese. This step is the main difference and source of conflict between farmers and dairies.

> *The industry doesn't make the traditional Pljevlja cheese. They boil the milk and pasteurize it" – MPA1.*
>
> *"Pasteurization is necessary for public health issues. It's the only way to avoid that people get diseases like brucellosis, tuberculosis, etc." – MIP2.*
>
> *"sanitary controls are useful to prove the good quality of the milk, but it's too expensive so it's not realistic to do this for everyone" – MIP2*

Pasteurizing simplifies the sanitary aspects, even if many other controls are realised: milk and products are analysed several times per month, and sanitary conditions are controlled (stainless steel containers, washbasins, special clothes).

They usually need between 6,5 and 9 L of milk to make 1kg of cheese.

To pasteurize the milk, they heat up to 80°C for 2h. Then the temperature is slowly lowered till 18°C, it stays between 12 and 18h until the next morning. Then they heat up to 65°C, next to 40°C and add some additives (calcium for instance). They add rennet, centrifuge and wait 50min. They separate the whey from the cheese thanks to a pump. They press the cheese for 3-4h to drain all water.

Then, they cut the cheese in small slices and salt it (2%). They put it in big containers in a room at 18°C for 3 weeks-1 month. They change the whey every week. They sell the cheese in different packs and only sell hard cheese.

Cheese is not the only product they sell.

The milk processors create a big competition for farmers because they produce big quantities of cheese.

Farmers defend traditional cheese as the real Pljevlja cheese.

"It's necessary to stop industrial [people] who name their cheese "Pljevlja cheese" – MTP14.

Once again, we see that the main differences are:

- the pasteurization or not of the milk: farmers argue that pasteurised cheese is not real Pljevlja cheese, whereas dairies answer it is unrealistic to produce unpasteurised cheese at a big scale under correct sanitary conditions;

- the exigencies in terms of sanitary controls: most traditional farmers are not registered and don't make sufficient tests to access the formal market (but all the flocks are under veterinary control).

Depending on the choices made in the book of requirements, different players will be favoured.

At the moment it seems that modern farmers are those leading the GI Process, which would be in favour of an unpasteurised cheese with high sanitary requirements. This scenario could be at first difficult to access for most farmers.

Apart from these choices, the implementation of a GI is highly depending on the institutional framework that defines it at the national level.

6 Advanced institutional initiatives against the backdrop of an incomplete law

Despite its small-scaled structure, Montenegrin agriculture is one of the three most important sectors of the economy of the country such as in most of the Balkanese countries. But unlike some of its neighbours, Montenegro is keen to support the current structure of the agriculture by emphasizing quality and tradition. Based on this observation, the GI is likely to be a good strategy for rural development in Montenegro. But if the institutional framework is already far advanced, the legal framework still lags behind because of its unachieved law.

6.1 A law still to be rewritten

Although Montenegro has been part of the World Intellectual Property Organization since 1994, the history of the protection of the intellectual property really began in 2005 with the law on trademarks. The first version of the GI law followed in 2008 as the olive oil industry was targeted for obtaining the indication. A second version was launched in 2011. Today, this version is still being used, but the lawyers of the Intellectual Property Office of Montenegro are working on a new draft that should be ready in April 2016.

6.1.1 Lacks of the first law to fulfill the EU standards

Although the 2011 law provides a definition of the appellation of origin and of the geographical indication and insists on the link between the specificities of a product and its geographical area of origin, some critical points still need to be added to comply with the EU standards. It must be noted that, unlike in Kosovo, there is no mention of the Traditional specialty guaranty (TSG). Thus, GI and TSG are not distinguished, which could mislead both the customers and the producers on an international market. Secondly, there is no mention of a trans-border GI, which could be relevant insofar as Pljevlja is located near the Serbian border and as the Serbian competition on the cheese is fierce as it will be explained. The trans-border GI could then be taken into account as a preventive measure. Finally, it can be noticed that no article deals with the protection of the GI against the translation of the name or part of the name. Therefore any country could use the name of Pljevlja as long as they slightly change the connected words.

6.1.2 A long procedure towards the adoption of the law

According to the MoA, the draft of the law should be ready by April 2016. However, nobody can say when the law will be adopted as there are a lot of steps that have to be fulfilled by then (Figure 70).

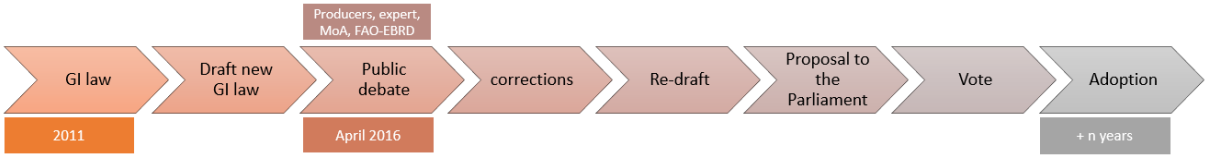


Figure 70 : Law Drafting Process

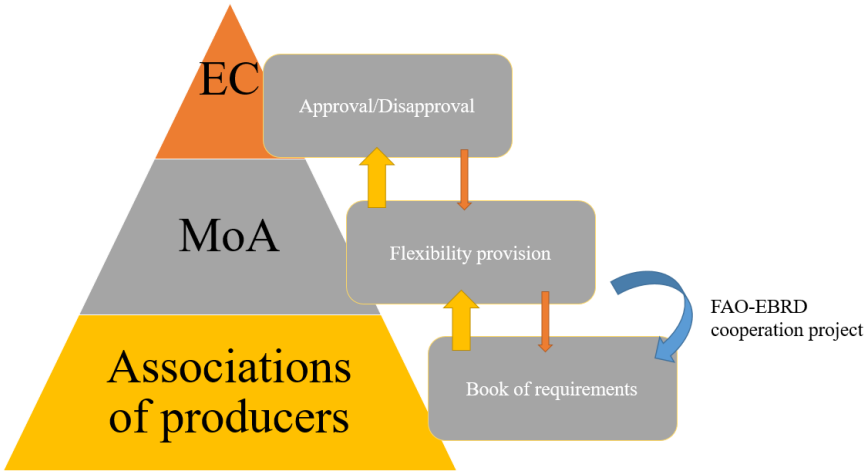
Once the draft is ready, it is submitted to a public debate with the participation of numerous players from different grounds such as associations of producers, legal experts, technical, professors from the university of Agriculture, the MoA and the experts of the FAO-EBRD program (in the case of meat) that will be discussed in more details in the next section. After it is reviewed, the lawyers take the comments into account and bring some corrections to the draft before proposing it to the Parliament where the law will be voted. The duration of the process could allow time to transform the agriculture as planned by the MoA.

In parallel, an association of producers of Pljevlja cheese has already been created and has already started to work on its book of requirements according to the process described in Box 4. From this team, work could result a GI that protect the small holders as well as optimise the hygiene.

Box 4: Validation Process of the Book of Requirements

The association of producers is in charge of writing the specifications of the product that should include its specific qualities, the explanation of the link between the product and the geographical area of origin, and the sanitary measures. The book of requirements is then reviewed by the MoA that assesses whether the conditions for getting the GI are fulfilled and if the sanitary measures comply with the flexibility margin. If not, the book of requirements is sent again to the association to be reviewed. In the same time, the MoA has the flexibility provisions on sanitary measures approved or disapproved by the European Commission. It is important to note that Montenegro has a status of observer in the decisions taken in favour of the GI, as it is not part of the European Consortium that gathers countries like Germany, France, and Italy etc.

At the two first stages, the experts of the FAO-EBRD project give assistance to make sure that the lines of the book and requirements and those of the flexibility provisions comply with the European norms decided by this Consortium.



6.1.3 A product legally defined by the law through 3 main focuses

Like Kosovo, the Montenegrin law follows the main stipulation of the EU requirements: inform the customer about the origin of the product, protect the producers from fake competition, and avoid any trade distortion in a global economy that could mislead the consumer or prejudice the producer.

We won't repeat ourselves in this section and we invite you to refer to the similar section in Kosovo.

6.2 The administrative framework: a step already far advanced thanks to a unified strategy of Montenegrin rural development

In Montenegro, a Plan of Strategy for Agriculture and Rural Areas 2015-2020 was released by the MoA. Supported by the FAO and EBRD through a 2-year program, the MoA clearly defines its policy in terms of rural development: the objective is to foster the small-scale agriculture and to focus on tradition and quality. In this regards, GI is clearly seen as a new kind of trademark that aims at attesting these two characteristics, and to improve the hygiene without proceeding to any radical change in the production systems.

As a result of this mutual work, the administrative framework has been identified as follows: the registration body will be embodied by the MoA through the Intellectual Property Office, and Monte Organika - a private operator that already certifies organic products – is on the track to be accredited to play the role of certification and control body. These three bodies should ensure the achievement of the strategy.

6.2.1 A GI that cannot go without the question of hygiene

In a country where the number of tourists more than double the population every year, a GI becomes valuable when it is a sign of quality of a product. Likewise, the rural development must focus on the improvement of the hygiene to offer a high quality product to the customer. Then for the government, GI and hygiene go together: the GI enables the producer to invest in materials to improve his conditions of production while the improvement of the hygiene makes it easier to apply to the GI. That is why Montenegro is currently participating in a project led by the Food and Agriculture Organization (FAO) and European Bank for Reconstruction and Development (EBRD) that aims at upgrading food safety and quality standards in the meat sector. This technical cooperation project carries out three main missions displayed in the terms of reference of the project report « Upgrade of Meat Quality Standards in Montenegro and Exchange of Lessons Learned in the Western Balkans » (2015):

a. Through the implementation of policy, facilitate dialogues between the private and public sectors on food safety and quality legislation, including flexibility and derogations for small producers. In this sense, the experts are assisting both the administrations and the associations of producers (Box 4), and thus pursue the vision of the United Nations and the European Union in the rural development of Montenegro.
b. Provide capacity building for the development and adoption of relevant derogations of the legislation, on both food safety and GI and to both public and private sectors.
c. Facilitate implementation of GI legislation in Montenegro's meat sector, through product specification, awareness raising and marketing

As of today, these procedures are still on-going, but if this program benefits to the meat industry so that typical products such as Prosciutto can get a GI, it could be an example to follow for the Pljevlja cheese. However, the flexibility margins that will be defined are really important as the question of who will be able to apply for the GI or not will depend on it. Indeed, if the scope of flexibility is too small, a lot of small producers are likely to be ruled out.

6.2.2 A strategy adapted to the structure of the Montenegrin agriculture

To be able to define a strategy adapted to its agriculture, the MoA needed to take into account four fundamental characteristics of the country:

- The structure of its agriculture which is small-scaled and fragmented
- Its preserved nature
- Its rich biodiversity
- Its European orientation

In view of the above, the strategy for rural development is perfectly summarized hereunder:

> *« In an international market with large-scale production, low unit costs and standardised products, Montenegro will have very little chance to compete in terms of both quantity and price. This is exactly why Montenegro, in addition to conventional production methods, should focus on the development of agricultural and food products based on traditional methods of production, thus securing for itself a niche for high quality. Considering the afore-mentioned facts, it is clear that Montenegro cannot focus its development on large-scale production, but rather needs to develop the production of high quality traditional products, which will be marketed through tourism. One opportunity for the development of Montenegrin agriculture, both in domestic and international markets, is to direct as many products as possible into quality assured schemes that provide added value. » (2015, Strategy for Agriculture and Rural Areas 2015-2020, p.5).*

In this sense, the GI is an appropriate reply to the strategy. But some issues need to be stressed at this stage, as the scope of people who are going to benefit from it will not only depend on the direct

measures implemented by the MoA, but also on external parameters at a higher and cross-disciplinary level that need to be harmonized in order to be fully in line with the strategy for rural development.

6.2.3 A fragile achievement due to external parameters that must be taken into account

So far, it can't be denied that the Montenegrin agricultural policy seemed to be quite fluid. Nevertheless, some thorny issues need to be discussed at a national level so that the implementation of the GI can be optimal.

During the interviews, we understood that the importations of cheese and milk could be a serious issue to deal with if the government wanted to promote its small-scale agriculture. The milk is indeed imported from Serbia with a price sometimes twice as cheap as the local milk. If the government doesn't change this foreign policy, it could prejudice the small holders despite domestic measures in favour of the small agriculture. Similarly, Serbian counterfeits of Pljevlja cheese enter the country to be sold in the same distribution channels as the real Pljevlja cheese. However, we don't know to what extent Montenegro is committed to bilateral agreements and how the problem could be solved. We could not collect any detailed statistics on these importations but this problem often emerged during ourinterviews. This leads us to question the GI, as we can wonder if this instrument would be sufficient to protect the Pljevlja cheese or if taxes on importations for example should be added.

The second point to be discussed is about the funds that will be raised to achieve such a strategy. As of today, the main part of the budget comes from international funds (European Union, USAID…) and the program FAO-EBRD that interacts with both the government and the producers could clearly give an orientation to the design of the next farming structure in Montenegro. Will all the farmers be able to afford the improvement of the sanitary level? Who is really going to benefit from this agricultural policy? Whilst the good will of the government is not questionable, it can' be denied that the MoA will have to take these issues into account while discussing the next directives.

Based on what we dealt with, it can be concluded that Montenegro is a step ahead compared to Kosovo as regards to the implementation of the GI on their cheese. Indeed, even if Kosovo has its law ready, it might still take years before the elements that make a GI can be gathered, the first requisites being a unified vision of the strategy for rural development from the three bodies ruling the GI and a single view of its use. GI creation in Montenegro seems to be more fluid and its coming success is almost obvious.

Research has already been carried out to defined the specificities of the Pljevlja cheese, an association of producers has already emerged and is already working on its book of requirements to propose it to the MoA, and the territory has clearly been identified as being Pljevlja municipality.

The next section is now dealing with these four mandatory requirements in more details and will also display the stakes and the different scenarios that can occur depending of their evolution.

7 Analysis of elements at stake in the creation of a GI on Pljevlja cheese and its resulting impact on rural development and environmental protection

In order to create a GI on Pljevlja cheese, several choices have to be made regarding the definition of the territory, the product and the collective action behind it. These choices will favour different types of players, practices and lead to different degrees of environmental protection. After making a typology of the different players directly or indirectly involved in the creation of a GI on Pljevlja cheese, we will therefore review the different parameters on which a GI will have to make arbitrages. We will then analyse the potential impact of these choices on players, rural development and environmental protection. Finally we will select the scenario leading to the highest degree of environmental protection before critically analysing its limits as well as the limits of the GI tool in itself.

7.1 Players typology

Different stakeholders will be directly or indirectly involved by the creation of a GI on Pljevlja cheese. As previously evoked in this document, these players have different understanding and views of what should be such a GI. It is therefore critical to have a good vision of the typology of players involved in order to make a relevant analysis of what is at stake in the creation of a GI on Pljevlja cheese.

We could identify some groups of players.

- Modern farmers, Pljevlja municipality, chemistry scientists and the people we met at the Agriculture ministry are in favour of establishing a GI on unpasteurized cheese, in order to support traditional agriculture and to valorise products from rural areas for tourism market on the coast.
- Supermarkets and shops are connected both to dairies and to modern farmers, who have the ability to control the sanitary quality of their products.
- As we only met two local dairies, it is difficult to analyse the connection network of these players with other players at the national scale. It would have been interesting to meet more dairies using milk from Pljevlja but settled in other parts of Kosovo.
- “Traditional farmers” are connected to local people or to middlemen, which gives them an access to customers. At the moment, even if their cheese is most of the time as good as modern farmers’ cheese, they are marginalised in the system because they don’t meet the official sanitary requirements to enter formal markets. If the GI could interest them, it might be difficult for them to access it if the book of requirement is very strict on sanitary requirements.

Table 14: Players typology on Pljevlja cheese

Player category	Player sub category	Stakes	Strategies	Constraints
Farmers	Traditional	Improve sanitary conditions Increase sales and margins Protect traditional way Find better sale channels Protect from foreign importations	Increase flocks Pay for sanitary controls GI	Access to funding Book of requirement
	Modern	Increase sales and margins Protect traditional way Protect themselves from industry competition Protect from foreign importations	Good sanitary conditions Association GI	Packaging Book of requirement
Dairies and transformers	In Pljevlja	Protect from foreign importations Export Increase sales and margins	GI	European laws Book of requirement
	Outside	Increase sales and margins	Use Pljevlja cheese name	Not in Pljevlja municipality
Distribution	Middlemen	Earning a life by an activity of trade & transportation between the North and the South of Montenegro. The challenge is to have supply and demand match each other, while maintaining a good margin.	Buy Pljevlja cheese in the Pljevlja region at around 3,20€/kg to sell it at around 4,50€/kg in Podgorica and the South of Montenegro	Supply and demand. Middlemen compete with the integrated supply chains of the dairy sector. Requires a good commercial mindset.
	Supermarkets	Being able to buy products in high volumes at low prices at any moment of the year. These must be mass consumption products.	High volume strategy, achieved by contracts with dairies and sometimes middlemen. Adaptation to the local demand (no Pljevlja cheese sold in Pljvelja supermarkets, but it is sold in Podgorica).	Must focus on high volume because of low margins.
	Restaurants	Answer to the occasional or high demand for Pljevlja cheese, depending on the location	Buy Pljevlja cheese from trusted farms people at the green market or from a renowned dairy then sell it at a higher price (1€ for 100 grs) with the restauration service, or include Pljevlja cheese in the composition of traditional meals	A volatile demand
Institutional players	Municipalities	Apply the strategy of the MoA and make it match with their agriculture at a local scale	Use the GI to achieve their goal	No funds
	Ministry of agriculture	Make a relevant policy for rural development that would allow them to improve the sanitary level and enter the EU. Also offer better quality products for the raising touristic demand	Use the GI as a tool for rural development and a way to improve hygiene + maintain the agricultural structure while improving hygiene	International funds + bilateral agreements
Consumers		Quality cheese, daily consumption	Buy to friends, family, farmers, green market	Low income

7.2 Critical choices to be made in order to create a GI on Pljevlja cheese

Choices to be made to create a GI on Pljevlja cheese are not so open anymore, since several choices have already been made. This leaves less space for prioritising rural development and/or environmental protection.

7.2.1 Territory

Contrary to Sharri cheese's territory, the territory for a GI on Pljevlja cheese isn't so much debated. All players we interviewed agreed on the idea that Pljevlja cheese territory was the same as Pljevlja municipality (Figure 71). This can be explained by the fact Pljevlja municipality is largely delimited by national frontiers in the North and in the West, and by a natural frontier in the South, the Tara canyon, beyond which another cheese is made, the Durmitor cheese. At the East, the landscape also changes beyond Pljevlja municipality's borders since the altitude decreases. Pljevlja territory is also characterised by a relative uniformity. The whole region is situated in altitude, with Pljevlja city lying at 761m above sea. Above Pljevlja, the rest of the municipality is mostly constituted by large plateaux ranging from 900 to 1200m in average according to players interviewed, rather than narrow valleys.

Despite this consensus and relative uniformity, further research might have to be undertaken in order to demonstrate the geological and biological unity of Pljevlja plateaux and pasturelands, in order to ensure the organoleptic coherence of Pljevlja cheese in the frame of a GI. Such research could lead to slightly redesign the borders' of the GI territory, probably on altitude criteria regarding the milk sourcing territory. Such a constraint on altitude could be particularly interesting if the aim is to leverage the GI to foster agro biodiversity by maintaining breeding activities in the higher parts of the Mountains.

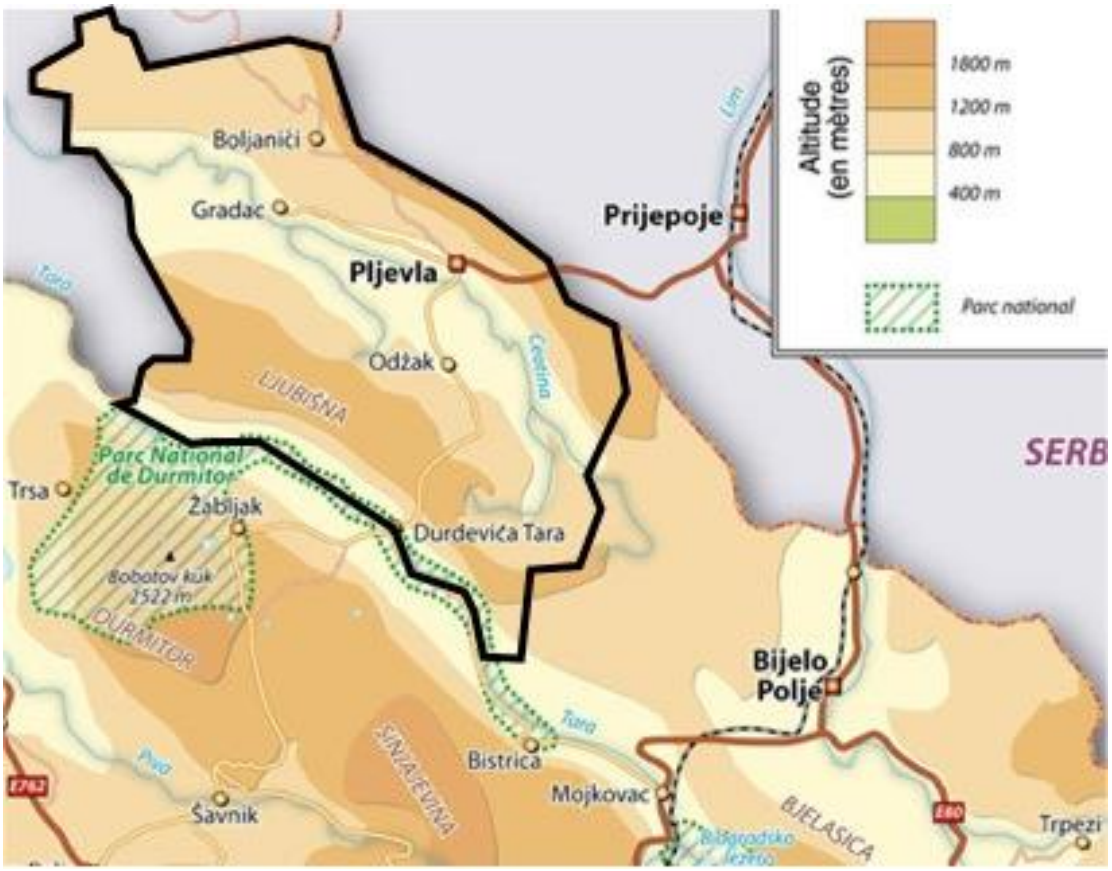


Figure 71: Territory of Pljevlja cheese production,
(Source: background map from Canalmonde)

7.2.2 Product

The second important thing to decide when creating a GI is the definition of the product, which will lead to the drafting of the GI's book of requirements. During our interviews and observation in the Pljevlja region, we noticed that Pljevlja cheese was far more stabilised than Sharri cheese. There were no debate on the type of milk used and the presentation was far more uniform. There were also fewer differences between the most traditional farm products and dairy products. Remaining variables can be regrouped in two categories, namely:

- Milk and breeding practices
- Transformation, which corresponds more or less to the definition of the process but can also concern the place of transformation.

These differences have been summarized in a non-exhaustive synthetic gradient figure below that we will further detail in the following paragraphs.

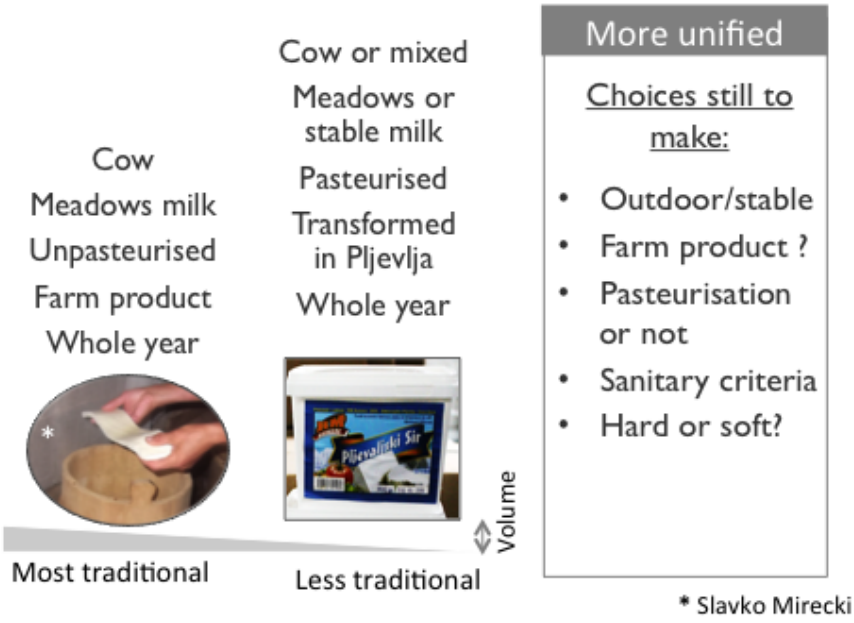


Figure 72: Gradient typology of Pljevlja cheese products

7.2.3 Milk and breeding practices

Type of milk is stabilized

As we saw in the section on consumers' perceptions, the type of milk used for making Pljevlja cheese is stabilised. Though it used to be made with sheep milk or mixed sheep and cow milk, it is almost impossible nowadays to find Pljevlja cheese made with sheep milk. Indeed, remaining sheep flocks are now mostly bred for their meat only.

> *"When I started Pljevlja cheese was always made with both cow milk and sheep milk. Both milks were mixed to make the cheese, he seldom saw Pljevlja cheese made only from sheep milk. People didn't care if it was only cow milk or mixed milk, there was no difference in price. Now it is only made with cow milk mostly and when people make it with sheep milk, they don't mix it anymore, but it is hard to fine". MMM, former trader Pljevlja/Podgorica*

For this reason there is a consensus that the GI on Pljevlja cheese should be on Pljevlja cheese made with cow milk.

Some choices have still to be made regarding breeding practices

Pastoral practices in Pljevlja have strongly declined. There is almost no transhumance anymore, even if there used to be some before the end of Yugoslavia. Only a few big flocks of sheep still go to highland pastures in summertime and almost no cow flocks anymore. Cows are still often kept outside but most of the time they are only led to pastures close to the farm and brought back to it each evening.

> *"Mostly people don't go to the mountain pastures anymore. It is only worth it if you have more than 200 sheep, else there is a lot of land available because of rural exodus It is not worth it with cows, not necessary because there is a lot of food available close to the villages since there are less animals". MPT1.1 - Traditional farmer*

This is probably due to the fact that Pljevlja's farms are directly situated on a large plateau at high altitude, that villages' density is quite small, which makes it unnecessary to bring flocks higher in the mountains to find good food resources, especially in this context of rural decline.

For this reason it is nearly impossible to leverage a GI on Pljevlja cheese in order to maintain these almost disappeared practices.

Yet it would still be possible to influence other parameters. For example the GI's book of requirement could require that cows spend a specified minimum number of days outside and are not kept all year long in stalls. Through the book of requirements or the definition of the territory for milk sourcing, the GI could also specify a minimum altitude at which the cows should graze and the type of pastures where they should be fed.

Finally the GI could set up some requirements concerning the food given to the animals, especially in winter but also in summer since we noticed during our interviews that cows were also often fed with some concentrates during summertime. The GI could thus limit the quantity of concentrates authorised in the cows' diet, require a certain percentage of the food given to the animals to come from the mountains like local hay or cereals.

7.2.4 Transformation

Regarding the transformation of the milk into cheese, the main variables we noticed concerned the place of transformation, the choice to use pasteurised milk or not, the length of maturation, and the sanitary conditions. Final presentation of the product was quite uniformed. It was presented in brined slices at different stages of maturation, kept in wooden or plastic boxes. Yet we couldn't observe how it was presented in Podgorica.

Where? Farm or dairy in cities?

One of the criteria remaining open regarding Pljevlja cheese making is where the process should take place. For most farmers interviewed, the process was made at their home, in their kitchens, dedicated places or dedicated laboratories for the most modernised farmers. We also met one dairy that was sourcing its milk from the mountains and transformed the cheese in its small factory in the city. The GI will thus have to settle if Pljevlja cheese is a farm product that has to be made at the farm or if it can be a product made by dairies. If the farm solution is the one chosen, the GI will also have to decide if farmers transforming their own milk into cheese at their farm can increase their production by buying milk from other farmers and transforming it into cheese alongside their own production.

Pasteurization?

Regarding pasteurisation, the cleavage was clear between farmers and dairies. While farmers never pasteurised their milk before turning it into cheese, dairies always did. Dairies justified pasteurisation with concerns about hygiene; while farmers thought it would change the taste of the cheese.

Sanitary conditions?

Sanitary conditions also significantly differ between different types of producers.

The book of requirement can require different levels of sanitary requirements. It would also be possible for the GI not to have exactly the same level of exigency regarding these requirements according to the type and size of the farmer, thanks to flexibilities and derogation conditions that are currently being drafted by the government.

7.2.5 Possibilities for distinguishing different products

Given the relative homogeneity of the product, the GI will probably not exclude a too large category of players even if it tries to focus more on environmental protection and rural development like it could be the case in the Sharri Mountains. Therefore the need for creating other labels for products that could be excluded doesn't seem to be very high.

In the same way the interest of using PDO and IGP to distinguish between two products, as it was proposed for the Sharri cheese by the IPA, doesn't seem very relevant. The choice between IGP and PDO will depend on the orientation and the aim of the GI, the PDO granting a higher level of protection to traditional farm products since it can settle both on milk sourcing and transformation while IGP would focus only on one of these items.

Yet it might be interesting to resort to sub-mentions to distinguish between soft and hard Pljevlja cheese, setting for them maximum and minimum durations of maturation.

7.2.6 Collective action

Collective action for the creation of a GI on Pljevlja cheese already started. Indeed, following governmental communication on GIs, an association of producer was created by 3 farmers producing Pljevlja cheese. The association was created in April 2013. It was supported by USAID and the municipality of Pljevlja (MPA1- Pljevlja municipality). This association counts 46 members, of which only 11 are registered. It was created in order to take in charge the design of a PDO on Pljevlja cheese and received some financial support from the USAID that, since then, withdrew from Montenegro.

However, this association is not very active and members don't meet more than twice a year. They have started thinking about a book of requirement but mostly follow the recommendation of Mirecki's book, which was distributed to them by the Agriculture department of Pljevlja municipality, thanks to funds from the USAID. This association defends the idea of a PDO protecting traditional Pljevlja cheese.

According to one of its founders, the most important items to be put in the book of requirement concerned the food given to cows, the recipe for making the cheese and sanitary criteria:

- Cow's alimentation: According to what he told us, cows should graze grass from the plateaus of Pljevlja municipality that were, according to him, around 1000 m above sea in average. (It was not clear if he considered 1000m to be a minimum altitude for pasture in the GI) In winter, cows should mostly eat hay and clovers from the pastures. Natural local food should amount to 80% of cow's alimentation.
- Recipe for making the cheese: He underlined that the milk used for making the GI Pljevlja cheese should not be pasteurised. Also he pointed out the importance of using salted whey and not salted water for making the brine.
- Food safety and sanitary criteria: He pointed out the necessity for farmers to be registered farmers in order, in the future, to get certified as a GI Pljevlja cheese producer. He also said that farmers would have to have a special laboratory for making the cheese, with ceramic surfaces and table as well as a space to store the cheese. According to him they would also need a stable cleaning system with a sceptic tank for liquids and another one for manure (Figure 67). Finally

they would have to get the cheese tested once a month and to follow other recommendations specified in Mirecki's book.

Yet these criteria are not fixed yet and they are waiting for the administration to come back to them in order to inform them about the next steps (Most of the information above is based on MPA1 and MPT5)

The lack of dynamism of the association is probably linked to the fact that the law had to be redesigned and thus stalled the process of GI creation in Montenegro. Due to this lack of progression of the GI and the association's activities, some farmers belonging or not to the association the association sometimes doubt about its usefulness, even if they mostly support the idea of a GI creation.

Institutional organisations in Montenegro are also pushing for the development of GIs in general, providing funds and technical support, even if for the moment mostly for meat products. They support the creation of a specific GI on Pljevlja cheese. Though they provided some technical and financial support to the association of producers of Pljevlja cheese at its creation, they don't seem to have been very active on the question lately, given the fact the law was stalled.

Finally, in Montenegro, the less active players regarding the creation of a GI on Pljevlja cheese are dairies and cooperative, who consider the concept of GI as a trademark, insist on the necessity of standardising heavily Pljevlja cheese. Even if the owner of the dairy company in Pljevlja is a member of the producer association, he is not very committed (MIP2) and could be excluded if the decision was made to authorise only unpasteurised milk for making Pljevlja cheese, as it is for the moment the project of the association.

This situation and these positions have been summarised in the Figure 73.

Figure 73: Collective action for a GI on Pljevlja cheese

7.3 Analysis of possible alternatives for each of these parameters

Choices made regarding these parameters will favour different types of players, practices and lead to different degrees of environmental protection that we analyse below (Figure 74). In this figure, we showcase the major options regarding these parameters and the potential impacts they could have in terms of players favoured (in black), rural development (in blue) and environmental impacts (in green). This decision tree is evidently not exhaustive since possible combinations are numerous. For each major parameter, options showcase have been chosen to showcase gradient of combinations that

give a rough idea of the field of possibilities of choices and their potential impact, from choices more in favour of traditional producers and optimising environmental impact to choices more favourable to a concentration and relative industrialisation of the value chain. In a same way, all the parameters on which the book of requirement could settle, for example the number of days spent by the animals in pasturelands, the percentage of winter food coming from the mountain vs. the percentage of concentrates allowed were not detailed in the section breeding practices. Boxes in the figure below simply represent general orientations and don't go into details.

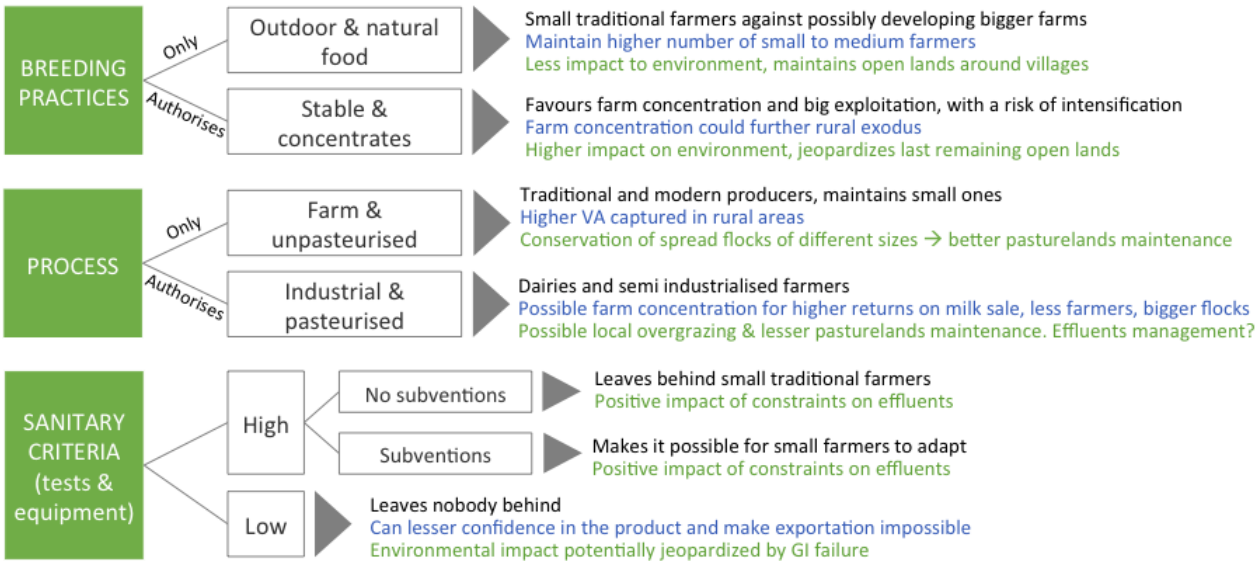


Figure 74: Decision tree on open parameters for the creation of a GI on Pljevlja cheese

7.4 What could be the contribution of a GI on Pljevlja cheese to environmental protection?

Given the fact a GI on Pljevlja cheese is likely to concern only cow milk cheese and that transhumance has disappeared for cows in the area, the leverage potential of the GI for maintaining pasturelands is far less important in the region than in the Sharri mountains. Yet the GI could still help to maintain cows in the mountains and to better manage animal's effluents.

7.4.1 Potential beneficial environmental impacts

Potential beneficial environmental impacts are fewer for a GI on Pljevlja cheese than for Sharri cheese. Yet a GI on Pljevlja cheese could at least maintain some open lands around farms and villages by maintaining free range cows, while improving the management of their effluent at night and during wintertime. Furthermore, such a GI could help to protect traditional or at least local Pljevlja cheese producers from disloyal competition from abroad producing Pljevlja cheese imitations. In a similar way than for a GI on Sharri cheese, the scale of these impacts would depends on the type and number of farmers that will fall in the scope of this future GI on Pljevlja cheese.

<u>Preservation of pasturelands through sheep and pastoral practices conservation</u>

In Pljevlja region, pastoral practices and transhumance have almost disappeared for cows. It is rare for these animals to be brought at more than 45min/1h away from the farm, both because food is available within this range because of the agricultural decline of the region, and also because it makes the milking of the cows and milk transportation and conservation easier. Yet, by imposing a minimum time of outdoor grazing, proportion of natural food in the cow's annual alimentation and a minimum

altitude at which cows should be kept, the GI could at least maintain a few open lands close to farms and villages.

Effluents management

Impacts on effluent managements would be sensibly similar to the one described in Sharri region. The impact could be even higher since animals are not kept in stables in wintertime only but are brought back to the farm and kept indoors every night in summer as well.

7.4.2 Scope of these potential impacts

For these impacts to have a significant scope, it is important for the GI to have a strong focus on farmers and not to exclude too many of them by focusing only on modernising farmers. We met a lot of farmers who only had a few cows (2 to 4) yet relied only on the production of Pljevlja cheese for their income. Some flexibility provisions could thus make it easier for these small farmers to benefit from the GI as well. Regarding the maintenance of open lands around villages and farms, a particular attention should be granted to particularly valuable areas in the definition of the territory or at least the minimum altitude for grazing in order to maintain a maximum livestock activity in the most valuable area, without reducing too much the scope on the GI regarding rural development. A good balance has to be found since the potential leverage of a GI on Pljevlja cheese is higher regarding rural development than open lands preservation.

A choice could thus be made to optimise the rural development impact of a GI on Pljevlja cheese while resorting to other tools to maintain open lands and protect biodiversity in the region. As we discussed, sheep preservation seems to be the most efficient way to preserve pasturelands. It is especially the case in Pljevlja region where the last remaining pastoral practices only concern relatively big flocks of sheep (>200 sheep). Since these sheep are mostly raised for their meat, a GI on Pljevlja lamb and/or on Pljevlja dried sheep meat could be an interesting way to maintain sheep populations and related pastoral practices in the area. However these sheep populations are particularly threatened given the difficulty to find shepherds in the area and the more problematic relationship to big wild fauna. When we interviewed sheep flocks owners in the area, we noticed that it was very rare for them to have protection dogs. They use to regulate the number of predators through hunting.

Yet it is now forbidden to hunt wolves in the area, and especially in the South of Pljevlja region, close to Durmitor Park. In order for a GI on sheep or lamb meat to foster the preservation of pasturelands without having a detrimental effect on the big wild fauna, it would therefore be necessary, in parallel, to reintroduce protection dogs and related knowledge and practices in the area. A communication campaign to improve the image of Shepherds could also help to revalorise this profession and make it easier for sheep owners to find some workforce.

7.4.3 What the GI cannot do

Free range cow's breeding in the Mountains and traditional cheese making are vulnerable practices that rely on natural ecosystem and on a socio economic environment that can be threatened by intensive development initiatives and rural exodus. More directly, these practices can be threatened by foreign competition, and, depending on individual farmer's resilience, by input dependency or by their difficulty to adapt to new sanitary or regulatory requirements (Figure 75).

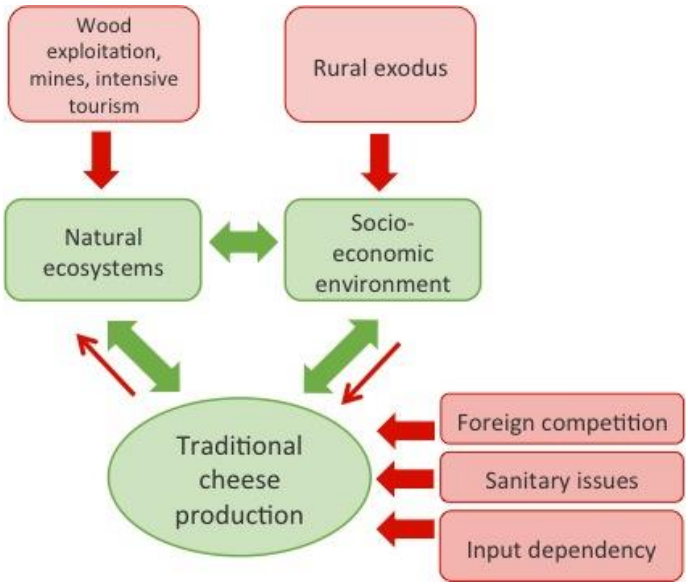


Figure 75: Major threats to traditional Pljevlja cheese production

Direct threats

Most important direct threats to Pljevlja cheese producers are importation of cheaper dairy products from neighbouring countries and the difficulties some producers could encounter in trying to adapt to new sanitary criteria.

Import threat:

Though a GI on Pljevlja cheese could already have a good impact on this threat by protecting the name of Pljevlja cheese and thus preventing its usurpation by foreign cheese producers, Pljevlja cheese could still suffer from the competition of imported cheaper milk and cheese. Indeed, these products often coming from Serbia, are cheaper than local products, which make them attractive for the Montenegrin population. Montenegro's inhabitants have been severely impacted by the crisis: unemployment is high and their revenues are low, especially in Pljevlja region that used to be an industrial centre at the time of Yugoslavia, whose activity has dramatically decreased at the end of the century. Creating import barriers, renegotiating bilateral agreements or better supporting and promoting national products might thus be necessary to fight against this threat.

Sanitary fragility:

Though the category of modernising farmers is most developed in Montenegro than in Kosovo, many small farmers might still meet important difficulties in adapting to higher sanitary and regulatory requirements. It means that they do not take part in the formal market and thus will be excluded from the GI.

Indirect threats

These agricultural practices are indirectly threatened by potentially more attractive development activities like mining, intensive tourism, forestry and energy that could negatively impact the natural ecosystems on which traditional cheese making rely. We could already witness the negative impacts mining and the energy sector (coal mining and thermal power plants) had on local natural environment (air pollution, soil contamination by open air mining...). The impact of forestry, though very developed, is hard to assess given the fact forests are progressing due to general agricultural decline and open lands closure. For the moment, tourism doesn't seem to have a very high impact on natural

ecosystems but the admission of Montenegro to the European Union could foster the development of more impacting touristic activities like ski resorts.

Furthermore, rural exodus is particularly pregnant in the area, making it not very attractive for the young generation to take over the farms of their parents. Rural exodus indeed leads to decreasing amenities (road management, school, maintenance of electricity networks that lead to frequent electricity shortages in remote houses and farms). It also makes it quasi impossible to sell their cheese for farmers who don't have access to traders or who don't have family able to bring their production to the south of the country.

A GI on Pljevlja cheese, alone, would have a limited impact to fight these indirect threats. Additional ways to fight against them could be to foster eco-tourism and to improve public policies regarding small-scale farming and traditional value chains promotion. Regarding the first parameter, progress could be made to redirect towards the north of the country a proportion of the numerous tourists visiting the Southern part of the country in summer. This would require a communication and public campaign to better valorise the natural ecosystems and noticeable areas in the North of the Country. Creating a new national park in Pljevlja region and promoting its products through Park Brands could be one strategy to do so. Regarding promotion of small scale farming, several efforts are already being made by the government, yet a better management of foreign competition against national products that, according to some people interviewed, benefit from a very strong support of foreign neighbouring countries (MPT9) would be necessary for the already existing support to bear fruits.

Conclusion of chapter 3

Crafting a GI on Pljevlja cheese seems coherent, because the product is famous in the whole country, and needs to be defended against counterfeit products. The GI process is far more advanced in Pljevlja than in the Sharri region. Indeed, the territory is well delimited (national boundaries, geomorphological homogeneity) and the product is quite clearly defined by all the people we met. However, like in Kosovo, one of the main choices for the book of requirements will concern the pasteurization or not of the milk.

People in favour of protecting unpasteurised cheese are more organised in Pljevlja than in Kosovo, and some "modern farmers" already access formal national markets with unpasteurised cheeses (supermarkets and shops). They also have a support from the agriculture ministry, and from scientists.

However, if the GI is developed on this basis, its impact on social and rural development can be questioned, at least at the beginning. Indeed, farmers both producing unpasteurised cheese and being able to respond to hygienic and sanitary norms represent only a small proportion of Pljevlja farmers. A precise analysis of a) the whole value chain (from local to national and international level) and b) the negotiation margin concerning the minimum requirement for legally producing unpasteurised Pljevlja cheese, would be interesting elements to study.

From an environmental point of view, it seems that a GI on Pljevlja cheese will have little impact on landscape and ecosystems, because pastoral practices are already settled very close to the farms. However, maintaining extensive practices and requirements on the quality of the food could already be an input of Pljevlja cheese GI. Other products, like sheep meat, could have more impact at the scale of the territory.

In any case, the creation of the GI on Pljevlja cheese cannot be finalized before all the legislative aspects are built.

GENERAL CONCLUSION

Our comparative work on cheese GI initiatives, in two countries on their way to enter the European Union, allows us to evidence some common challenges for Sharri cheese and Pljevlja cheese GI.

In both cases, products that have been selected already benefit from a national reputation (and even in neighbouring countries), which legitimates the GI strategy.

In both cases also, cheese production is realised by three different categories of players:

(i) Some farmers produce cheese directly at the farm with the milk they produce. These players, sell their cheese directly to customers (at the farm on at the green market) or to intermediaries. Most often, they are not registered officially and don't respect hygiene and security norms for their milk and cheese production. It makes it nearly impossible for them to sell their milk on the formal market (and particularly in shops and supermarkets).

(ii) Some farmers have modernised their exploitation, often thanks to subsidies, which allows them to respect hygiene and security norms and to have access to the national market with farm products. This category is more represented in Montenegro than in Kosovo.

(iii) Some dairies who buy most of the milk they use and make cheese out of it. These small industries respect hygiene and security norms, and in particular they pasteurize the milk before cheese production. They sell their products at the national scale, through shops and supermarkets.

Finally, even though we didn't meet them, it seems that other players (national or from other countries as well) also produce some cheese under the name "Sharri cheese" or "Pljevlja cheese", even though they are not working on these territories.

Depending on who will support the GI project among all of these players, different objectives and interests will probably be stressed.

The GI can before all aim at protecting cheeses from forgery, with limited specifications on pastoral practices, but with strong hygiene and security norms. This scenario would be favourable to local diaries, because they are already beneficiating of a facilitated access to the market, and it would limit external competition. Otherwise, the GI can aim at defending some traditional specificities of the cheeses, like, for example a high quality of milk or the fabrication out of raw milk. In this case, it could be more favourable to modernizing farmers (the others couldn't access the GI market, without a minimum of norm compliance).

In Pljevlja, the players that are today active toward a GI implementation on Pljevlja cheese are closer to the second scenario. It is also consistent with the vision of the Ministry of Agriculture. In the Sharri region, the situation is not very clear, neither at the local nor at the national scale. At the moment, it seems that modern farmers are not numerous enough to weight on the GI orientation, and that diaries are the most organised among potentially interested players. Their vision of the GI would be unfavourable to small farmers production of raw milk cheese and more generally of sheep cheese.

In terms of support to rural development, these two GI scenarios present both advantages and disadvantages:

- In a context of strong rural outmigration, give support to the diaries thanks to a GI might give the possibility to numerous farmers to sell their milk at a better price, and to maintain their activity. On the other hand, the traditional cheese would not be valorised and could slowly disappear.

- Giving support to farm product could allow to valorise traditional products and to increase the sale channels for farmers. However, to have an impact in terms of rural development, it would also imply some brand marketing an the national level, and support for farmers « professionalization ».

The second option has nevertheless been chosen in Montenegro, in order to valorise the traditional products for tourist consumption on the coast. In Kosovo, debates are still very opened on the question, as we saw during the final restitution of our project in Prizren.

Finally, from an environmental point of view, GI impact can be expected in two ways:

- By maintaining pastoral practices that have a positive impact on plant biodiversity (mosaic of ecosystem), and little impact on big fauna conservation;
- By improving waste and effluent management of agricultural exploitations.

If the second item is worth considering in both countries, the impact on biodiversity through pastoral practices is more likely to happen in Kosovo, where transhumance practices are still quite vivid for sheep flocks, than in Montenegro where these practices already nearly totally disappeared.

For both rural development and environmental conservation, the GI ability to make a change id depending on its scope (number of people, success of the premium policy…). In any case, for these objectives, it can only be one element in a more global and consistent set of public policies.

BIBLIOGRAPHY

Agricultural Census (2014), National Statistics of Kosovo, 16p.

Amidzic, L. & Ostojic, D. (2006). The Shar-planina vegetation, *Protection of Nature*, 56, pp. 33-49, Belgrade

Bernard, C. *et al.* (2014). Quality labels: a way to support the development of pastoral resources? Methodological insights based on the monographic analysis of Hasi Region – Northern Albania. In: Forage resources and ecosystem services provided by Mountain and Mediterranean grasslands and rangelands. *Options Méditerranéennes. Série A : Séminaires Méditerranéens, 109*, pp. 637-641.

Bernardoni, P. and Martinovic A. (2015). « Identification of potentials for protection of geographical indications of products in Montenegro ». Donja Gorica University, Podgorica, Montenegro, 21 of April 2015.

Bérard L. and Marchenay P. (2006). Local products and geographical indications: taking account of local knowledge and biodiversity. *International Social Science Journal*, vol. 187, Cultural Diversity and Biodiversity, pp. 109-116.

Broude, Tomer (2005). Culture, Trade and Additional Protection for Geographical Indications", *Bridges*, September-October 2005, No. 9, pp. 20-22.

Brunborg, H. (2002). *Report on the Size and Ethnic Composition of the Population of Kosovo. (IT-02-54), ICTY, La Haye*.

ESRI (2011). ArcGIS Desktop: Release 10. Redlands, CA: Environmental Systems Research Institute.

ETF. (2013). « *Value chain analysis in the montenegrin dairy sector* ». European training foundation, Podgorica, Montenegro. 76 p.

Fabris, Nikola, and Pejović I.. (2012). « Montenegrin agriculture: diagnosis and policy recommendations ». *Economics of Agriculture,* 59 (4): 657–673.

FAO – EBRD (2015). *Terms of reference of the project report « Upgrade of Meat Quality Standards in Montenegro and Exchange of Lessons Learned in the Western Balkans »*.

Ferati, Ismail, *et al*. (2013). « Microbiological assessment of sharri cheese produced under traditional and industrial conditions ». *European Scientific Journal* 9 (6): 17-23.

Jonhs T., Powel B., Maundu P. and Eyzaguirre P. (2013). Agricultural biodiversity as a link between traditional food systems and contemporary development, social integrity and ecological health. *Journal of Science of Food and Agriculture*, vol. 93, p. 3433-3442.

Josling, T. (2006), *What's in a Name? - The economics, law and politics of Geographical Indications for foods and beverages,* Freeman-Spogli Institute for International Studies, Stanford University. N109.

Kamberi, M. A. (2009). Republic of Kosovo: Country Pasture/Forage Resource Profiles, FAO. 21 p.

KEPA (2013), *Report on the State of Environment*. Kosovo Environmental Protection Agency & Ministry of Environment and Spatial Planning. Pristinë. 112p.

KOPDA & KAMP. (2012). *Development strategy of Kosovo's dairy industry - 2011-2020*. Prishtina, Kosovo: Kosovo Dairy Processors Association (KDPA) and Kosovo Association of Milk Producers (KAMP). 48 p.

Laze, K. (2014). *Identifying and understanding the patterns and processes of forest cover change in Albania and Kosovo* (No. 74). Studies on the Agricultural and Food Sector in Central and Eastern Europe. 24p.

Mehmeti, A., Demaj, A., & Waldhardt, R. (2009). Plant species richness and composition in the arable land of Kosovo. *Landscape Online*, *11*(1), 29.

Miftari, Iliriana. (2009). *Kosovo consumer buying behavior preferences and demand for milk and dairy products*. Norwegian university of life sciences.

Mirecki, S., & Konatar, Z. (2014). Technology and quality of Pljevlja cheese - Traditional Montenegrin dairy product. *Journal of Hygienic Engineering and Design*, 6, 208-214.

MARD. (2015). *Strategy for agriculture and rural area 2015-2020* . Podgorica, Montenegro.

MoA (2015). *Strategy for the development of Agriculture and rural areas in Kosovo*. Prishtina, Kosovo.

MoA. (2014). « *Agriculture and rural development program 2014-2020* ». Prishtina, Kosovo: Ministry of Agriculture, Forestry and Rural Development.

Marković, Božidarka, M. Marković M., et Rmuš L. (2011). « Status of milk production sector in Montenegro ». *Biotechnology in Animal Husbandry* 27 (3): 387–396.

Olivier de Sardan, J.P. (2008). *La rigueur du qualitatif.* Louvain-la-Neuve: Academia Bruylant.

Rysha, Agim, et Frane Delaš. (2014). « Sensory properties and chemical composition of Sharri cheese from Kosovo ». *Mljekarstvo* 64 (4): 295-303.

Sharri National Park Management Plan (2015). 10-Year Management Strategy 2015-2024, 5-Year Operational Plan 2015-2019. 94 p. Prishtina, Kosovo.

Sylvander, B. (2005). ‘‘Les produits d’origine: les enjeux du XXIe siècle’’, In: INAO - *Le goût de l’origine*. Paris: Hachette/INAO, 60–77.

Tomter et al. (2013). *Kosovo National Forest Inventory 2012.* Kosovo. Ministry of Agriculture, Forestry and Rural Development/Norwegian Forestry Group.

University of Prishtina. (2013). *Monographie, Histoire du Kosovo, 1970-2012*. Prishtina, Kosovo: Prishtina University.

Veselaj, Z.; Krasniqi, F.; Mustafa, B. & Hoxha, E. (2006). *Species of international significance and their distribution in Kosovo*. Proceedings of IV Balkan Botanical Congress, 156-160

Veselaj, Z.; Mustafa, B.; Hajdari, A. & Krasniqi, Z. (2012). Biodiversity conservation in Kosovo with focus on biodiversity centers. *Journal of Environmental Biology* 33, 307-310

Veselaj, Z. & Mustafa, B. (2009). Some concrete threats of biodiversity in the strict nature reserves in Kosovo. *Educologjia* 2, 157-165

Veselaj, Z., & Mustafa, B. (2015). Overview of Nature Protection Progress in Kosovo. Official *Journal of the International Association for landscape Ecology*. 10 p.

ANNEXES

Annex 1 : Interviews realised during the project

KOSOVO				
Code	**Type**	**Place**	**Date**	**Recorded?**
Environmental players				
KEP1	Environmental Player	Prizren	08/03/2016	Yes
KEP2	Environmental Player	Prizren	08/03/2016	Yes
KEP3	Environmental Player	Prishtina	08/03/2016	Yes
KEP4	Environmental Player	Prizren	09/03/2016	Yes
Industrial producer / dairy				
KIP1	Industrial Producer	Prizren	01/03/2016	Yes
KIP2	Industrial Producer	Buzez	04/03/2016	Yes
KIP3	Industrial Producer	Prizren	07/03/2016	Yes
KIP4.2	Industrial Producer	Prizren	08/03/2016	Yes
KIP5	Industrial Producer	Prizren	08/03/2016	Yes
Public institutions				
KPI1	Parliament representative	Prizren	02/03/2016	No
KPI2	Trade Ministry	Prizren	03/03/2016	Yes
KPI3	Agriculture ministry	Prizren	04/03/2016	Yes
KPI4	Wine division	Prishtina	04/03/2016	Yes
KPI5	Municipality	Strpce	08/03/2016	Yes
KPI6	Veterinary agency	Prishtina	08/03/2016	Yes
KPI7	Municipality	Prizren	09/03/2016	Yes
Traditional producers / farmers				
KPT1	Traditional Producer	Brod	01/03/2016	Yes
KPT2	Traditional Producer	Kosavë	01/03/2016	Yes
KPT3	Traditional Producer	Zhur	01/03/2016	Yes
KPT4	Traditional Producer	Grazhdanik	02/03/2016	Yes
KPT4.2	Traditional Producer	Grazhdanik	07/03/2016	Yes
KPT5	Traditional Producer	Mushnikova	02/03/2016	Yes
KPT6	Traditional Producer	Pllajnik	03/03/2016	Yes
KPT7	Traditional Producer	Vlashnje	03/03/2016	Yes
KPT8	Traditional Producer	Brod	03/03/2016	Yes
KPT9	Traditional Producer	Kosavé	03/03/2016	Yes
KPT10	Traditional Producer	Brod	03/03/2016	Yes
KPT11	Traditional Producer	Restelicë	03/03/2016	No
KPT12	Traditional Producer	Manastiricë	04/03/2016	No
KPT14	Traditional Producer	Prevalla road	07/03/2016	No
Sale channels				
KSC1	Sales channels	Prizren	02/03/2016	No
KSC2	Sales channels	Prizren	02/03/2016	Yes
KSC3	Sales channels	Prevalla road	07/03/2016	No
KSC4	Sales channels	Prevalla road	07/03/2016	No
KSC5	Sales channels	Prevalla road	07/03/2016	No
Research / university				
KU1	Researcher in ecology	Prishtina	04/03/2016	Yes
KU2	Researcher in food safety	Prizren	07/03/2016	Yes

MONTENEGRO				
Code	**Type**	**Place**	**Date**	**Recorded?**
Industrial producers / dairies				
MIP1	Industrial Producer	Pljevlja	15/03/2016	Yes
MIP2	Industrial Producer	Pljevlja	15/03/2016	Yes
Public Institutions				
MPI1	Municipality	Pljevlja	14/03/2016	Yes
MPI2	Forest administration	Pljevlja	16/03/2016	No
MPI3	Tourism agency	Pljevlja	16/03/2016	No
Salers				
MSC1	Sales channels	Pljevlja	14/03/2016	Yes
MSC2	Sales channels	Pljevlja	14/03/2016	Yes
MSC3	Sales channels	Pljevlja	14/03/2016	Yes
MSC4	Sales channels	Pljevlja	16/03/2016	No
MSC5	Sales channels	Pljevlja	16/03/2016	No
Traditional producers / farmers				
MTP1	Traditional Producer	Pljevlja	14/03/2016	Yes
MTP1.1	Traditional Producer	Pljevlja	14/03/2016	Yes
MTP2	Traditional Producer	Gotovusa	14/03/2016	Yes
MTP3	Traditional Producer	Srdenov Grob	14/03/2016	Yes
MTP4	Traditional Producer	Gotovusa	14/03/2016	Yes
MTP5	Traditional Producer	Boljanici	15/03/2016	Yes
MTP6	Traditional Producer	Tresnica	15/03/2016	Yes
MTP7	Traditional Producer	Premćani	15/03/2016	Yes
MTP8	Traditional Producer	Radosavac	15/03/2016	Yes
MTP9	Traditional Producer	Radevici	15/03/2016	Yes
MTP11	Traditional Producer	Dubocica	15/03/2016	Yes
MTP12	Traditional Producer	Pljevlja	15/03/2016	Yes
MTP13	Traditional Producer	Dragashi	16/03/2016	Yes
MTP14	Traditional Producer	Borova	16/03/2016	Yes
MTP15	Traditional Producer	Dragashi	16/03/2016	Yes
Researcher				
MU1	University	Pljevlja	15/03/2016	Yes
MU2	University	Pljevlja	16/03/2016	Yes
Others				
MMM1	Middle Man	Pljevlja	16/03/2016	Yes
MPA1	Producer Association	Pljevlja	14/03/2016	Yes

Annex 2 : Grid for interviews

1. QUESTION GRID FARMERS

First open question → Who you are ? Can you describe your job/activity to me ? What place does it have in your life ? What is your history ?

- Identification of producer
  - History of the producer,
  - History of the farm,
    - Change factors? How do you adapt to changes? (Impact of war, demographic decline)
  - Size of the farm → size of flock?
  - Household, # of people,
  - Who does what?
  - Sources of income,

- Their vision/understanding of the product
  - For you what defines sharri cheese?
    - (Relation to land, A territory, Race of animals, A process, A tradition, cow, sheep) NB: Don't specifically ask for these points, it is only to dig deeper is the answer is shallow
- Pastoral practices
  - Races
  - Pasture geography (NB: Differentiate between estive zone, cultivated zones for hay…, winter stabulation zone or winter pasture zone)
    - Where do you bring your animals? Draw on the map?
    - Do you need to go always further?
    - Changes in the plants the animals eat?
    - Change in the places where you bring animals?
    - Are the resources close to the village overused?
    - Property of pastureland? Rules of use? Period of use, quantity that you can use? Do you have to rent it? Is it expansive?
  - Management of hay? Where do you produce it? Is it enough or do you have to buy more? Machines for harvesting?
  - Leaf resources. Do you cut trees to maximize production?
  - Feeding of animals during winter? Extra alimentation? Produce it or buy it? If buy, origin?
  - Workforce (Family, people depending on the family, paid shepherds)
  - Relation of land with milk quality/feeding?

- Milk collection
  - Lactation curve
  - Where does the milking occur and how is the milk transported?
  - Workforce (Family, paid people)
  - Is it done with machines (milking and transportation)?
  - Quantity of milk produced?
  - What do you do with this milk? Reproduction and meat production?
  - How do you bring it to the processing facilities or to the place of milk selling? How long does it take?

- Production processes
  - Detailed and step-by-step production process, from the beginning, of the Sharri cheese
  - How many litters of milk for 1kg of Sharri cheese

- Workforce. Who make the cheese
- Equipment
- Quantity of cheese produced
- Evolution/changes of these processes over time

- Markets, sale habits
  - Other products (meat, unprocessed milk, whool…)
  - Clients?
  - Where do you sell (type of buyer and area) and to whom?
  - Prices
  - Change in your selling habits?

- Environment
  - Alimentation (cf Pastoral practices)
  - Wood use: to heat your homes, to build them, to enclose pastureland?
  - Interactions with wild animals
    - Problems with your animals? How do you manage the threat? Dogs? How you breed them?
    - Hunting? Yourself? People of the city?
  - Management of waste/water
    - What do you do with your wastes/waste water?
    - Impact on human and animal health
  - Constraints of the national park?

- Aid of state or international organisations?

- Vision of geographical indication
  - Have collective action forms been identified for each item of the grid?
  - Relation with other producers
    - Access to pasture,
    - For animal food production or to buy complements,
    - Regarding the cheese making process,
    - For selling your cheese)
  - What should be according to you the cahier des charges of an IG
  - Long-term vision, how do you see the future?

2. GRID FOR INSTITUTIONAL INTERVIEWS

Presentation	Range of activities Overview on the Agricultural sectors
Legal frame	Rural development programs Laws Thorny issues
Process / datas	Investigation and datas Informal trade Involvement of the farmers in the programs Incentives
Territory	Definition of the Sharr region Exodus
Profession	Organization and players of the profession
Vision of agriculture	EU standards Vision of the agriculture by 20 years
GI	Situation in Kosovo Awareness of the farmers Perception of the farmers
Ecology	Situation in Kosovo / priorities

3. GRID FOR INTERVIEWS WITH ENVIRONMENTAL playerS (only in Kosovo)

Presentation	Range of activities and researches General environmental issues
Scientific data production	Means to ensure data collection
Anthropic pressures	Threats Impact of pasture Other than pasture Evolution
Territory policies and SNP management	SNP creation General context

4. OBSERVATION GRID FOR SHOPS

Observation
Sharri cheese ?
Loocation (city-center, suburb, residential area,…)
Kind of shop (supermarket, small shop, specialized shop)
Name used, brands, logos (take pictures)
Origin and/or Quality signs ?
Tracability ? (production area, producer's name)
Composition (cow, sheep, mixed)
Additives
% fat
Weight
Packaging (bag, bottle, ...)
Sale price

Questions pour obtenir des informations supplémentaires

"Comment vous choisissez vos produits ?"

"Qu'est-ce qu'un fromage du Sharr exactement ? Qu'est-ce qu'un bon fromage du Sharr ?"

"Est-ce que c'est facile de s'approvisionner ?"

- Prix d'achat ? Prix de vente ? Les prix varient-ils dans l'année ?
- Quelles sont les conditions pour qu'un produit soit conforme à la vente dans votre magasin ?
- Qui sont les fournisseurs ?
- Comment est-ce que vous négociez avec vos fournisseurs ? Quels sont les sujets de négociation : quantité, prix, ... ? L'approvisionnement est-il saisonnier ?
- Avez-vous plusieurs zones d'approvisionnement ? La qualité est-elle liée à la zone ?
- Pouvez-nous nous donner un ordre de grandeur de la quantité vendue dans l'année ? La consommation du produit est-elle saisonnière ?
- Intégrez-vous des critères liés à l'environnement dans votre politique d'achat ?
- Quels sont les produits préférés des consommateurs ?
- Historique / Evolution : est-ce que ça fait longtemps qu'ils ont ces relations-là ? Changements / Vision dynamique

Annex 3 : Street consumption questionnary (Kosovo example)

What cheese represents Kosovo the best?

Do you know Sharri cheese?
YES □ NO □

What comes to your mind when you think about Sharri cheese?
Texture □ Saltiness □ Taste □

What makes it special?

What makes Sharri cheese different from other cheeses for you?

Where do you usually buy you Sharri cheese?

How often do you consume Sharri cheese?
Every week □ Every month □ Every year □

How often do you buy it?
Every week □ Every month □ Every year □

At what price do you usually buy it?

During what season?
Summer □ All year □ Other □

What quantity do you usually buy?

What form of product do you usually buy? (meule, bocal, …)

Do you know where it is produced?
YES □ NO □ IF YES: details?

Do you know how it is produced?
YES □ NO □ IF YES: details?

Do you prefer Sharri cheese made of sheep/cow/mixed milk?
Sheep □ Cow □ Mixed □

Why?

Has it changed recently?

And what do you buy?

Do you have a favorite brand?

H/F ?
Age
Are you from around here?
What do you do for a living?