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Deliverable 5.1.2 Structural and policy recommendations to accommodate the expansion of Pelagonia sheep farms

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ΓΕΩΤΕΧΝΙΚΟ ΕΠΙΜΕΛΗΤΗΡΙΟ ΕΛΛΑΔΑΣ

ДОЛНЕНИ

Key information

Authors of this Report	**C. Batzios[1], Alexandros Theodoridis[1], Athanasios Ragkos[2]** [1] *Aristotle University of Thessaloniki (AUTH)* [2] *Agricutlural Economics Research Institute – ELGO (RIAS)* *Correspondence: alextheod@vet.auth.gr*
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Abstract

In this report the relevant literature on Pelagonia but also pure-bred sheep as well as the agricultural policies in force have been reviewed in order to detect their positive and negative effects in the potential expansion of Pelagonia sheep in the cross-border area and to propose incentives and a development strategy. Information about the policies and the strategies required for the development of the sheep sector in the CBA have been collected through a primary survey on stakeholders and experts (farmers, cooperatives, researchers, state organizations etc) and analysed using the SWOT and stakeholder analysis frameworks. The report points out the opportunities of the sector and brings forward proposals and policy recommendations for the development of the Pelagonia sheep sector.

Contents

1. Introduction

Sheep farming is an important economic activity for the Cross-Border Area (CBA) - utilizing marginal areas and producing high-quality dairy and meat products - and Pelagonia sheep breed can play an important role in its development. The breed has important advantages, including high resistance to infectious diseases, adaptability to adverse soil and climatic conditions, relatively high prolificacy and scientific evidence that it produced high quality milk and meat. Nonetheless, these advantages are not fully valorized. As a result, despite its numerous advantages, Pelagonia sheep breed is currently in danger of extension, making this research necessary in order to study and understand the conditions under which it operates, its development potential, the strategies and the measures that may ensure the protection and the future of this breed.

Current economic conditions reveal several structural problems for the Greek sheep farming sector in general, which apply to a great extent also to the Pelagonia Sheep Production System (PSPS). Investments in machinery and buildings are not always effective and input prices are high, increasing production costs. Other factors relate to inadequate organization and mismanagement of sheep farms, the low educational level of farmers and the lack of training, information and expertise. Due to this profile, farmers are less receptive to novelties and are reluctant – or less capable – to adopt innovations. These facts result in low income for farmers and other related stakeholders, making it difficult for the sector to develop.

Thus, the objective in this report was to indicate the measures and the strategies that need to be taken to valorize the strengths of the sector and adoption of innovative practices that could make the sector more sustainable and profitable. For this reason, a SWOT analysis of the PSPS is presented here, as well as a set of policy recommendations to promote the system and resolve the issues hindering its development.

2. Methodological Approach

A SWOT analysis was implemented through the development of a general model for understanding and managing the environment in which the sheep sector operates. SWOT Analysis is a strategic planning tool that examines the **Strengths** and **Weaknesses** of the sector, **Opportunities** and **Threats** from the environment in which it operates. It is used to assess the current state of the sector, in order to make the right decisions and formulate future strategies. The SWOT Analysis is divided into two main parts: the analysis of the internal environment of the sector, which are the **Strengths** and **Weaknesses** points, and the analysis of the external environment of the sector which are the **Opportunities** and **Threats**.

Data and relevant information for the SWOT analysis were obtained from a literature review, papers, articles, studies as well as from personal interviews/ discussions with stakeholders and experts from Governmental organizations, sheep farmers, practitioners, veterinarians, members of the PAPESHE team, processors, traders and actors in supply chains.

2.1 SWOT analysis

The objective of the analysis is a) to identify the measures and strategies that need to be taken to ensure the strengths that distinguish the Pelagonia sheep production system **(PSPS)** from others, b) to correct or overcome the causes of the weaknesses of the current operation, c) to identify what needs to be done to make the best use of the opportunities and d) to avoid future threats with the appropriate steps.

SWOT Analysis is divided into two main parts. The first part is related to the internal environment of the PSPS and farms, which are the Strengths and Weaknesses, and the second one is related to external environment – factors that are not under the control of the PSPS - which are the Opportunities and Threats.

Strengths	***Weaknesses***

• Adaptability to local soil and climate conditions and integration to local landscapes.
• Lower needs for fixed capital.
• More lactation periods per ewe (higher longevity).
• Production of high quality and added value products (meat and milk).
• Multifactional production systems → multiple roles (social, economic, environmental, cultural) beyond the production of market goods.
• Better behavior in uncertain environments (Resilience).
	• Small volume of production (e.g. low milk yield).
	• Small average size of farms.
	• Lack of modern equipment and modernization of farm infrastructure
	• Uncontrolled mating with improved breeds.
	• Lack of collective actions.
	• The characteristics of Human resources:
	  ○ Old with low educational level.
	  ○ Lack of management skills.
	  ○ Lack of marketing skills.

Opportunities	***Threats***
• The rapid growth of Information and Communication Technologies (ICT) has provided new tools and opportunities for farms. • The Common Agricultural Policy (CAP) → Payments for rearing rare local breeds. • The growth and development of niche markets. • European associations (such as the European Association for Animal Production (EAAP)) encourage the use of breeds that are in danger. • Lack of sheep that are well adapted to local conditions → additional income for local sheep farmers.	• Intensification of sheep and goat sector. • Massive import of sheep milk from other countries (e.g. Romania, Bulgaria, Italy, etc.). • Other profitable economic activities (alternative energy sources, intensive crop production, tourism industry, etc.). • Private consultants encourage the expansion of improved breeds. • The lack of attention, interest and funds for genetic improvement of local breeds in Greece. • Covid-19 pandemic → uncertain environment. • Inadequate infrastructure (e.g. roads, accessible and productive rangelands). • Lack of knowledge about local breeds real values → underestimation.

Strengths

- Pelagonia sheep breed is **better adapted to local soil and climate conditions and are integrated to local landscapes.** Due to this feature its production system have a) lower purchased inputs, as the nutritional needs of animals are partially covered by grazing (adaptability to grazing) and b) exhibit higher resistance to disease, which results in reduction of veterinary cost.

- Apart from lower needs from variable capital, production systems that rear Pelagonia sheep breeds have **limited dependence from fixed capital endowments** (buildings and machinery), which reduces the production cost (e.g., reduced depreciation, maintenance, and insurance expenses, etc.) and at the same time render them more flexible.

- **High longevity** of Pelagonia sheep is a trait of high economic importance as positively affect the profitability and consequently the viability of its production systems. In particular, high longevity decreases culling rates and female replacement costs and increases the production of lambs and milk yield as there are more lactation periods per ewe.

- It has been established in the literature that local breeds products (milk and meat) are endowed with nutrition characteristics (e.g., high fat and protein content), that are beneficial to human health, sensory properties (flavor, fragrance, etc.) and other specific characteristics such as clear origin, close relationship with the territory, safety, etc., that render distinguishable from non-native breeds products. These peculiarities add high value to these products and therefore provide the basis for further promotion and expansion in the market.

- Pelagonia sheep breed is endowed with **significant multifunctional characteristics** which include environmental (e.g., landscape and biodiversity

management), cultural (e.g., maintenance of cultural heritage), and socioeconomic roles (e.g., keeping rural areas alive and inhabited, reducing poverty, etc.). Therefore, this breed can formulate a multifunctional production system in the marginal areas of Greece.

- PSPS as others production systems that rear local breeds, has been proven **more resilience in volatile conditions**, (e.g. economic crisis, COVID-19 pandemic) than those who rare improved foreign breeds, due to lower needs for fixed and variable capitals.

Weaknesses

- **Small volumes of production, especially the low milk yield**, consist the biggest weakness of the PSPS, which negatively impact its sustainability. Small volumes of production entails high marginal costs, difficulties to maintain stable qualities and obstacles toward product standardization. This situation is further burdened by structural barriers such as the **small average size of the farms, the lack of modern equipment and modernization of farm infrastructure.**
- Genetic diversity of local farms animal breeds is threatened by the **uncontrolled crossbreeding**. Consequently, the loss of genetic material entails the loss of traditional farming and jeopardizes the viability of local production systems.
- Another weakness of local breeds production system, and of Pelagonia in particular, is the **absence of collective actions or organizations** that would act for the benefit of their members. Due to this lack, the bargaining power of the farmers is reduced as each farmer practically pursues its own interests alone.
- The characteristics of human resources engage in local production systems also consist a weakness, as the majority of local sheep farmers are **old with low**

educational level reluctant to modify farming practices and adopt innovations. Moreover, they have **limited management skills**, as they are not used to keeping records regarding the production process, which results in making wrong decision (e.g. administration of an unbalanced diet, uncontrolled mating, etc.). Also, they have **limited marketing skills**, which render them vulnerable to the changes of the external environment (e.g. declining milk and meat prices).

Opportunities

- **The rapid growth of ICT** has provided new tools and opportunities to local breed production systems and Pelagonia in particular, which can positively contribute to their productivity and economic growth. In what follows some of these tools are briefly presented.
    - ICT tools for data recording, which will assist in the implementation of reproduction strategy (e.g. controlled mating and choice of animals).
    - Internet and social media, which can be utilized in order to promote the benefits of local breeds and their products in the general public (low-cost promotion).
    - ICT platforms and applications that can positively contribute towards the education of the farmers (e-learning).
- PSPS can benefit from **payments and funding from both Pillars of the CAP**. In particular, Pillar I payments are allocated to farmers either in the form of income support or as coupled payments for sector of particular importance (e.g. sheep and goat farms, cattle for meat, etc.). Pillar II entails a long list of measures supporting rural development in general (e.g. generational renewal in the livestock farming sector, new investments in infrastructure, etc.). These measures are generic and do

not target the specificities of local sheep farms and systems, except for payments for endangered local breeds in Rural Development Programs (RDPs), the most recent being **sub-measures 10.2.1 and 10.2.2** of RDP 2014-2020. Nonetheless, there is a point of view that argues that these payments may isolate farms from markets and value chain opportunities.

- **The growth and development of niche markets**, where consumers are particularly aware for food quality, safety and origin, creates opportunities for local breeds products as these markets are not price competitive.
- **European associations** (such as the EAAP) encourage the use of breeds that are in danger by improving the knowledge and the dissemination of research results of domestic animals farming.
- Farmers have **limited access to animals that are well adapted to local conditions**, and therefore local sheep production systems can benefit from this situation as the can engage in breeding sheep sales, securing an extra income.

Threats

- The economic growth process in the livestock sector of most European Union, including Greece, was characterized by **a transition from extensive labor-intensive to modern capital-intensive systems.** Modern large farms adopted novel technologies and an entrepreneurial organization model and therefore required improved animals for intensive management and increased milk productivity. For all these reasons, local breeds are gradually substituted by foreign improved breeds (e.g., Lacaune, Friesland, Asaaf, Awassi and other breeds).

- **Massive imports of sheep milk** from other countries (e.g. Romania, Bulgaria, Italy, etc.) creates intense competition for local production systems, as it reduces the price of milk to a point where it is very difficult for them to be sustainable.
- PSPS faces **intense competition from other profitable economic activities**, such as alternative energy sources in the rangeland they use (e.g., PV systems and wind generators), intensive crop production or tourism industry, that either oblige farmers to intensify, replacing local breeds with improved ones, or to abandon livestock in order to engage in another more profitable sector.
- **Covid-19 pandemic** indicate an ominous economic environment (uncertainty in food production, volatility of farms income), which puts additional pressure in the operation of the primary sector. Under this pressure, farmers are discouraged for making new investments, which potentially leads to lower levels of farm operation, decreased productivity, and efficiency losses.
- Companies often supported intensive production systems that require improved genetic materials at the expenses of genetic diversity. In this context, **private consultants** in rural areas often favored the expansion of improved breeds over local ones.
- **The lack of attention, interest and funds for genetic improvement of local breeds** in Greece has also contributed to underestimation of the multifunctional character of local sheep production systems. This situation is further burdened as the few breeding programs, which are currently operate, focus on small number of primary traits (e.g., dairy production, prolificacy), thus increasing the demand for breeds witch such characteristics shifting the interest from local breeds.

- **Inadequate infrastructure** (e.g., roads, accessible and productive rangelands) burden PSPS with significant transportation cost, thus negatively affecting its economic performance.
- **The lack of knowledge concerning the multiple societal, economic, and environmental contribution of the PSPS,** and local sheep production systems in general, is also a reason that contribute to their underestimation, favoring the expansion of foreign improved breeds, which are not adapted to local condition or suitable to semi extensive production systems.

3. Policy Recommendations

Regardless of the production system, sheep farms in the country operate with net losses, which is due to the relatively low revenues (income) in combination with high production costs (expenses). Necessary interventions to improve the economic performance of Pelagonia sheep farms should focus both on improving revenues and on controlling costs. The SWOT analysis - through the development of a general model for understanding and managing the environment in which the PSFS operates - has revealed information on which strategies and measures should be based. These strategies have been grouped in four domains: ”Environment and Genetic Resources”, “Farm Management Innovations, Best Practices and ICT Solutions“, ”Productivity and Sustainability” and ”Product Processing and Supply Chain”.

3.1 Environment and Genetic Resources

- Conservation and correct management of genetic resources is a priority.

- In order to enable the effective implementation of genetic and reproductive innovations, well-organized, long-term collaboration should be promoted.
- The Pelagonia breed should be supported and promoted; any relevant policies should be contextualised for the cross-border area (CBA).
- Involvement of government, farmers, associations and scientists/practitioners must be direct and equal in order to promote PSPS.
- Time and effort need to be spent to assess the performance of the new breeds imported in the cross-border area in their new environment relative to Pelagonia breed
- Support of research and other related work for the effective improvement of genetic resources should be continuous.
- Research in technical key issues is necessary for sustainable PSPS.
- Subsidies should also have an environmental and welfare orientation, based on production related figures– money should equally be directed to educating farmers and supporting the use of local breeds.

3.2 Farm Management Innovations, Best Practices and ICT Solutions

- Adoption of the best practices, new technologies and innovations will improve the resilience and sustainability of PSPS and mitigate dependence on public support and direct payment schemes.
- Feeding and breeding practices, appropriate reproduction techniques, web applications and gadgets, and product marketing strategies constitute management and production practices that help farmers utilise efficiently the available resources and the existing production technology.
- Innovation strategies for PSPS should be adjusted to region and system-specific features. Implementation of a wider territorial strategy contributing to the

development of innovative activities would contribute to a more balanced allocation of resources and benefits among stakeholders in the sheep supply chain.

- Local fairs and new marketing campaigns will target to make society aware of the environmental and social services of the PSPS.
- Training, information and extension: farmers should interact more with informed and skilled practitioners from different backgrounds (animal scientists, veterinarians, economists, product quality experts etc) in order to increase knowledge and improve expertise. Regional organisations to oversee the implementation of such programmes, strong networks, determined farmers and reliable funding sources are required.
- Management of flocks could be very much improved with data collection and use by the farmers. Adopting innovative solutions adapted to the needs of the 21st century workers/enterprises, will improve farmers productivity.
- It is crucial that farmers follow suggestions by veterinarians and adopt innovations to improve health and welfare in PSPS.
- Barriers to innovation are small size of farms, low education level and mistrust to changes, and the very weak organisation of the sector.

3.3 Productivity and Sustainability

- Subsidies using the current regime did not help towards increasing productivity or overall sustainability. Therefore, restructuring and targeted redesign are required.
- Reproduction management, animal grouping, precision nutrition, preventive veterinary medicine to reduce disease and mortality of lambs will assist the PSPS to increase its potential.
- Policies towards diversification to a broad variety of final products (milk, meat, cheese) will reduce market risks and increase sustainability.

- Design of appropriate land uses to support the resilience of extensive grazing-based systems.
- Better utilization of natural rangelands to support the extensive character of PSPS and ensure high quality milk and meat.
- The specificities of PSPS will need to be embedded in regional and national policy measures.
- The development of PSPSP should consider broader goals and challenges to societal sustainability, including social wellbeing, economic resilience, ecology and governance.
- Effective ration design, specially adapted to the needs and peculiarities of the Pelagonia breed, for periods when natural vegetation cannot be the only source of food (e.g. winter).
- Cooperation with all actors upstream and downstream the supply chain: cheese makers and retailers, input suppliers, restaurants and tourism-related actors etc.
- Transfer of scientific knowledge into the production systems through the active participatory involvement of farmers.
- Since PSPS provide numerous ecosystem services as well as services and goods which are not remunerated in markets they should be supported for these provisions through targeted and dedicated policy measures (adapted to local conditions)
- Farmers' beliefs that the sector will not be viable if the government decides to cut down on subsidies must be overcome towards a more dynamic and independent PSPS
- Improvement of the social acceptability/image of the systems rearing local breeds (in general) and of PSPS in particular is necessary. Increased public awareness is required regarding the actual conditions in the sector and f the goods and services attributable to it.

3.4 Product Processing and Supply Chain

- Balanced relationships between value chain actors and a strong vertical value chain integration are required not only for PSPS but for sheep and goat production in the CBA in general.
- New packaging and cuts, development of quality labels and traceability systems in the cross-border area should be prioritized.
- Consumer preferences for milk and meat products – especially with regards to quality and origin – should be taken into account, especially of market niches.
- Long-term design and projection should be delivered for the PSPS in the CBA in order to inform the managerial decisions of farmers.
- Generational renewal is imperative for the sector.
- Value chains must be adapted to markets.
- Consumer and marketing studies are very interesting in a context of reduction of consumption and changing patterns.
- Tackling of unfair trading practices and fair and/or premium pricing of high-quality milk in order to improve the overall organisation and performance of PSPS.

More information about the project

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