The Role of ICT in the Expansion of Pelagonia Sheep - Abstract

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Summary

Sheep farming is one of the most important livestock sectors utilizing marginal areas and producing high-quality dairy and meat products. Lately, there is an increasing tendency for added value, traditional sheep products from local breeds, due to their high nutritional value and special taste. Pelagonia sheep breed, which is currently in danger of extension, is reared mainly in West Macedonia, Greece. Pelagonia sheep, which are high resistant to infectious diseases, adverse soil and climatic conditions, produce high-quality products and have relatively high prolificacy rate, characteristics that show breed's improvement potential. Nonetheless, their advantages are not fully valorized.

The Greek sheep farming sector has several structural problems in adapting to current economic conditions; low investments in machinery and buildings and high input prices that increase production costs, result to low income making it difficult for the sector to develop. Inadequate organization and mismanagement of sheep farms, low educational level of breeders and lack of training, information and expertise are significant problems that are an obstacle to the sector's development. Farmers are mainly old, with limited skills and knowledge and are reluctant to modify farming practices, there is lack of innovation culture across farmer communities and low farmer investment capacity.

These constraints indicate the need for adoption of innovative solutions, ICT and application of smart technologies on sheep farming. Thus, the objective in this study was to indicate the measures that need to be taken to utilize the strengths of the sector and to identify ICT tools and innovative practices that could make the sector more sustainable and profitable. Data and relative information were obtained from a literature review on the use of ICT on livestock sector and personal interviews of sector's stakeholders. A SWOT analysis was implemented through the development of a general model for understanding and managing the environment in which the sheep sector operates.

At farm level, the survey and the analysis of the feedback received from sector's experts indicated the use of technologies to control factors such as soil-climate and animal temperatures, could contribute positively to grazing and animal health, as well as tracking devices for controlling animals during grazing. The installation of ventilation and heating systems combined with the modernization of the facilities, would significantly improve the living conditions for animals' welfare. Additionally,

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using automation equipment machinery could contribute positively, while using Renewable Energy Sources would drastically reduce maintenance and production costs. The use of smart portable devices that record and analyze farm data contribute to a more efficient management of sheep farms. In manufacturing, the use of processing, sorting, maintenance and control machinery could be a reliable solution to increase the added value of the products. Moreover, consumers are now interested in food information, transparency and traceability and food quality control systems and modern packaging support product quality and rebuild consumer trust.

The adoption of ICT could help in the optimal utilization of resources to ensure higher animal welfare and to improve milk and meat production. The inflow of funds should be utilized in the adoption of innovative practices and smart technologies in Pelagonia sheep breeding, but also in the processing of the products, maximizing their added value. Equally important and necessary condition for the above is the relevant training of sheep breeders with ICT tools, as well as the continuous support of experts supervising the implementation of new technologies.

Keywords: ICT; Sheep; breeders; livestock.

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