Innovation for Sustainable Sheep and Goat Production in Europe

iSAGE Newsletter

Winter 2019/2020

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Welcome to the fourth Newsletter of iSAGE. The project has now been running for four years and lots of exciting results have been obtained through a participatory approach involving sheep and goat farmers, cooperatives and companies across supply chains. This newsletter highlights two main areas of activity: (1) the final conference where key outcomes will be presented and discusses because iSAGE is building linkage to major stakeholders with a role in the sheep and goat sector in Europe and (2) best practices and innovative solutions introduced in sheep and goat systems. Much emphasis is given to sheep meat supply chain to identify obstacles and opportunities. Another key topic is findings and recommendations from innovation case studies. Finally, the extremely important work on the development of a model-driven, decision support tool to support farmers and their consultants in sustainable management of meat and dairy small ruminant systems is presented. Finally, congratulations to Agustin Del Prado (BC3) and colleagues for creating an excellent video about "The role of ruminants on climate change" https://youtu.be/NbO4EEaH7YM, as well as Georgios Banos (SRUC) and colleagues for their "Weatherproof sheep" https://cordis.europa.eu/article/id/411735-weatherproof-sheep-how-to-enhance-animal-resilience-to-climate-change.

Georgios Arsenos, Project coordinator

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iSAGE Final Conference

Opportunities to improve the profitability and sustainability of the sheep and goat sector.

Crowne Plaza Hotel, Rue Gineste, 3 – 1210 Brussels.

Wednesday, 26 February 2020, 09.30 to 16.30h

The meeting will be of interest to farmer and processor organisations, government and non-governmental bodies and international organisations with a role in the sheep and goat sector. The aim is to discuss implementation strategies for ISAGE project outputs and to provide recommendations at the European scale of future needs to improve the competitiveness and sustainability of sheep and goat systems.

Key messages

- Can the sheep and goat sector exist without subsidy? A new paradigm for the industry in Europe
- iSAGE Pubic Good Tool highlights sustainability scores in the sheep and goat sector
- Organic labels, national origin and PDO drive consumer willingness-to-pay more for sheep & goat products.
- Small ruminant systems in Europe and Turkey have not caused additional warming to the atmosphere in the last decades -need to separate methane from long-lived GHG emissions.
- Industry inspired innovations will increase the resilience and the sustainability of the sheep and goat sector.
- Novel breeding strategies will enhance resilience of animal performance in a changing climate.

There is no registration fee. Register now to ensure a place. For details on the programme and registration, go to https://www.isage.eu/isage-final-conference/

Best practices in the lamb meat supply chain: evidence from 10 case studies

Stefano Orsini (Organic Research Centre, UK)

The lamb meat supply chain faces a number of challenges. Carcase imbalance is certainly an important one, as it is for the other meat sectors as well. Additionally, the lamb sector is characterised by price fluctuations, unpredictable demand and supply volatility, which bring uncertainty. Ten case studies were conducted across the seven iSAGE countries to identify practices improving the performance of the sector at supply chain level.
The following general recommendations can be drawn from the study:

- Working relationships between downstream and upstream supply chain members are crucial to identify quality specifications of lamb, to develop and market a range of products (including new meat cuts) that optimise the use of that specification and reduce waste. Providing feedback on carcase quality is clearly an essential step to achieve these goals
- Supply chain integration is required to implement a thorough traceability system, based on high precision (up to the individual cut level), depth (up to the retail level) and breadth (amount of information that can be recorded) of information
- A mixed approach based on selling through different market routes and product innovation is recommended to handle carcase imbalance and improve supply chain resilience in the volatile market context
- A truly 'lean' supply chain based solely on demand forecasts is difficult to achieve due to the long time that the lamb remains on farm, nor is it really desirable given the unpredictable market environment. Rather, a more market sensitive, mixed approach based on both planning and real-time adjustments is to be preferred, which takes into account different customers' needs and the seasonality of the product
- Adding value initiatives including marketing and branding require strategic sourcing to ensure lamb meat supply consistency
- Progresses towards sustainability can be made also in the commodity production landscape where big supermarkets are the focal firm. This can be achieved through long-term contracts between multiples and producers, and if such contracts entail the establishment of key learning points (e.g. feedback on carcase quality, collection of cost

of production data), if there is an effort to improving product quality (e.g. through assurance schemes) and if they are targeted at specific producer groups (e.g. young farmers).

Findings and recommendation from innovation case studies

Daniel Martin-Collado and Mariana Cardoso Vogg (Agrifood Research and Technology Centre of Aragon (CITA))

Sheep and goat farming systems are usually considered to be less innovative specially compared to dairy cows, beef, pig, and poultry farming systems. Indeed, slow adoption of innovation has been identified in iSAGE as one of the key challenges that the sector faces concerning its sustainability. However, this situation is changing and the EU sheep and goat farming sector, through farmer, breeders and breed associations, cooperatives, universities, research centres and individual farmers, are developing, testing and implementing multiple innovation actions and processes. Innovations in the sector are not only focusing on breeding, reproduction, agronomical, biotechnological and IT technologies, but also on marketing processes, organizational methods, business practices and farmer training programmes.

To address these issues, iSAGE has implemented 31 innovation case studies through industry-research partnerships aiming to identify and test innovative solutions for the sector sustainability. Specific findings of each case study can be found in iSAGE website. https://www.isage.eu/innovation-leaflets/

Globally, the iSAGE experience indicated that the main challenge to boost innovation, is not the creation of new knowledge, tools, methods and/or practices, which generally are well-developed and ready available to be implemented, but the socioeconomic and structural constrains that prevent innovation uptake on farm.

Socioeconomic constrains relate to the lack of innovation culture across farmer communities and to the low farmer investment capacity. The ageing of farmer populations, the rural area depopulation trends and the consequent fragmentation of rural and farmer communities further compound the situation, especially in less favoured areas and extensive farming systems.

At the structural level, the iSAGE experience has shown that strong and well-organized long-term farmer collaboration is required for most innovation to be successfully implemented. If farmer collaboration is lacking or is deficient, attempts to implement these innovations will most likely be inefficient. The role of farmers' institutions (e.g. farmers levy organizations,

breeds and breeders Associations, cooperatives etc.) is the key to facilitate, regulate and manage such collaboration.

Within the sector, the existing relations and interactions between value chain actors reduce sector's competitiveness in international markets, but also in relation to other livestock species and to non-livestock food products. A strong vertical sheep and goat value chain integration in inter-branch organizations or any other organizational form will likely facilitate innovations in products development and marketing, which are required in order to face the social demands (e.g. environmental and animal welfare issues) and meet the new consumption habits (e.g. healthy diets, easy to prepare food).

The iSAGE decision support system (iSAGEDSS)

Sotiria Vouraki, Alexandros Theodoridis and Georgios Arsenos (Aristotle University of Thessaloniki, Greece)

The European sheep and goat sector is characterised by high production costs and low revenues. There is no established farm management methodology and farmers rely on public subsidies to remain financially sustainable. Moreover, there is an extremely low level of innovation and adaptation of technology. Taking into consideration the issues above, iSAGE developed a decision support tool that will optimise sheep and goat production.

The iSAGE decision support system, iSAGEDSS (www.isage-dss.eu), is a model-driven, web application for sustainable meat and dairy small ruminant farming. It provides action plans for farm management through simulations of future what-if scenarios. The users input data regarding all important farm aspects (such as flock size, production, feeding, grazing, income and costs) and with the use of an energy and protein based algorithm they are provided with reports that are focused on profitability and productivity. Farm income, variable costs and gross margin are estimated taking into account production estimates such as live weight and carcass weight of finishing lambs and milk production of lactating animals based on their nutritional management (Figure 1). Moreover, the iSAGEDSS provides comprehensible charts of income and cost analyses as well as feed costs and variable costs per animal category. Pasture availability at the end of the year and stocking rate are also estimated.

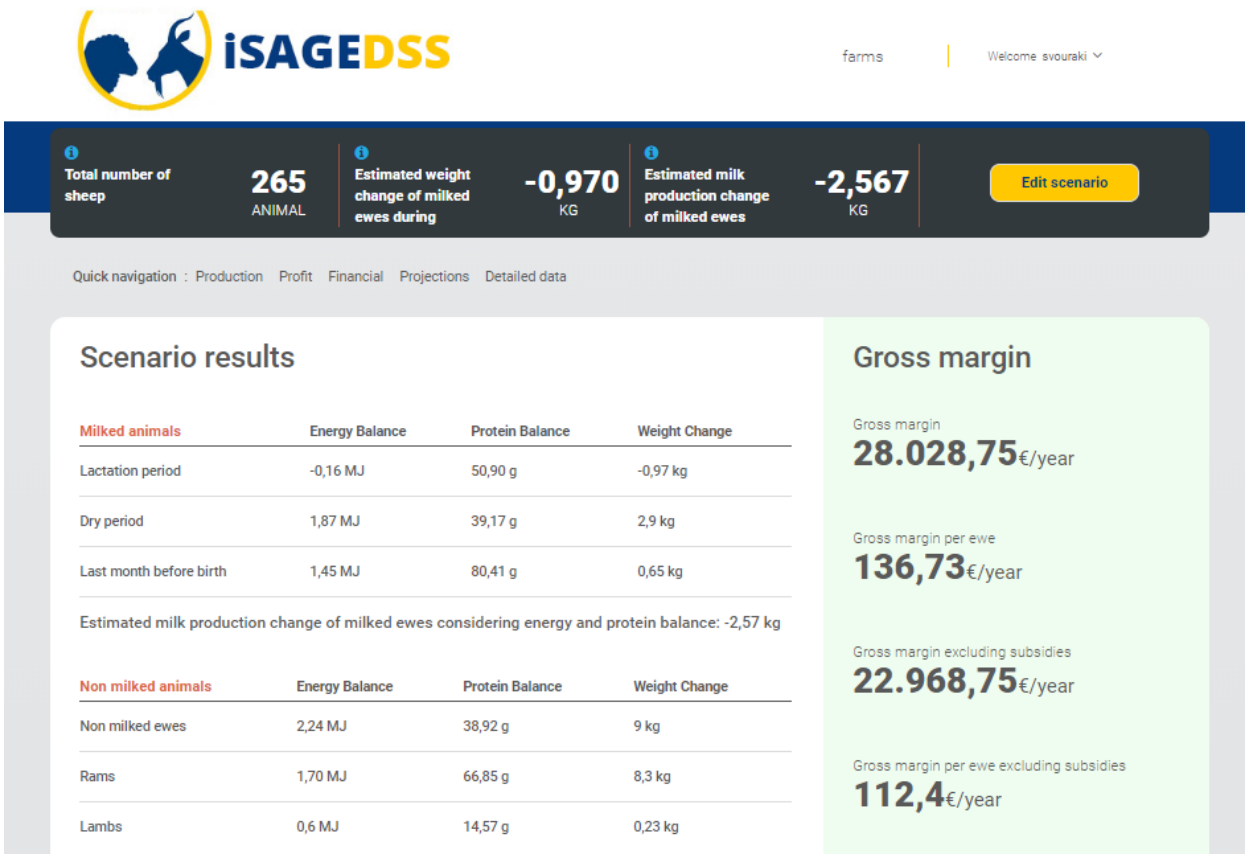

Figure 1. Section of the iSAGEDSS report page.

Overall, farmers benefit through tighter control over revenues and expenses and ability to plan for increased productivity and profitability with similar or lower costs, elimination of dependence on public subsidies and ecological awareness. In this regard, iSAGEDSS is expected to help farmers respond better to the challenges faced by the sector and remain sustainable.

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