



# Innovation for Sustainable Sheep and Goat Production in Europe

## iSAGE Newsletter Issue n. 1



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# Summary

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Welcome to the first edition of iSAGE newsletter! This newsletter describes activities during the first year of the Horizon 2000 funded iSAGE project. iSAGE aims to enhance the sustainability, competitiveness and resilience of the European Sheep and Goat sectors through collaboration between industry and research. We are investigating the sheep and goat sector because it is sensitive to general socio-economic, demographic, and ecological and market challenges.

iSAGE has a diverse team of 34 partners involving research institutes, industry partners, international and governmental organizations from 6 EU countries and Turkey. These partners represent diverse EU production systems and socio-economic contexts. At the core of iSAGE is a participatory approach centred on a multi-actor internal and external communication from the farmer level. This approach will ensure relevant issues are addressed and our outcomes are applicable in practice. iSAGE, together with stakeholders and end-users, will draft a roadmap for further research and policy. We will keep you informed about activities through newsletters and our project website ([www.isage.eu](http://www.isage.eu)) where details about events and workshops and deliverables will be available.

We welcome communication with anyone that is interested in iSAGE or has ideas that could be incorporated in our dissemination plans.

Georgios Arsenos

iSAGE Coordinator



# Holistic Sustainability Assessment

## Defining the system typologies of European sheep and goat sector

We have developed a new common typology for sheep and goat farming production systems so that work in iSAGE will be representative of sheep and goat systems in Europe. The process was based on a literature review of typological surveys in Europe, on data collected through an online survey of the iSAGE industry partners and was agreed with the industry partners. The following typologies are considered representative of existing sheep and goat farms in EU and Turkey.

- Intensive dairy farms (e.g. high input of purchased feedstuff)
- Semi-intensive or extensive dairy farms (e.g. normally pasture fed animals)
- Intensive meat farms (e.g. high input of purchased feedstuff)
- Semi-intensive or extensive meat farms (e.g. normally pasture fed animals)
- Dual-purpose farms (the farmer sees value in 2 or more different products e.g. meat and wool, meat and dairy)

These farms types also incorporate organic, PDO, PGI, pluri-active farms, cheese making farms or breed specific farms. In addition, these types not only vary in the adoption of innovations, but also as to their needs in terms of specific types of innovation. For more details please refer [here](#).



## Identifying, developing and selecting indicators and tools for sustainability assessments

We have identified the most important indicators for assessing the sustainability of sheep and goat production systems. These indicators covered key aspects related to economic resilience,

environmental, good governance and social wellbeing. The indicators, which comply with FAO's Sustainability Assessment of Food and Agriculture Systems guidelines, were incorporated into the most appropriate sustainability tool (i.e. the Public Goods (PG) Tool ). The PG tool was specifically developed to assess the sustainability of livestock farms but it was further adapted to provide a rapid yet comprehensive framework for assessing the sustainability of the sheep and goat sector. For more details please refer [here](#).

## Socio-economics, demographics and consumer trends

### First steps on consumer research and farmer surveys

A qualitative survey was undertaken to gain a better understanding the interaction between socio-economic, environmental and policy issues related to the sheep and goat sector. Thirty-eight farmers have been interviewed in 7 countries across a range of typologies. Weaknesses of systems were identified as high labour requirements, low farmer marketing knowledge/skills, predators, land scarcity for development, high production costs (intensive farms). Threats were mentioned were:

- Lack of generational turnover (succession),
- Decrease in lamb meat consumption,
- Campaigns and misconceptions from the public,
- Decrease in farm subsidies,
- Climate change (for some farmers).



Farmers see most opportunities in the dairy sector or dual purpose (especially if wool can be better valorised), and via alternative food chains labelling (organic, PDO/PGI). Genetic improvement and better training and extension are also seen as very relevant for the sector's resilience.

In the same 7 countries, 285 consumers were interviewed by means of focus groups. Preliminary results show that in most countries, ewe/goat cheese is seen as a "special meal" suitable for special occasions and not for daily consumption, while other dairy products (milk, yogurt) have minimal awareness/consumption. For meat, most consumers prefer to consume lamb meat than other sheep/goat cuts, while only a few buy whole or half lamb (usually from the producer) mostly for freezing. Both types are only occasionally consumed in all countries, again in traditional and/or special occasions. There is a low product knowledge of both dairy and meat products, especially among the young, while all types of meats are perceived as not-easy-to-prepare and cook.

However, goat/sheep products (both meat and dairy) are perceived as more natural, genuine and healthy than other dairy (e.g. cow-milk) and meat (e.g. chicken) products. Among the reasons for this, there is a general "free range" perception among consumers, that associate all these products to extensive farming.

## Climate change assessment

### Reviewing existing information on projects and literature on climate change and small ruminants

We have carried out a literature review to shed light on the main impacts of climate change on small ruminant production systems in Europe and to determine which specific adaptation measures can be implemented to cope with those climate change impacts.

We can anticipate that impacts will be very unequal amongst different bio-climatic regions, countries and production systems. The Mediterranean region, for example, with high populations of small ruminants, will become drier and warmer and will have its carrying capacity of grassland-based systems limited. Northern regions, on the other hand, are expected to have an increase in biomass production potential and longer growing seasons resulting in a net increase in feed and forage supply for small ruminant systems. The successful implementation of adaptation measures (e.g.: changes in stocking densities, multi-species swards, animal and plant breeding, alternative forage and by-products feeding) will be, in most cases, modulated by future socio-economic scenarios. We intend to produce different modelling approaches that can help us simulate the effect of changing weather conditions on forage and animal productivity (e.g. due to heat stress). Such modelling approaches will be integrated into a farm-scale model to help decision making. Further information can be found [here](#).

## Improving Farms

### Innovations important to farmers

Industry, farmers and research partners have identified new practices that are most likely to improve sheep and goat farms. These innovations will be tested in 35 case studies to assess the benefits in terms of livelihoods of farmers, animal welfare and the environment. Further information can be found [here](#).



### Case studies to improve farms

Aspects of feeding and forages, pasture management, products and marketing and animal handling technologies will be tested. A novel case study will assess the benefits of the UK Ambassador Program that trains young farmers. Previous participants will be interviewed to find out how other countries can benefit from similar programs.

Some innovations will be examined widely across a range of typologies, particularly how genomic selection can improve breeding of sheep and goats. Partners will use data from farms and conduct interviews to find out find practical ways to implement genomic selection on farms. The lack of

recording is a barrier to improvement in most sheep and goat enterprises. A number of robust easy-to-use recording systems will be tested across countries.

### **Who has an efficient farm?**

We have started to analyse how efficiently farmers use their inputs to make money using past data recorded by the industry partners. Our first results show that efficient farms have fewer animals per farm and produce more milk, meat and feed and use less labour per ewe.

## **Innovative system solutions – Managing sheep and goat resources**

### **Phenotypic resources**

Phenotypic data of individual animals are being matched with meteorological data from the respective national services to be jointly analysed to determine the association between animal productivity and climate. Partners have harmonised the procedures for conducting the said analyses. Experiments are also taking place to determine novel phenotypes for animal resilience and adaptability.



### **Genetic resources**

The consortium is genotyping 4,000 animals from five countries. Genotypes will then be jointly analysed with phenotypic and climate data to determine genomic regions affecting animal productivity, adaptability and resilience.

### **Case studies on local breeds**

These studies will assess the resilience, adaptability and utility of local sheep and goat breeds in current and future circumstances. At this stage, farms representing about 10 local breeds in five countries are being identified and evaluated.