



Innovation for Sustainable  
Sheep and Goat  
Production in Europe

**iSAGE Newsletter**  
Winter 2018/2019



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Welcome to the 2018/2019 winter edition of iSAGE newsletter! This newsletter concentrates on initiatives to improve the consumption of sheep and goat meat and our work on climate change impacts and sustainability.

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



## iSAGE at the Slow Food exhibition and events – Terra Madre

**Terra Madre** is the major event that **SLOWFOOD** organizes in Turin every two years, together with the international food exhibition “Salone del Gusto”. This was held at the Lingotto Exhibition Centre from 20 to 24 September 2018.

Terra Madre brings together those players in the food chain who together support sustainable agriculture, fishing, and breeding with the goal of preserving taste and biodiversity. This year the event was animated by stories, traditions and products of over 7000 delegates from 150 countries, that attracted over 200.000 visitors. This year’s motto was “**Food for Change**” with sustainability as the *fil rouge* of many events about agriculture, food and its territories.



iSAGE partners UNIVPM and ICEA organized a “taste workshop” on the “**Broгна sheep: from Lessinia the sheep that survived**”. Broгна is an ancient sheep breed from Lessinia mountains near Verona (Veneto region, Italy), with threefold aptitude (milk, meat, wool), that was recently revived by a local farmer association before it became extinct. Taste workshops (“Laboratori del Gusto”) are among the main showcase events in the TerraMadre programme, and are open to a

maximum of 35 people. The taste lab was organized in collaboration with chef **Giovanni Caltagirone**, who owns a restaurant in Lessinia and is a champion of the culinary use of Broгна sheep products. About 35 people from all over the world participated, including consumers, food bloggers, journalists, and chefs.



After a brief introduction of the iSAGE project by **Antonio Compagnoni** (ICEA) and the presentation of the Broгна sheep story by **Marcello Volanti** (ICEA/Broгна association), the chef **Giovanni Caltagirone**, demonstrated some innovative preparations that use all parts of sheep carcass without waste and hence added value for farmers: three dishes were prepared and offered to participants for sensory evaluation.

On the evening of September 21<sup>st</sup>, iSAGE partners organized a demonstration dinner in collaboration with one of the most traditional “osteria” of Turin, in the city centre: the Osteria Enoteca **Rabazzana**.



The theme of the dinner was “(o)vino”; a nice word in Italian, pun between wine (vino) and sheep (ovino). The 4-course fixed gourmet menu featured both sheep meat and cheese, and was created and prepared by two chefs: **Giuseppe Zizzo** of [Osteria Rabazzana](#) and **Giovanni Caltagirone** of the [Ristorante 13 Comuni](#) from Velo Veronese. The dinner was promoted via social media and gathered about 30 clients that enjoyed the special menu.

In this occasion UNIVPM organized a consumer experiment, providing two different menus, one with detailed information about the food offered regarding origin and sustainability; the other menu without that info. Results showed that participants tended to have higher expectations when reading the menu without the additional information on origin and sustainability.

However, after the meal, participants were willing to pay higher prices for the menu with detailed information. Given the small sample, the study will be replicated in other contexts to gather further evidence of the effect of sustainability dimensions on consumer liking and expectations.

## Strategies to improve lamb consumption

### Marketing strategies

iSAGE recently organised an Industry day in Birmingham. One of the main topics was initiatives to improve the consumption of lamb which has lost market share to other meats especially chicken and pork. **Matt Southam** of AHDB explained that the main barriers to purchase lamb are:

- Cost
- Cooking knowledge
- Fatty perception
- Lack of versatility



In particular, young consumers have little experience of lamb and this holds long term dangers. This generation (under 35) demand convenience and short preparation cooking time (less than 30 minutes). New strategies should target specifically the ‘millennial’ generation.

This should aim to increase versatility perceptions (for example new ‘cuts’)

- Communicate ease of cooking
- Overcome negative health perceptions
- Position mid-week meal occasions
- Appeal to younger consumers

This presentation was supported by a demonstration of carcass cutting techniques for lamb for the modern consumer by **Martin Eccles** of AHDB. Further information and courses can be found on <http://qsmbeefandlambmep.co.uk/?sector=butchers&module=lamb&level=1>

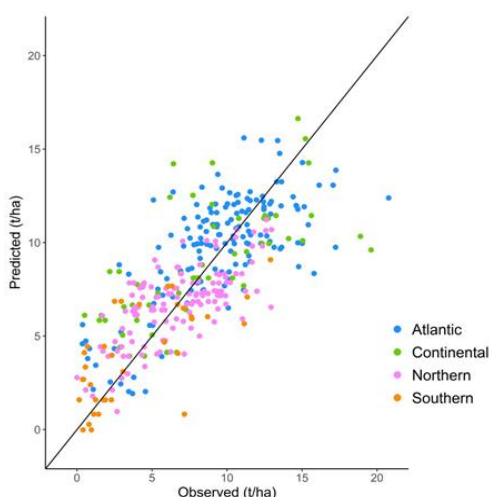
## The Halal Market

*Awal Fuseini* of AHDB explained that although Muslims represented about 5% of the UK population, they accounted for about 20% of the consumption of lamb. Importantly many of these consumers are young (48% are under 25 years of age). In addition, there is a large potential export market. Proportions of Muslims are higher in Bulgaria (14%) and France (10%). In this respect 35 to 40% of UK sheep meat is exported into the single market. There are also major world markets in N. Africa, the middle east and Asia. There are however animal welfare concerns about slaughter without pre-stunning. In the UK 25% of halal meat is not pre-stunned and this depends on the interpretation of the religious texts.

## Climate change assessment

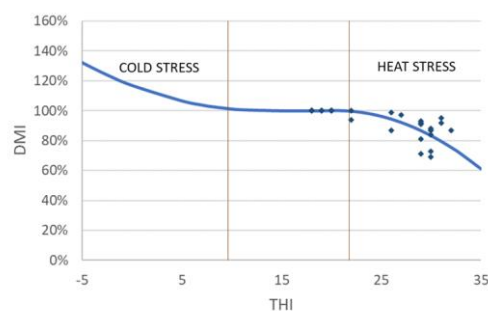
### Development and testing of meta-models on the effect of climatic conditions.

Three ways have been used to model how the yield and nitrogen (N) content of European grasslands are likely to change in the future. The first approach examined how different plant functional groups responded to artificial changes in atmospheric CO<sub>2</sub>, temperature and water availability in different geographic regions. Secondly, empirical models were developed relating climatic and grassland management variables and as a third approach, a dynamic model was applied to several sites around Europe. All three methodologies agreed that yields would increase in Alpine and northern regions. For the Atlantic region, yields may increase slightly or else stay the same (depending on fertiliser use). For the continental and southern regions, the results were less clear. This figure below shows predicted vs. observed results (dots) of assessing the effect of climatic conditions on temporary grassland dry matter production for different agroclimatic regions in Europe.



Temporary grasslands  
Correlation:  $0.76 \pm 0.006$   
RMSE:  $2.75 \pm 0.07$

For the animal side of the story, an energy balance approach is used as the basis to capture the potential consequences that heat and cold stress may have on productivity. The meta-model considers the direct effects on two main aspects: the energy requirements for maintenance and the decrease in feed intake and its effect on productivity. This figure below shows simulated (line) vs. measured results (dots) of assessing the effect of cold or heat stress (expressed as temperature humidity index-THI index) on dry matter intake by sheep (expressed as a % of expected dry matter intake).



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

A literature review was carried out 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.

It can be anticipated 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](#).

## Assessing sustainability across the sheep and goat sectors in Europe

The Organic Research Centre's (ORC) Public Goods (PG) tool has been used in Finland, France, Greece, Italy, Spain, Turkey and the United Kingdom to collect data on the Sheep and Goat industry. In all over 250 farm visits were made, generating a large database of information as to the sustainability of sheep and goat farms across Europe.

The PG tool provides an overview of a farm business's sustainability, incorporating Economic, Social, Environmental and Governance factors, identifying areas where performance is strong and areas where it is less so. These results can be visualised using Radar Diagrams, to quickly and easily interpret the initial results from the farm or across the industry. Within iSAGE we are looking at the 10 typologies, developed earlier in the project and designated according to the differences within the sheep and goat sectors:

<ul style="list-style-type: none"><li>• Sheep Meat Extensive</li><li>• Sheep Meat Intensive</li><li>• Sheep Dual Purpose</li><li>• Sheep Dairy Extensive</li><li>• Sheep Dairy Intensive</li></ul>	<ul style="list-style-type: none"><li>• Goat Meat Extensive</li><li>• Goat Meat Intensive</li><li>• Goat Dual Purpose</li><li>• Goat Dairy Extensive</li><li>• Goat Dairy Intensive</li></ul>
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The Radar Diagram provides an effective initial overview of the scores within each typology. Thirteen indicators are assessed for each farm, each indicator forms a 'spur' (as shown in the radar diagram below) and farm performance in each spur is ranked from 1-5. The radar diagram shows the average scores while expressing the range of the results for each spur. While these results provide an indication of sustainability performance, the data collected within the tool enables us to

use the raw data points from selected variables/factors to understand the main factors that influence the scores. During meetings with partners and stakeholders, variables of interest to the industry were identified. These will form the basis of further analyses and assessments, which will aid the industry to identify and address areas of concern and improve the sustainability of farm businesses.

—●— AVERAGE    —●— MINIMUM    —●— MAXIMUM

