



Innovation for Sustainable  
Sheep and Goat  
Production in Europe

# Aims of the iSAGE project and Workshop

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# The Consortium

- iSAGE deals with the **less developed** livestock sector in the EU
- iSAGE has **all the major players** in small ruminant sector

Approximately **16,000** sheep and goat farmers (**5.5** million sheep and goats)



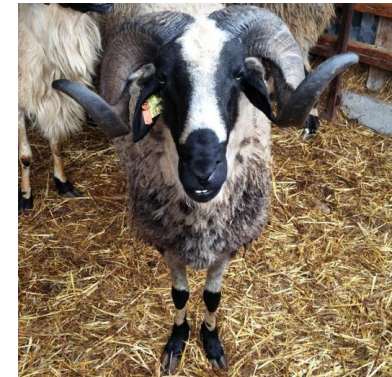
# iSAGE philosophy:



Farms



Farmer



Animal



Processors



Consumers

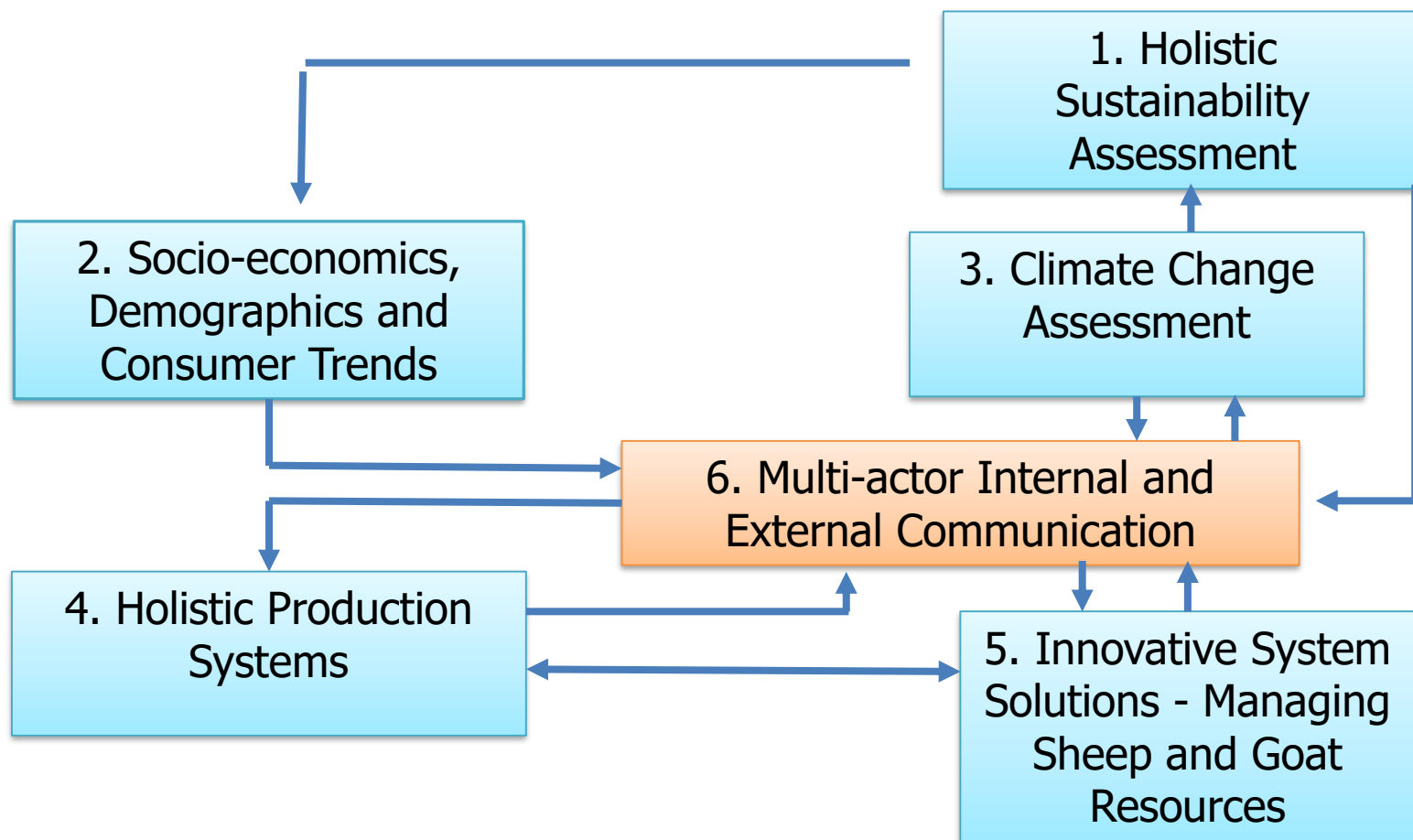


Policy makers

# iSAGE main aims:

- **To understand barriers** to innovation and sustainability
- **To define future opportunities** for a competitive sheep and goat sector
- **To develop farm management tools** and innovative breeding strategies
- **To develop solutions** for social, welfare and consumer issues
- **To Work** with industry to **inform, help** and **innovate**

# iSAGE working platform



# 1. Holistic Sustainability Assessment

- Sustainability assessments in sheep and goat farms across Europe were performed
- **206** datasets representing the **10 typologies** were analysed to infer the sustainability of each farm type - Radar diagrams were formulated
- **20 variables** were selected by iSAGE partners as **key sustainability indicators** under the overarching categories of Governance, Environment, Social and Economics
- Prototypes have been used to develop a toolbox of assessment tools and indicators that can be used in the future to assess the sustainability of sheep and goat production systems



## 2. Socio-economics, Demographics and Consumer Trends

- **225 farmer surveys** were performed along with sustainability assessments
- Results demonstrate the **low priority that farmers give to investment and innovations** as well as the fact that they overestimate their performance
- **453 questionnaires** for meat and dairy products consumers and non-consumers were analyzed.
- A **choice experiment questionnaire** was elaborated
- **Interviews** for a retailer survey have been finalized
- Three **case studies** per country are being carried out on selected supply chains

### 3. Climate Change Assessment

- **Summarized** scientific information on the impacts of climate change on small ruminant production systems in Europe and potential adaptation measures
- **New modelling methods** to promote sustainability and resilience to climate change,
- **Pasture productivity** statistical model



## 4. Holistic Production Systems

- **Identification and prioritization** of future challenges for the sector based on a multi-stakeholder approach
- Development of a **toolbox**
- Development and testing of a new **iSAGE farm model**
- Development and testing of **iSAGE-DSS**

## 5. Innovative System Solutions - Managing Sheep and Goat Resources

- **Derivation** of novel animal resilience and adaptability phenotypes based on joint analyses of milk records and weather variables
- **Estimation** of genetic parameters for animal resilience, adaptability and sustainability traits.
- Establishment of the first computational platform for the assessment of breeding strategies
- Data on the assessment of **local breeds** regarding animal resilience, adaptability and sustainability traits were collected

# **Livestock farming innovations are not just about technology**

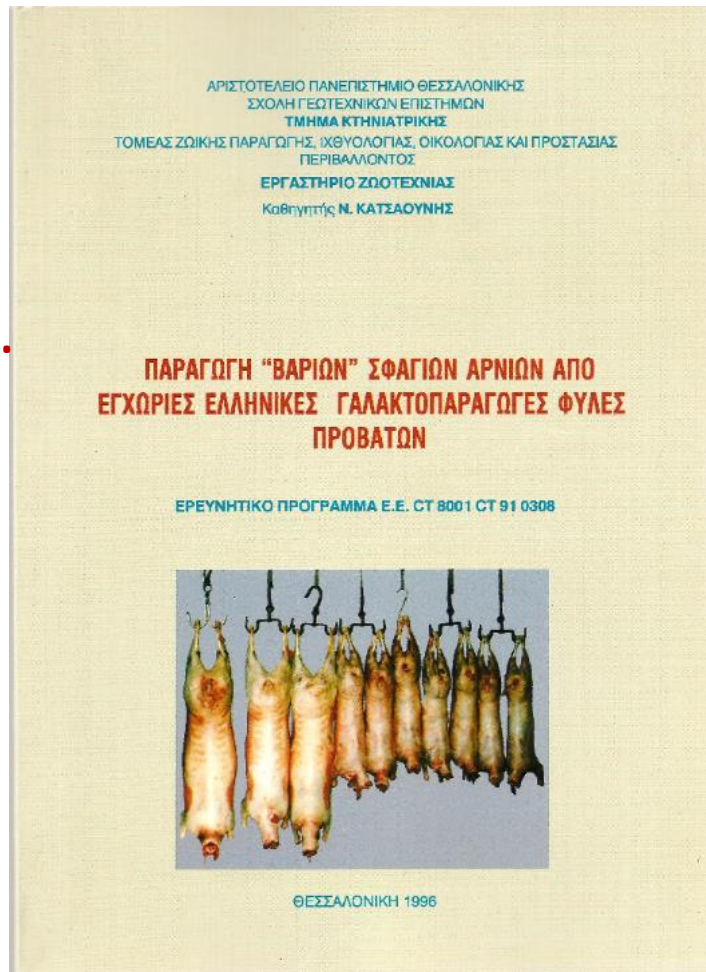
**Innovations are also** marketing processes, organizational methods, business practices, or **farmer training programmes,**

**Innovations are context dependent,** new to the world, new to a country or a region, new to a farming system and new to a sheep or goat breed

# Innovations and project impact has a **different rate** in sheep and goat systems

The case of sheep  
meat

CAMAR  
(8001CT **91030008**).  
(1992-1995)





# Innovations and project impact has a **different rate** in sheep and goat systems

The case of sheep  
meat

iSAGE **2016-2020**



**The main challenge of sheep and goat sector** in Europe is the **socioeconomic and structural constrains** that prevent farmer acceptance and uptake of innovations at farm level

## **Socioeconomic constrains**

- **farmer's reluctance** to modify farming practices,
- **lack of innovation culture** across farmer communities,
- limited farmer skills and knowledge in some areas,
- low farmer investment capacity.
- **The ageing of farmer** populations,
- rural areas depopulation trends



# Structural constraints

## At farm level,

- Strong and **well-organized, long-term, farmer collaboration** is required
- Management, process and analyse farm data is a key component of such collaboration.
- The role of farmers' institutions and collective structures (e.g. farmers levy organizations, breeders' associations, cooperatives, etc.) is decisive in regulating and managing such collaboration.

# Structural constrains

## At sector level,

- **Internal competence between value chain stakeholder** (e.g. farmers, processors, distributors, retailers) within the sector reduces its 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** will facilitate the adoption of innovative practices in products development and marketing.
- **Marketing innovations** in extensive and semi-extensive systems should focus on **informing the society about the environmental and cultural public services that such systems provide.**

# Opportunities

The latest advances in molecular genetics and DNA analysis have boosted the development of **new tools in breeding programs**

**IT technologies** will be fundamental in the professionalization of the sector in the future (e.g. recording of individual animal data)

**Farmers will modify their practices** only if farm innovations can increase farm efficiency (increasing farm profit) and reduce at the same time the farm environmental impact

# Opportunities

**There is enough room for product and process innovation in meat sheep production.** New packaging and cuts, development of quality labels or other certification and traceability systems

**Participatory farmer-group training programmes** seem to be a strategy with high potential to develop a more knowledgeable and competent farming workforce

Requirements:

- National organisation with regional branches,
- Strong national network of farms, businesses, organizations
- **Collaboration spirit!**



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# Thank you