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Report on Final Conference

Sheep may safely graze, and help with the challenge of climate change

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Authors

CNR
Matilde Schirru (IBE)
Enrico Vagnoni (IBE)
Pierpaolo Duce (IBE)

Editing
Matilde Schirru (IBE)

Coordinated by:

CNR IBE
Institute of BioEconomy

Report on

SheepToShip LIFE Final Conference

Sheep May safely graze and help with the challenge of climate change

Introduction

In the second year of Covid19 pandemic, also the SheepToShip (StS) LIFE Final Conference (FC) has held on-line, as international event, with title: “Sheep may safely graze and help with the challenge of Climate Change”. Title moved from the composition of Johann Sebastian Bach, called “Sheep may safely graze”, introducing the mood of the project’ achievements, concerning a more sustainable sheep dairy farm by eco-innovation for a safe future, helping with the challenge of mitigate impacts of climate change.

The event intended to discuss how moving from sustainable practices to governance tools and agro-environmental policies framework. In particular, during the conference the Environmental Action Plan for the Sardinian dairy sheep supply chain - main outcome of SheepToShip LIFE project - was presented. The debate has been promoted in a multi-policy European context, from Climate Change adaptation and Sustainable Development paths and schemes to Rural Development Programmes and Green Deal strategy, in a multiscale perspective relevant for sheep farming and, more in general, for the entire livestock sector, from regional (Sardinian), national (Italian) to European scales.

The online conference was addressed to decision-makers, researchers, farmers’ associations and individual farmers, representatives of the cheese industry, consumers and other livestock stakeholders. The WebConference used WebMeeting platform (by Adobe Connect), hosting more than one hundred invited auditors, among stakeholders (farmers, agronomists, environmental consultants, agricultural technicians, etc.), researchers, students, environmental journalists, other.

To guarantee the event as opener as possible to everyone interested in, FC has been hosted in a virtual platform, available for audience both in Italian and English languages, thanks to translation services

In a three hours debate, FC reached a peak of 270 people as audience.

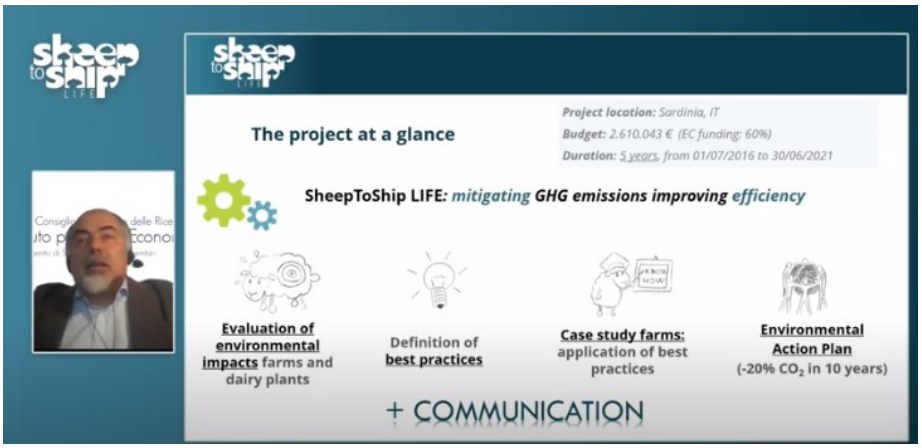
Among participants, agronomists connected from all over Italy, students, reseachers, policy makers and technicians all over Europe, as well as contacts from LIFE project networks (MAGIS, Forage4Cimate, GreenSheep, others).

The Conference has been facilitated by Pierpaolo Duce, senior researcher at Institute for BioEconomy (IBE) of the National Research Council (CNR) , institutional greetings by the General Director of the Institute for BioEconomy of the Italian National National Council (CNR- IBE), Dr. Giorgio Matteucci, and by the Environmental Defence Councillor, Gianni Lampis, on behalf of the Government of Autonomous Region of Sardinia.

Figure 1. Dr Duce, Institute of BioEconomy (National Research Council) moderating the Final Conference.

The introduction of Dr. Matteucci, Director of IBE-CNR, focused on:

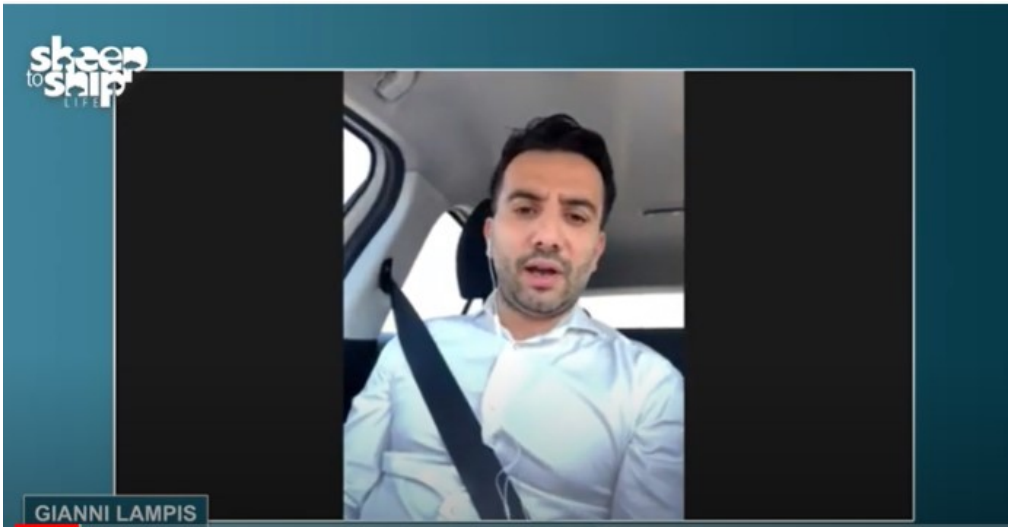
- A brief description of goals, budgeting and partnership of SheepToShip project
- The importance of project results trasnferring not only at national level but at European one
- StS project started in 2016 but is coherent with the European Green Deal framework (2019) and Farm to Fork Strategy



- *Figure 2. Giorgio Matteucci, director of Institute of BioEconomy (National Research Council) ouverture.*

Institutional greetings by Gianni Lampis, Councillor of Environmental Protection of the Autonomous Region of Sardinia, remarked.

- StS project and its results provide a measure of the territorial resilience effort for the dairy sector in Sardinia, a fundamental sector for the regional economy and society.
- The institutional collaboration with the StS project partnership is of great interest for the support of Sardinian regional strategy for sustainable development. The regional institutions are at the disposal of the research institutes for the consolidation of the collaboration and the extension of the partnership to paths in continuity with the current improvement of strategies to combat climate change.



- PierPaolo Duce (CNR-IBE) highlighted how Life Cycle Thinking approaches and tools allows

Figure 3. - Giorgio Matteucci, director of Institute of BioEconomy (National Research Council) ouverture.

above mentioned solution and strategies, together with conservative agricultural practices and cultural transition paths, involving stakeholders and customers. (scientific dissemination,

communication of environmental co-benefits) for climate mitigation, human and animal health, last but not least, added value to agricultural productions. Agriculture at global level produce the biggest amount of Methane as GHG[1]: that's why the sector urges to reduce by eco-innovative solutions and strategies its environmental impacts.

Contribute of invited speakers

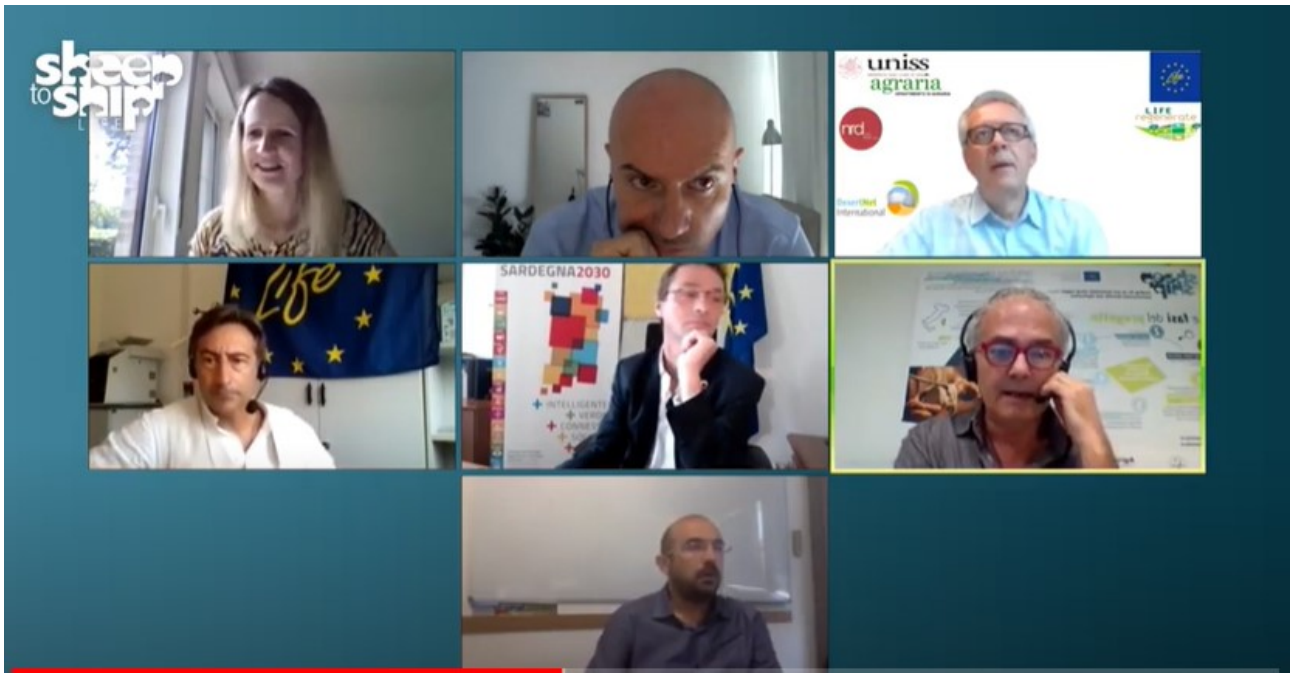


Figure 4. From left side, Christine Muller, Nicola Di Virgilio, Pierpaolo Roggero, Enrico Vagnoni, Gianluca Cocco, Pierpaolo Duce, Alberto Atzori, speakers at StS final conference.

The FC opens with a summary of the SheepToShip LIFE insights by Alberto Atzori (University of Sassari) presenting

- an overview of the Sardinia sheep farming sector and its environmental impact (1600 Kt of CO_2 equivalent)
- presented an overview of the Environmental Action Plan (EAP), the main goal of SheepToShip LIFE project.

Atzori's talk also described and underpinned how

- Specialised farms are in Sardinia about three thousands, with one million heads, producing 60-65% of regional milk and 65% of Carbon emissions. Adopting technical protocols, eco-innovation driven (e.g. improving fodder quality, self-production of food, productivity reform, herd management, pasture management), it is possible to ensure high quality production, maintaining baseline level of productions, competitiveness at national level with the chance to reduce the number of animals, reducing drastically more emissions, add quality certified dairy sheep chains.
- Multifunctional farms with strong links to the territory, in the other hands, can play a role in social and environmental regulation. These systems and their role in preserving the land, maintaining biodiversity, carbon sequestration. Eco-environmental indexes can be oriented towards regulating these services.

- heterogeneous Sardinian farming system in an opportunity to enhance both farm production and efficiency, and environmental and economic performances, depending on farm characteristics and related profiling indicators, as set in the project (production efficiency goals, ecosystem services accounting, prioritization of best practices to be adopted in order to reduce environmental impact).

In order to support agro-environmental policies targeted to dairy farm, the EAP set good practice, as technical protocols, to reduce environmental impacts and defines indicators.

Atzori's also, highlitghed how it is possible to maintain the same production of a baseline scenario, with only 2 million animals, compared to the 2.6 million present in Sardinia today. The whish regarding the StS heritage, in terms of EAP, is to stimulate a constructive political discussion on modulating public investment in support of the sector in the direction of resilience, economic development and a stronger long term environmental protection.

Thanks to the project insights, it should be opportune today to set specific rural programme measures oriented towards the central role of producers' groups – specialized or multifunctional – to allow in mid and long term scenarios, to decouple the sector from the public support.

Limits still remain such as the awareness that benefits can be reaped first by innovators than by others, value chain considerations to redistribute benefits throughout the supply chain, better if Carbon credits schemes in agriculture can be accounted thought opportune implementation of carbon farming schemes.

Technology transfer and skills training must be also rethough, not only around farmers but around the supply chain. Governance of the process is crucial. Last but not less important, producers' aggregation can improve performance at supply chain system level

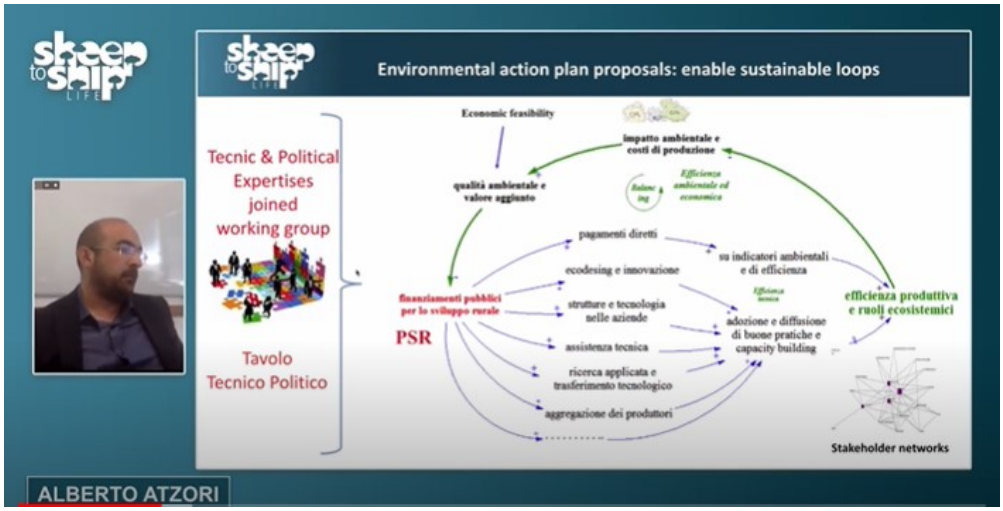


Figure 5. Alberto Atzori speaking at Final Conference. In the slides on his side, the sustainble loops activated as described in the Environmental Action Plan.

Gianluca Cocco – Director of the Environmental Sustainability, Impacts Assessment and Information Systems Department– Autonomous Region of Sardinia described instead the Regional Strategies on Climate Change Adaptation in a hand, and that of Sustainable Development actually under elaboration process. Main European funds and opportunities, as European projects like SheepToShip LIFE to finalize through concrete pilot cases the sustainability and climate change adaptation and/or mitigation practices.

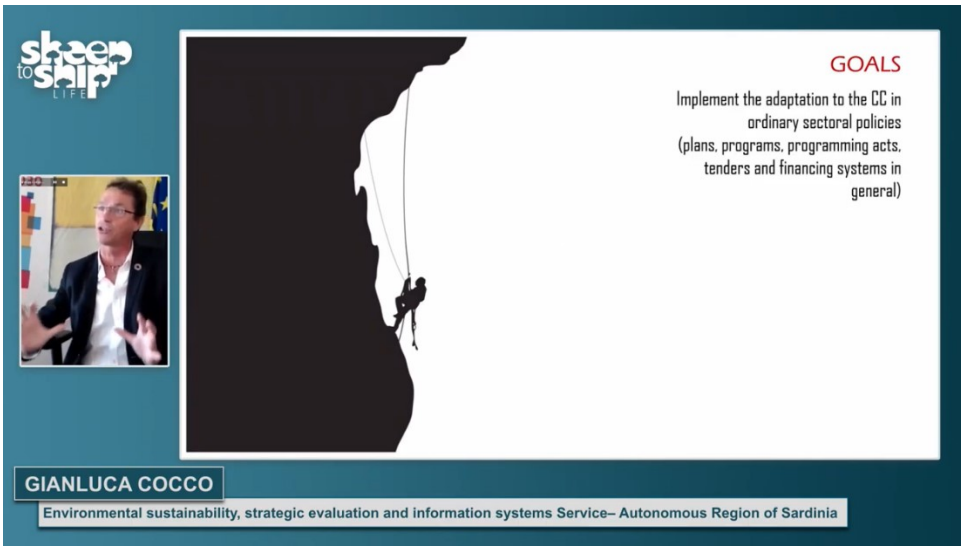


Figure 6. GianLuca Cocco, Director of the Environmental Sustainability, Impacts Assessment and Information Systems Department– Autonomous Region of Sardinia

Pier Paolo Roggero – Department of Agricultural Sciences – University of Sassari remarked a synthesis of the climate change phenomenon in Europe in latest decades, highlighting how much Sardinia shown in latestdecades a very slow and scarce adaptation capability in rural areas vs that of urban ones. Adaptation is more urgent in Sardinia than mitigation, SheepToShip LIFE works in this direction supporting ecological transition in dairy sheep farming system.

As expert not only of Agriculture but as scientific coordinator of Sardinia Regional Strategy of Adaptation to Climate Change (SRACC), Roggero's summarized cross cutting priorities for Sardinia pastoral system as scheduled in the SRACC, such as

- Improved governance of subsidies and farm data management
- New learning spaces for farmers to generate adaptive responses from hybrid knowledge
- Awareness raising, education
- Stimulate bottom-up design solutions
- Subsidiary services (e.g. grazing for wildfire prevention)
- Invest on cooperation between rainfed and irrigated districts
- Develop specific adaptation policies
- Support farm cooperation to increase resource use efficiency
- Marketing: valorize grass-fed products
- Support permanent grasslands vs annual hay crops
- Improve the rural-urban interface/control sheep seasonality/cheese diversification

Specific priorities for Sardinian pastoral systems needs new services to livestok breeders to facilitate climate change adaptation, such as data and info accessibility, decision supporting systems, but also climate services (e.g. agrometeo, irrigation, seasonal forecast, hi-res climate scenarios).

Roggero also emphasized the importance to monitor at long-term ecosystem observatories for rural areas in Sardinia, in terms of land uses, livestock health and welfare, genetic breeding of Sarda sheep, showing the urgence to act mitigating and adapting to climate change which systemic innovation changes helped by a systemic governance.

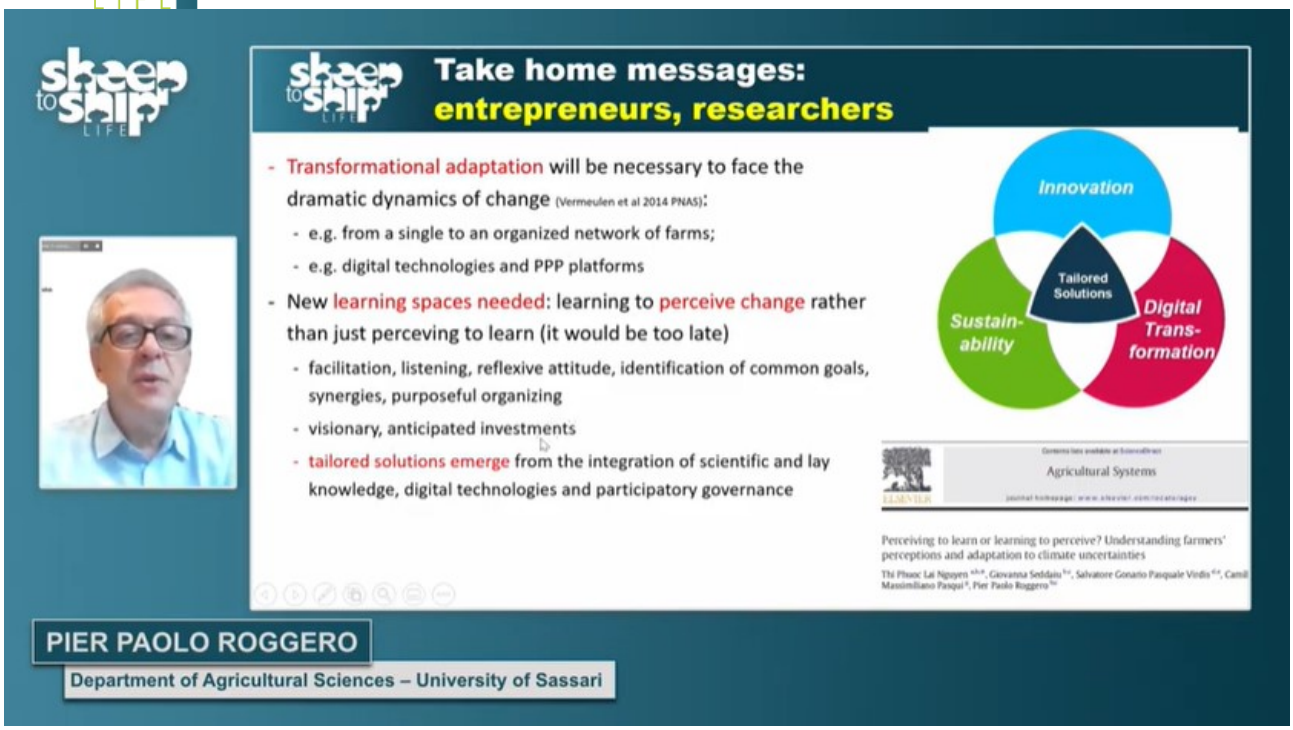


Figure 7. Pier Paolo Roggero, Department of Agricultural Science, University of Sassari.

Cristine Muller, from Directorate General for Climate Action – EU Commission, presented highlighted and summarized

- the importance of StS towards the European Climate Change Adaptation Policy Framework, regarding the European strategy of climate neutrality to 2050, in order to limit global warming to below 2 degrees.

European Carbon Farming initiative (Farm to Fork Strategy)
Carbon Removal Certification Initiative (Circular Economy Action Plan)

- Collaboration on the Emissions Trading Scheme is required, expansion of this plan to other sectors such has been discussed, more ambition is also expected for the agricultural sector

Nicola di Virgilio, from the Directorate General Agriculture and Rural Development – EU Commission), explained in depth

- Farm t Fork European Strategy, in order to design a fair, healthy and environmentally-friendly food system.
- how to accelerate our transition to a sustainable food system means create opportunities for all operators in the food chains, and make available safe food and at the right prices for final users as customers.
- Reducing pesticide is part of the strategy, together with animal wellbeing to ensure environmental friendly farming systems.
- Agricultural governance, green public procurements and products'labelling are part of the strategy together with the efforts on transparency and information towards customers of food chains, values and quality certifications. Carbon Farming strategies are possible through Nature based solutions, which highlight ecosystem services, reducing biodiversity losses. Not just Carbon equivalent but Methane.

- Nigel Scollan (Queen's University Belfast (QUB) – The Institute for Global Food Security),

Science needs more detailed datasets from farm level to make easier the process of evaluation for an Environmental Action Plan.

  - Improving collaboration from Institution in order to open archives to Science.
  - Detailed dataset would allow from farm level up to regional scales to assess feasibility and acceptability studies, to support scientists and planners in managing and co-designing with stakeholders their future farming scenarios.

Roundtable & Debate

Giuseppe Pulina – Department of Agricultural Sciences, University of Sassari and Pierpaolo Duce – CNR IBE facilitated the discussion with Inmaculada Batalla – BC3 Basque Centre for Climate Change SP Sindy Moreau – IDELE Institut de l'Elevage FR Livia Vidu – Faculty of Animal Science – University of Agronomic Sciences and Veterinary Medicine of Bucharest RO George Zervas – Agricultural University of Athens GR. Roundtable focused on European case studies of policies, agroenvironmental schemes

Batalla, relating to the Spanish experiences, remarked the importance to take care of socio-economic problems of farming system, due to the agro-ecological limits under Climate change condition and future scenarios. Livestok diet becomes crucial in adatpation for the whole system. Competition with human diet concerning the usage of soybean could reduce apparently GhG emission but enhance the carbon footprint. LCA and multicriteria perspectives are useful to reach a whole vision, as well as One health programme does in helping

Moreau's talk focused on the French programme in line with StS framework: reducing livestock carbon footprint within 2030 towards a zero carbon agricultural emissions. The importances of european and sectorial observatories are crucial in promoting, monitoring and act for a European framework on sustainability performances. Ecoinnovation diffusion, techcnical capacities of farms'performances

Moreau also describes goals and objectives of the LIFE GreenSheep across manynd European Countries, aiming at reducing additional sheep farming emissions of 12%, ten years.

Carbon credits schemes for Agriculture such as Carbon Agri for French National level: a mechanism for climate changes mitigation.

George Zervas described the experience of LIFE ForageForClimate, targeted on cow and sheep dairy farming. Project focused on enhancing and better managing forage production in order to reduce carbon footprint of the agricultural system of territories and model farms involved.

Closing remarks

Summarizing main remarks from the whole presentation of the StS Final Conference,

- the challenge to adapt European livestock farming systems in reducing drastically their GHG Emission within 2030 and 2050 deadlines is hard and requires urgent actions starting from results, insights and experience of project and actions experienced and presented by keynotes speakers at the event, StS as battering ram head.
- the StS network, integrated day by day with new or strengthen collaboration all over Europe with scientific, technical, political and agricultural stakeholders will improve in next future actions and lobbying processes to facilitate and support at European level climate policies and agro-environmental schemes for a more resilient and net zero carbon society.

- The whole conference is available in a dedicated section on the website www.sheeptoship.eu, or directly to the links https://youtu.be/Y48USbctoNg in italian, https://youtu.be/9e4jaK98PL8 in english.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