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SheepNet – Sharing Expertise and Experience towards sheep Productivity through NETworking



Key external stakeholders:

Sheep producers, veterinarians, agricultural advisors/consultants, feed and agricultural input industries, meat processors, sheep breeders, media.

Practical implications for stakeholders:

The EU is the second largest sheep meat importer in the world. An increase in ewe productivity of 0.1 lambs reared per ewe joined would increase EU meat supply by 64 thousand tonnes and self-sufficiency to 92%. Ewe productivity (number of lambs reared per ewe joined) has not improved in many countries in the past 30 years. SheepNet was about practice-driven innovation and practical knowledge among stakeholders and used multi-actor and codesign approaches to promote and establish durable exchange of scientific and practical information among researchers, farmers and advisors across Europe. The SheepNet network stimulated knowledge exchange and promoted the implementation and dissemination of innovative and best technologies and practices for the improvement of sheep productivity. A total of 976 and 337 stakeholders participated in 34 national and 5 EU multi-actor meetings, respectively. SheepNet produced 218 technical articles and videos including 42 solutions and 88 'tips and tricks' on factors impacting ewe productivity; undertook on-farm evaluations of many of the solutions; and described 19 sheep rearing systems. Most of the communications are translated into 6 languages and are available on the SheepNet website (www.sheepnet.network). The SheepNet reservoir provides the technical and practical knowledge required to improve sheep productivity and profitability across the EU.

Main results:

- There are similar challenges to improving sheep productivity across Europe but the order of importance differs by regions.
- As some challenges are region specific, other countries may have previously had these problems and developed practical solutions which are now available.
- There are many different media/sources available to transfer technical/practical information to stakeholders involved in sheep production across Europe, but to achieve successful communication the choice of media to use depends on the target audience i.e. stakeholder type and country/region. Whilst interactive communication and peer to peer are important media, the best sources of information differed between stakeholder type.
- From a choice of 12 media channels, social media and technical sales personnel were considered as the poorest sources in information by all of respondents, regardless of stakeholder type.
- Using published data collated globally and practical experience of sheep producers worldwide, SheepNet has:
 - 1) Described 19 sheep production systems which operate within the EU and Turkey
 - 2) Addressed stakeholders questions on sheep productivity with
 - a. 42 solutions many of which were evaluated in on-farm situations
 - b. 88 'tips and tricks' to aid solution implementation, improve labour efficiency and farm profitability
 - c. 22 fact sheets
 - d. Reviewed 3,458 scientific articles
 - e. Identified 19 new research needs

Opportunity / Benefit:

The EU is only 85% self-sufficient in sheep meat production. An increase in ewe productivity of 0.1 lambs reared per ewe joined would be equivalent to 64,000 tonnes of sheep meat, increasing EU self-sufficiency to 92%. Each 0.1 extra lambs sold per ewe joined would increase income by approximately €10. SheepNet has

compiled a reservoir (www.sheepnet.network) of knowledge, practical solutions and tips and tricks to increase ewe productivity, farm profitability and EU self-sufficiency in sheep meat and milk production and is available to all people worldwide.

Collaborating Institutions: Idele, SRUC, Agris, Banat University, INRA, NEIKER, Togen, Efficient Innovation

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1. Project background:

Sheep meat and sheep milk production are very important farm enterprises in Europe and play a key social, economic and environmental role in many “less favoured areas”. Currently there are 85 million sheep on 830, 000 farms in Europe and 33 million sheep on 127,000 farms in Turkey. There are more sheep in Europe than in Australia and New Zealand combined. The number of sheep producers in the EU has declined by 50% since 2000 and during the past 10 years sheep productivity has decreased by up to 40% depending on the country and the farming system. This decline in sheep production may be due to a number of factors including profitability, part-time farmers, reduced labour availability, lack of uptake of technology and innovation, etc.

The EU is the second largest importer of sheep meat in the world as it is only 85% self-sufficient in sheep meat. The average EU per capita consumption of sheep meat is 2.1kg. There is an opportunity to increase production without having to export excess sheep meat. An increase in ewe productivity of 0.1 lambs reared per ewe joined would be equivalent to 64,000 tonnes of sheep meat, increasing self-sufficiency to 92%.

The UK, Spain, France, Romania, Ireland and Italy are the largest producers of sheep meat in Europe. The UK has the largest number of ewes in Europe while Ireland is the largest net exporter of sheep meat in the EU. As well as sheep meat production there are a significant number of dairy sheep in Europe producing milk and cheese. Romania has the largest number of dairy sheep in the EU followed by Italy.

Sheep production in Europe presents a great diversity of production systems due to differences in ewe genotype, environmental conditions, lambing frequency etc. Average prolificacy (litter size) in the systems of sheep production in Europe ranges from 1.2 to 1.7 lambs born per ewe lambing and tends to be higher in lowlands systems (1.47) compared to systems in mountain areas (1.31). The average number of lambs reared per ewe joined ranges from 1 to 1.5 in most of the systems across Europe. However high productive rates are achievable, for example the Assaf breed in Spain and are permanently indoors in an accelerated reproductive strategy rear up to 2.5 lambs reared per ewe joined. In some regions ewe productivity has not improved over the last 30 years.

There are significant opportunities to improve ewe productivity in most systems by improving reproduction success and lamb survivability thus improving farm profitability and increasing the self sufficiency of sheep meat in Europe.

2. Questions addressed by the project:

- What are the main challenges/needs of producers to improve flock productivity (i.e. enhance pregnancy rate, increase gestation success and reduce lamb mortality)?

- What are the modes of communication that stakeholders use to get information on ewe productivity?
- Are solutions available, either nationally or internationally, to address producer's needs to improve ewe productivity and flock profitability?
- Are best innovative practices transferable across regions/countries?

3. The experimental studies:

SheepNet was a thematic network which used a multi-actor approach that engaged farmers, farmer organisations, scientists, advisors/consultants, veterinarians etc. involved in the value chain (Figure 1) encompassing the sheep industry. In Ireland the following stakeholder groups/organisations were represented at the National Workshops: IFA, ICOSA, INHFA, IVA, ACA, Teagasc, Farmers Journal, MII and Sheep breeders. National workshops involving many stakeholder groups were organized in each SheepNet country. In each of the SheepNet countries there was a Network Facilitator who encouraged the exchange of information and knowledge between the stakeholders and standardized methodologies used in each country. Representatives from each SheepNet country National workshop met bi-annually at Transnational Workshops. Using a top-down:bottom-up approach SheepNet aimed to promote the implementation and dissemination of innovative technologies and practices that impact ewe productivity.

An online survey was undertaken to identify stakeholders needs/questions related to improving sheep productivity. Sixty per cent of respondents being farmers, shepherds or farm workers. A survey was also undertaken to identify which sources stakeholders used to get information on sheep productivity. As there is an interest in precision livestock farming a survey was undertaken to identify motivations and drawbacks to the use of the electronic identification and precision livestock farming.

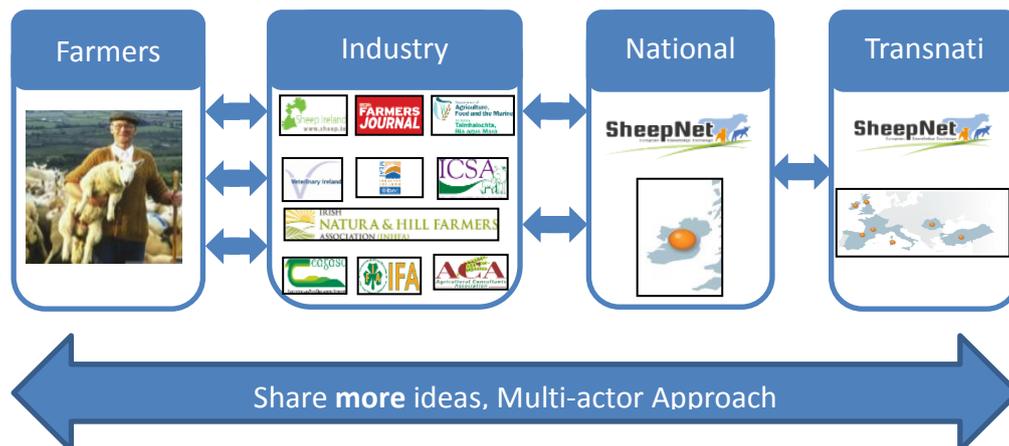


Figure 1. Connections between the thematic network from Ireland to the other partners

4. Main results:

- By mobilising existing sheep stakeholder networks, SheepNet organised 5 national workshops per partner country (35 in total), 5 transnational workshops and the final seminar (in France), which were seen as extremely valuable by a wide range of stakeholders participants. The facilitation of these workshops, by the Network facilitators, was designed to foster cross-fertilisation between people with various profiles (farmers, advisors, vet, scientist etc.), due to the training that the NF received
- With a cross-fertilisation approach, SheepNet collected, described and translated (in 6 languages) 42 solutions (best practices), 88 'tips and tricks' and 22 factsheets. All these practices are accessible on the SheepNet community platform, and for many of them video descriptions are available. All practices are described with information on expected benefits (impact, labour, cost, etc.), prerequisites and/or limits, scientific references, related 'tips and tricks' and feedback from end-users who evaluated it.
- A database of more than 4500 scientific publications of relevance to SheepNet was created, filtered to 3458 and the more important papers for SheepNet aims catalogued and used to develop 22 factsheets to address the needs identified from the bottom-up approach. All outputs are easily accessible in 6 languages on the SheepNet website, thanks to a dedicated classification of all articles

5. Opportunity/Benefit:

- This project demonstrated that solutions to needs/issues of producers to increasing ewe productivity (increased pregnancy rate, gestation success, and lamb survivability) exist either in their region or other countries worldwide. SheepNet has compiled a reservoir of knowledge, practical solutions and tips and tricks to increase ewe productivity, farm profitability and EU self-sufficiency in sheep meat and milk production. All of this information is freely available in numerous media channels and is all compiled on the SheepNet reservoir (www.sheepnet.network) and is available to all people worldwide.

6. Dissemination:

Dissemination was an integral part of SheepNet. SheepNet developed a reservoir of scientific and practical knowledge which included:

- a) 1 website (www.sheepnet.network)
- b) 8 papers at scientific conferences
- c) 19 press releases translated into 6 languages
- d) 8 newsletters each translated into 6 languages
- e) 150 practice abstracts presented in English and the native language of country of origin
- f) 120 videos including the implementation of solutions on commercial farms
- g) 143 press articles in the authors native language
- h) 37 TV and radio interviews
- i) 33 infographics
- j) 8 technical seminars
- k) 655 tweets
- l) 42 workshops including 35 national workshops and 7 transnational workshops
- m) The final Seminar of SheepNet was held in France
- n) Each country had their hosted a SheepNet seminar
- o) 32 participations to conferences or workshops

Main publications:

Gautier JM, Davies-Morgan C, Keady TWJ, Bohan A, Lagriffoul G, Ocak S, Beltrán De Heredia I, Carta A, Gavojdian D, Rivallant P and Francois D (2019), Use of Electronic Identification and New Technologies on European Sheep Farms. 12th EFITA International Conference. pp 234-239

Keady TWJ and Gautier JM (2018). SheepNet – increasing ewe productivity in the EU and Turkey. Proceeding of the 69th Annual Meeting of the European Federation of Animal Science, Dubrovnik, Croatia, p 215.

Keady TWJ, Gautier JM, Morgan-Davies C, Carta A, Gavojdian D, Ocak S, Corbière F, Ruiz R and Beltrán de Heredia I (2018). What sources are used by stakeholders in Ireland and Europe to inform information on ewe productivity? Proceedings of the 27th General Meeting of the European Grassland Federation, Cork, Ireland, pp 990-992.

Popular publications:

Keady, T.W.J. (2018). Great optimism in the Australian sheep sector. Irish Farmers Journal, Vol 71, No 11, 17 March 2018, pp 42-43.

Keady, T.W.J. and A Bohan (2018). SheepNet exchange solutions to improve sheep productivity. Press Release, January 2018.

Bohan, A and Keady, T.W.J. (2019). SheepNet highlights benefits of BCS and precision farming. Irish Examiner 14 January, p 19

7. Compiled by: Dr Tim Keady