Sm@RT

Sm@ll Ruminant Technologies

RESEARCH NEEDS AND GAPS IN SOLUTIONS

Sm@RT POLICY BRIEFS

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Introduction

General introduction about the project

Sm@RT (Small Ruminant technologies –Precision Livestock Farming & Digital technologies for small ruminants) is a European network to share experience of new technologies for sheep and goats. It brings together a network of researchers, farmers and advisors to improve awareness of innovative tools, demonstrating their potential and possible return on investment.

Sm@RT involved 11 partners in 8 countries, and focus on dairy goats, dairy sheep and meat sheep farmers.
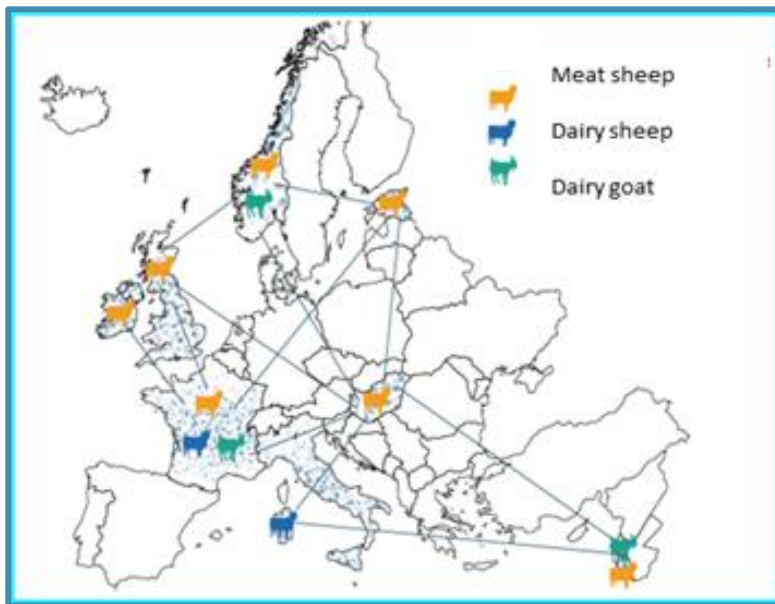
Sm@RT fostered exchanges on technologies between farmers during farm demonstration days on innovative farms and digifarms.

Sm@RT created resources for farmers regarding available technologies, to progress in their digitization process to meet their needs and objectives. Guidelines, cost-benefit analysis, farmers' testimonies and videos have been created to encourage uptake of solutions to needs.

Findings

In general, the findings of this project confirm that:

- Although only 15 % of farmers have technologies on their farms, 79% of them would like to use technologies to help with feeding/grazing, health and welfare, reproduction, flock/herd management, fattening and/or milking

- A total of 166 ranked needs were identified and 60 innovative technology solutions were proposed to the farmers.

- Training sessions on Digifarms and Farm Demonstration on Innovative farms proved an ideal medium for peer-to-peer knowledge transfer regarding the use of technologies.

- The main barriers to uptake are linked to costs of technologies, but also to the lack of training options, after-sales advice, confidence in one's skills and compatibility between the devices.

- Sharing of knowledge and experiences between farmers, researchers and other stakeholders in different countries proved invaluable.

- There is a lot of information regarding cost of technologies, but the information is often dispersed and not always in a format (or language) easy to understand or to adapt to one's farming situation. Cost-benefit analyses are necessary for farmers to fully decide on investing in technologies or not.

The project identified 4 key messages, that are developed in policy briefs:

1. Focus on research needs

2. Peer-to-peer demonstration & training needs for farmers

3. Innovations on small ruminant farms

4. Adoption & uptake of innovative technologies

This policy brief focus on key message #1 – Focus on research needs

*The recommendations identified in the four policy briefs have been developed during the life of the project by the partners and in collaboration with **over 1350** stakeholders during the project's participatory workshops.*

*The project carried out an initial online survey to capture farmers' opinions, which gathered **over 660** answers. A total of **52** national workshops have been conducted, together with **five** transnational workshops, **one** final seminar and **one** international visit. **Over 635** individual farmers' evaluations have collected during **30** training sessions and farm demonstrations days on Digifarms and Innovative Farms.*

![Sm@RT - Sm@ll Ruminant Technologies logo]

Recommendation at a glance

✓ **Out of over 220 technological needs, 77 individual solutions could be identified, with only 2 technological gaps relating to milking**

✓ **Not all solutions are yet available or affordable to small ruminant farmers**

✓ **More research on technology development for small ruminant farmers' needs is needed**

✓ **More training and advice on how to use the existing technologies is needed.**

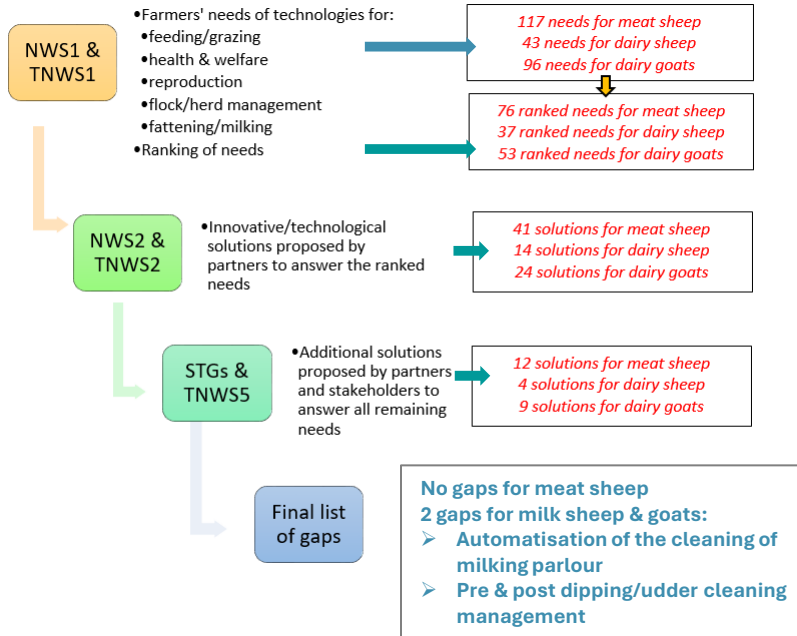# What is the challenge?

• There is not much research on the adaptation of technologies for small ruminant systems

• Research on innovative technologies tend to have focused on larger species in intensive settings

• Sheep and goats are often perceived as having a lower individual value than other larger species

• This leads on to a perceived lack of value of technologies for sheep and goats

What did we learn from Sm@RT?

In the project, the following steps were taken to identify the gaps between farmers' technological needs and existing technologies:

NWS1 & TNWS1

- Farmers' needs of technologies for:
  - feeding/grazing
  - health & welfare
  - reproduction
  - flock/herd management
  - fattening/milking
- Ranking of needs

117 needs for meat sheep
43 needs for dairy sheep
96 needs for dairy goats

76 ranked needs for meat sheep
37 ranked needs for dairy sheep
53 ranked needs for dairy goats

NWS2 & TNWS2

- Innovative/technological solutions proposed by partners to answer the ranked needs

41 solutions for meat sheep
14 solutions for dairy sheep
24 solutions for dairy goats

STGs & TNWS5

- Additional solutions proposed by partners and stakeholders to answer all remaining needs

12 solutions for meat sheep
4 solutions for dairy sheep
9 solutions for dairy goats

Final list of gaps

No gaps for meat sheep
2 gaps for milk sheep & goats:
- ➢ **Automatisation of the cleaning of milking parlour**
- ➢ **Pre & post dipping/udder cleaning management**

- ➢ Out of **over 220 needs**, **77 individual technological solutions** potentially exist for small ruminant farmers
- ➢ Although there are **few gaps**, not all solutions are available (prototypes) or affordable to farmers.
- ➢ Some of the needs were related to **training and knowledge** (especially for meat sheep and dairy goats) or were **outside farmers' control** (particularly for dairy goats).

What do we recommend?

- ✓ **More investment in research on technology specific to small ruminants, particularly regarding milking**

- ✓ **There are few gaps in knowledge or technologies between farmers' needs and solutions, however, encouraging development to market of prototypes is crucial, as is the affordability of the technology**

- ✓ **Training and pen-side advice is crucial, and need to be further encouraged by policies**