**Report of the first national workshops (NWS 1)**



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| August, September & October 2021 Physical meetings and virtual conferences | **Sm@RT NWS1** |

# Objectives

3 main objectives were identified for the first national workshops (NWS 1):

* Present Sm@RT project to stakeholders
* Collect their husbandry/management needs and challenges that could be helped with technologies, and present the survey results Identify some solutions to the needs
* Create a group of stakeholders for the Sm@RT project

# ORGANISATION AND Attendees

Due to the Covid, 2 different organisations were proposed: face-to-face meetings and virtual conferences depending on the context of each country. The generic agenda of the meetings is detailed on the annex 1.

# Minute by country

## Ireland (meat sheep):

### Date and place of the NWS 1:

Thursday 7th October 2021, 11 am to 12:30, virtual meeting.

### Present:

**Number of participants: 18**

Tim Keady (Teagasc Research), Brid McClearn, (Teagasc Technologist), Alan Bohan (Sheep Ireland), Ciaran Lynch (Teagasc adviser), Frank Campion (Teagasc), John Joe Fitzgerald (Innovative Farmer), Christy Watson (Teagasc adviser), Tommy Doherty (Teagasc adviser), Simon Byrne (Farmer and consultant), Ciaran Sheelan (Farmer), Alan Cole (farmer), Denis Bourke (farmer), Barry Bonnar (agricultural college), Ger Carey (agricultural college), Oliva Hynes (farmer), James Manley (Eid tags), Brian Fleming (department), TJ Duffy (industry)

### Apologies:

Darren Carty (Press), Tomas O'Toole (Innovative Farmer), Noel Claffey (Digifarm farm manager), Seamus Fagan

(veterinary), John Brooks (farmer), James Smyth (meat processor).

### Organisation:

Tim thanked everyone for attending. He gave a brief overview of the Sm@rt project including an overview of the European sheep industry, use of PLF, the partners involved, objectives of the project and levels of networking (i.e. digifarm and innovative farms).

Brid introduced the group exercise, which was to identify the needs and challenges of SR producers under the following 5 headings:

1. Feeding/grazing
2. Finishing/fattening
3. Flock management
4. Reproduction
5. Health/welfare

For each of the above 5 headings the attendees were asked to identify what they consider is difficult/boring/time consuming and could be done in a more efficient, fast and/or less labour intensive way. The attendees were divided into two breakout rooms. Group A was facilitated by Tim and discussed feeding/grazing, finishing and flock management. Group B was facilitate by Brid and discussed reproduction and welfare/health. Following the breakout rooms, all attendees voted for the top 2 needs/challenges in each subject area.

### Needs identified and votes/prioritization:

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| Feeding / Grazing |
| Need / challenge | **Number of votes** | **Prioritization** |
| Fencing | 9 |  |
| Deciding on feeding groups | 9 |  |
| Grass allocation/measurement | 2 |  |
| Water supply to grazing groups | 0 |  |
| Establishing paddocks on out farms | 3 |  |
| Feeding/water to ewes in individual pens post lambing | 2 |  |
| Auto drafting ewes for nutrition management | 2 |  |
| Management of concentrate allocation during lambing -  | 6 |  |
| Automatic grass measuring/walk | 1 |  |

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| Fattening |
| Need / challenge | **Number of votes** | **Prioritization** |
| Weighing | 9 |  |
| Performance recording (growth rates, slaughter data etc.) | 2 |  |
| Faecal egg sampling | 1 |  |
| Ration formulation | 8 |  |
| Ration allocation/trough management | 5 |  |
| Lamb self weighing whilst feeding – and drafting | 6 |  |
| Automatic foot bathing | 2 |  |
| Identification and management of lame lambs | 1 |  |

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| Flock management |
| Need / challenge | **Number of votes** | **Prioritization** |
| Using complicated technology | 11 |  |
| Weaning | 1 |  |
| Shearing management | 2 |  |
| Breeding and DAFM requirement on the one data base | 3 |  |
| Automatic raddle/harness/transponder on rams | 3 |  |
| Simple technology | 7 |  |
| Cheap technology | 1 |  |

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| Health / Welfare |
| Need / challenge | **Number of votes** | **Prioritization** |
| Footbathing/treating lameness | 6 |  |
| Parasite management  | 2 |  |
| Dosing/FEC monitoring | 2 |  |
| External parasites | 5 |  |
| Shearing | 3 |  |
| Recording tags at lambing and health issues | 3 |  |
| Culling | 0 |  |
| BCS/general handling | 5 |  |
| Good layout/having pedestrian gates | 1 |  |
| Identifying diseases issues | 7 |  |

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| Reproduction |
| Need / challenge | **Number of votes** | **Prioritization** |
| Selecting/drafting ewes for rams/replacements | 10 |  |
| Raddling rams | 4 |  |
| Ram health monitoring/tipping dates/fertility testing | 3 |  |
| Identifying replacement/tagging/Breeding out health issues | 1 |  |
| Identifying abortion issues | 1 |  |
| Scanning and dividing ewe groups | 3 |  |
| Bolus use/drenching | 1 |  |
| Sourcing stock with right history/rearing | 4 |  |
| BCS ewes | 2 |  |
| Birthing records/ewe performance | 5 |  |

### Survey:

A summary of the Sm@rt PLF survey which was undertaken in the 8 partner countries was presented to the attendees.

## France (meat sheep):

### Date and place of the NWS 1:

Thursday 26th August 2021, 9:30 am to 4 pm, face to face meeting at Le Mourier (meat sheep Digifarm).

### Present:

**Number of participants: 11**

Maryline Barjou (Chambre d’agriculture Haute-vienne), Arnaud Dupont (Farmer), Anne Duclos and a leaner (OS Rom), Céline Clément (Technician), Lou-Marie Caillaux (project manager), Sébastien Martin (farmer), Margaux Goyenetche (Idele), Blandine Fagot (Idele), Laurence Depuille (Idele), Delphine Neumeister (Idele)

### Apologies:

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### Organisation:

Ice breaker: Everyone chose a card, introduced himself and described with his card what new technology mean to him. In summary, the new technologies evoked:

* A key for some difficult / new tasks, go forward, find solutions
* Some fears (environment, difficulties, we don’t know everything…)
* Create and valorize data
* Speed and time saving

Laurence welcomed everyone and presented the objectives and schedule of the day. Then she presented the Sm@RT project (objectives, network, partners…).

Delphine introduced the group exercise, which was to identify the needs and challenges of SR producers under the following 5 topics:

1. Feeding/grazing
2. Finishing/fattening
3. Flock management
4. Reproduction
5. Health/welfare

For each of the above 5 headings the attendees were asked to identify what they consider is easy to do in the farmer work and what is difficult/boring/time consuming and could be done in a more efficient, fast and/or less labour intensive way. The participants were divided into four groups to work on one topic (the topic “flock management was distributed in each group because of the number of participants). A summary and discussion were done to complete each topic.

After the presentation and discussion on the survey results, a lunch and a visit of the Digifarm were organized.

### Needs identified and votes/prioritization:

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| --- |
| Feeding / Grazing |
| Need / challenge | **Number of votes** | **Prioritization** |
| Identification of sick animal, move animals in big lots |  | 3 |
| Physical, repetitive work |  | 2 |
| Link between the stage of the animals, feeding tab and distribution |  | 4 |
| DAC |  |  |
| In pasture, distribute the concentrate with all the ewes around you |  |  |
| Grazing monitoring (pasture optimisation, virtual fences, connected fences, grass growth...) |  | 3 |
| Water distribution is time consuming |  |  |
| Fear around the wolf (flock surveillance) |  | 1 |

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| Fattening |
| Need / challenge | **Number of votes** | **Prioritization** |
| Lamb weighing (in barn and also in pasture) |  | 2 |
| Body condition score evaluation |  |  |
| Lamb sorting, manipulations, moving |  | 3 |
| Parasitism détection |  |  |
| Outdoor condition / barn condition to monitor / adaptation |  | 4 |
| Lamb identification (with eyes) |  |  |
| Selection between lambs to keep and lamb for fattening |  |  |
| Shearing of the last lambs |  |  |
| Help for the farmer to know when the lamb is great fattened (with BCS, autosorter, weight in function of what do the lamb eat) |  | 1 |
| Valorisation of digital technologies (cost, use of technologies at some periods) |  |  |

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| Health / Welfare |
| Need / challenge | **Number of votes** | **Prioritization** |
| Welfare is not easy to define and apply to all systems, how to measure the welfare ? |  |  |
| Need tools to observe animals and help the farmer for the decision |  |  |
| Individualisation of the treatments / analysis on the farm |  | 2 |
| Monitoring of water consumption |  |  |
| Training on existing tools |  | 2 |
| Detection of current parasites |  | 3 |
| Tools adaptation needed for each farm |  | 2 |
| Collating/grouping of individual health data with all other data |  | 2 |
| Ealy detection of sanitary troubles |  | 1 |

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| Reproduction |
| Need / challenge | **Number of votes** | **Prioritization** |
| Flock management software which integrate all data from devices |  | 1 |
| Automatized following of the reproduction (warnings at every steps) |  | 2 |
| Adapt feeding and prolificity |  |  |
| Identification of the young ewes  |  | 3 |
| Have more time for the breeding |  |  |
| Monitor the reproduction (tool to identify ewes for insemination) |  | 3 |
| Easier organisation of the gazing / barn with a lot of lots  |  |  |
| Deseasoning monitoring (light treatment) |  | 4 |
| Coordinate reproduction with sales |  | 4 |

### Survey:

A summary of the Sm@rt PLF survey on French results was presented and discussed. Globally the results are not surprising for stakeholders.

## France (Dairy sheep):

### Date and place of the NWS 1:

Thursday 24th August 2021, 9:30 am to 4 pm, face to face meeting at La Cazotte (dairy sheep Digifarm).

### Present:

**Number of participants: 16**

Jacques Mouls (farmer), Carla Gava (GIE Elevage Occitaniee), Nadine Enjalbert (farmer), Valérie Serin (farmer), Lionel Vasselle (le Petit Basque), Céline Pouget (Veterinary), Cécile Bailly (Confédération de Roquefort), Cindy and Lionel Courbier (farmers), Sara Parisot (INRAE La Fage), Lisa Feldmann (CNBL), Alain Hardy (farm manager of La Cazotte) Barbara Fança (Idele), Blandine Fagot (Idele), Laurence Depuille (Idele), Caroline EVRAT-GEORGEL (Idele)

### Apologies:

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### Organisation:

Ice breaker: Everyone chose a card, introduced himself and described with his card what new technology mean to him. In summary, the new technologies evoked:

* A key for some difficult, response to the lack of work force
* A balance to be find between farmers and new technologies
* Better monitoring
* Necessary to go step by step, new technologies have to be a help and not a burden

Laurence welcomed everyone and presented the objectives and schedule of the day. Then she presented the Sm@RT project (objectives, network, partners…).

Caroline introduced the group exercise, which was to identify the needs and challenges of SR producers under the following 5 topics:

1. Feeding/grazing
2. Milking
3. Flock management
4. Reproduction
5. Health/welfare

For each of the above 5 headings the attendees were asked to identify what they consider is easy to do in the farmer work and what is difficult/boring/time consuming and could be done in a more efficient, fast and/or less labour intensive way. The participants were divided into five groups to work on one topic. A summary and discussion were done to complete each topic.

After the presentation and discussion on the survey results, a lunch and a visit of the Digifarm were organized.

### Needs identified and votes/prioritization:

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| Feeding / Grazing |
| Need / challenge | **Number of votes** | **Prioritization** |
| Monitoring of pastures, fences, dog |  | 3 |
| Monitoring the herd at pasture (cameras, predation) |  | 2 |
| Link between different tools (inter-operability) |  | 5 |
| Reliability / Repeatability of quality measures and quality of the forage |  | 1 |
| Link between feeding and production |  |  |
| Monitoring of fences |  |  |
| Feed management software |  |  |
| Feeding transition between pasture and barn |  | 5 |

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| Milking |
| Need / challenge | **Number of votes** | **Prioritization** |
| Automatisation of the cleaning of milking parlour (with alerts if problems) |  | 2 |
| Monitoring of health of the udder (cells…) |  | 1 |
| Link between different milking (alerts of production changing, treatment…) |  | 2 |
| Need progress on automatic release |  | 3 |
| Need of a software intuitive to have all information of the milking |  | 4 |

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| Health / Welfare |
| Need / challenge | **Number of votes** | **Prioritization** |
| Treatment of all the herd is time consuming |  |  |
| Early detection / tools to prevent diarrhea in lambs |  | 2 |
| Need of references on water consumption on ewes |  | 3 |
| Monitor the distribution of the concentrates for each stage of growth / each animal |  | 1 |
| Cleaning |  | 3 |
| Early detection of troubles in animal welfare |  | 4 |
| Need help to monitor / organise the work |  | 4 |

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| Reproduction |
| Need / challenge | **Number of votes** | **Prioritization** |
| Develop echographies to know how many lambs the ewe is carrying |  | 3 |
| Electronique Identification in dynamique (UHF ?) |  | 2 |
| Organisation to have an easier period of breeding |  |  |
| Batching for breeding |  | 1 |
| Better method for cutting off the tails of lambs |  | 4 |

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| Flock management |
| Need / challenge | **Number of votes** | **Prioritization** |
| Double entry of data (dead animals?) |  |  |
| Identification of ewes for breeding (camera) |  | 5 |
| Electronic Identification of the lambs is time consuming |  |  |
| Milk quality control in link with the health of the udder |  | 2 |
| Interoperability between tools |  | 1 |
| Developing new technologies keeping in mind farmer welfare |  | 3 |
| Robust tool |  | 5 |
| Recording of breeding and health |  | 4 |

### Survey:

A summary of the Sm@RT PLF survey on French results was presented and discussed. Globally the results were surprising for stakeholders, because of the number of negative answers to the adoption of tools. After discussions, we thought that this answers were due to the solid organization of the sector and the proximity between farmers and technicians.

## France (Dairy Goat):

### Date and place of the NWS 1:

Thursday 10th September 2021, 9:30 am to 4 pm, face to face meeting at Le Pradel (dairy goat Digifarm).

### Present:

**Number of participants: 17**

Laurent Balmelle (Cap’Pradel), Sylvain Balmelle (farmer), Pierre Ulrich (Farm manager of Le Pradel), Alain Pommaret (Le Pradel), Claire Boyer (Idele), Elodie Fray (CFPPA), Margot Brie (GDS07), Pollo and Johana Gollart Melia (farmers), Marine Minier (Idele) Valerie Bereulle (SC 26) Virginie Hervé-Quartier (Idele - La chèvre), Bastien Brisson (farmer), Guilhem Rudelle (farmer), Philippe Thorey (Idele), Laurence Depuille (Idele), Jean-Marc Gautier (Idele)

### Apologies:

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### Organisation:

Ice breaker: Everyone chose a card, introduced himself and described with his card what new technology mean to him. In summary, the new technologies evoked:

* A key for some difficult, possibility to go forward
* A possibility but not the unique solution
* Need of training
* Have data / alerts without being on the farm

Laurence welcomed everyone and presented the objectives and schedule of the day. Then she presented the Sm@RT project (objectives, network, partners…).

Philippe introduced the group exercise, which was to identify the needs and challenges of SR producers under the following 5 topics:

1. Feeding/grazing
2. Milking
3. Flock management
4. Reproduction
5. Health/welfare

For each of the above 5 headings the attendees were asked to identify what they consider is easy to do in the farmer work and what is difficult/boring/time consuming and could be done in a more efficient, fast and/or less labour intensive way. The participants were divided into five groups to work on one topic. A summary and discussion were done to complete each topic.

After the presentation and discussion on the survey results, a lunch and a visit of the Digifarm were organized.

### Needs identified and votes/prioritization:

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| Feeding / Grazing |
| Need / challenge | **Number of votes** | **Prioritization** |
| Recording of forage distributed |  | 2 |
| Evaluation of forage quality and comparison to references |  | 1 |
| Interoperability of grazing tools and with over tools (herd monitoring software) |  | 3 |
| Recording of feed intake times on pasture |  | 4 |
| Fences monitoring, spend less time for fences |  | 2 |

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| Milking / Transforming |
| Need / challenge | **Number of votes** | **Prioritization** |
| References on tools for milking and comparison |  |  |
| Constraint morning and evening |  |  |
| Identification of treated goats to separate the milk |  | 2 |
| Monitoring of automatized cleaning (still product, power blackout…) |  | 1 |
| Link between breeders and suppliers |  | 3 |
| Alerts for changing consumables (tips, sleeves…) |  | 4 |
| Temporal organisation |  | 3 |
| Monitoring of transformation parameters (T°, pH, acidity…) |  | 2 |
| Monitoring of batches, delivery notes, customer files, stock… |  | 1 |
| Training to communication on social media for sales / Tool to easily communicate |  |  |
| Early detection of transformation troubles / References |  | 4 |
| Automatic comptability |  |  |

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| Health / Welfare |
| Need / challenge | **Number of votes** | **Prioritization** |
| Early detection of health troubles |  | 4 |
| Reactivity of veterinarians |  | 3 |
| References on plants and essential oils (aromatherapy) |  |  |
| Observation of changing behaviour |  | 2 |
| Help with administrative work |  | 1 |
| References on existing tools |  |  |
| Software to share information (on the farm and with technicians, veterinarians…) |  | 5 |

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| Reproduction |
| Need / challenge | **Number of votes** | **Prioritization** |
| Heat detection |  | 1 |
| Deseasoning (light treatment) |  | 3 |
| Knowing the availability of artificial insemination doses |  | 3 |
| Climate/Shed management and measurement |  | 2 |
| Automatic estimation of BCS |  | 2 |

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| Flock management |
| Need / challenge | **Number of votes** | **Prioritization** |
| Valorisation of electronic identification  |  | 2 |
| Monitoring of grazing (parasitism) |  | 3 |
| Sorting of goats at milking (identification of treatments) |  |  |
| Help with administrative work (Outside transport, slaughter) |  |  |
| Health management (treated animals, abortion…) |  | 1 |
| Valorisation of genealogical data |  |  |

### Survey:

A summary of the Sm@RT PLF survey on French results was presented and discussed. Globally the results were not so surprising for stakeholders.

## Estonia (meat sheep + Dairy Goat/Dairy Sheep)

### Date and place of the NWS 1: October 4, 2021, 1 p.m-3 p.m., virtual meeting

Present: Peep Piirsalu (EULS), Maria Soonberg (EULS), Kermo Rannamäe (digifarmer, Andri Peedo goat farm, Andri Peedo Talu OÜ), Dennis Pretto (innovative farmer, dairy sheep, Viinamärdi OÜ), Kaisa Tähe (innovative farmer, dairy sheep, Männiku Piimalambad OÜ), Hugo Vaino (innovative farmer, meat sheep, Rehekivi OÜ), Tiina Vaino (meat sheep, Rehekivi OÜ), Karen Nunez Arm (innovative farmer, meat sheep, Mahese OÜ), Hillar Kalda (interested farmer, meat sheep, Hillar Kalda FIE), Rein Mirka (interested farmer, meat sheep, Wasala OÜ), Vallo Seera (Estonian Sheep and Goat Association), Morgan Hammerbeck (innovative farmer, meat sheep, Rägavere Mõis OÜ)

**Number of participants: 12**

Apologies: Anne Grünberg (dairy goat, Üvasi Talu OÜ)

### Organisation:

Agenda:

•13. -Welcome/

•13.15-13.20 Project presentation- Peep Piirsalu

•13.20 -14.30 Group exercises in breakout rooms + feedback (Peep-Meat sheep +Maria Soonberg- dairy goat/dairy sheep)

•14.30-14.45 Break

•14.45 -15.00 Presentation of the survey results (Peep) & discussion (Maria)

•15. 00 -15.15 Concluding remarks

Peep thanked everyone for attending. Everyone introduced himself. Peep gave a brief overview of the Sm@rt project, the partners involved, objectives of the project and levels of networking (i.e. digifarm and innovative farms). Peep introduced the group exercise, which was to identify the needs and challenges of meat sheep sector under the following 5 headings:

a) Feeding/grazing

b) Health/welfare

c) Flock/herd management

d) Reproduction

e) Fattening

Maria introduced the group exercise, which was to identify the needs and challenges of dairy goat/dairy sheep sector under the following 6 headings:

1. Feeding/grazing)
2. Health/Welfare
3. Herd monitoring
4. Reproduction
5. Milking
6. Processing/marketing

For each of the above headings the attendees were asked to identify what they consider is difficult/boring/time consuming and could be done in a more efficient, fast and/or less labour intensive way. The attendees were divided into two breakout rooms. Group A was facilitated by Peep (Meat sheep) and group B by Maria (Dairy goat/dairy sheep). Following the breakout rooms, all attendees discussed about headings and voted for the top 2 needs/challenges in each subject area.

### Needs identified and votes/prioritization: Meat sheep

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| Feeding / Grazing |
| Need / challenge | **Number of votes** | **Prioritization** |
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| **Making fences, especially wolf free fences** |

 |  | 1 |
| Mowing grass under wireline |  | 2 |
| How to avoid bulling ewes during concentrate feeding?Inconvenience sorting of ewes |  |  |
| Every day flock control in a very large area of pasture |  |  |
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| Fattening |
| Need / challenge | **Number of votes** | **Prioritization** |
|  |  |  |
| Lambs always in one large group, bigger lambs push away smaller ones before weaning time and on pasture too |  |  |
| Parasites, when to start with treatments? |  | 1 |
| Aditional feeding lambs during weaning time |  |  |
| Timely weaning (weaning time rations) |  | 2 |
|  |  |  |

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| Health/welfare |
| Need / challenge | **Number of votes** | **Prioritization** |
| Treatment of parasites and its timeliness |  | 1 |
| Control of large predators and birds of prey- ravens |  | 2 |
| Availability of drugs is limited, no all drugs are available in Estonia what exists elsewhere |  |  |
| Undernutrition of ewes in many flocks around Estonia, using low quality feed |  |  |
| Incompetence of ewe body scoring |  |  |

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| Flock/herd management |
| Need / challenge | **Number of votes** | **Prioritization** |
| Low use of electronic eartags and related grouping of low use of modern technologies (weighing cages and other equipments) |  | 1 |
| Lack of modern animal transport trucks |  |  |
| Lack of weight data, gaps in ewe body condition scoring, not done |  |  |
| Lack of know how in average farm |  |  |
| Difficulties of foot trimming |  | 2 |
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| Reproduction |
| Need / challenge | **Number of votes** | **Prioritization** |
| Managing several mating groups during matings |  | 1 |
| Protection of different mating groups at a time of matings |  |  |
| Aborts cases when herds are disturbed (controls-humans, predators, dogs) |  |  |
| Availability issues of new breeding material from abroad and in a country (many breeds with small numbers of animals) |  | 2 |
| Handling problems of ewes in large flocks (scary due predators or people) |  |  |
| Shortage of feed analyses (aborts due poor feed) |  |  |

### Needs identified and votes/prioritization: Dairy goat/dairy sheep

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| Feeding / Grazing |
| Need / challenge | **Number of votes** | **Prioritization** |
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| Ticks--> goat treatment |

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| Lack of special feeds (concentrates) for milking goats and milking sheep |  |  |
| Organic feed is very expensive or in limited quantities in a market |  |  |
| Lack of feeding specialist |  | 1 |
| During grazing: fly control (organic needed) |  |  |
| Predators control |  | 2 |

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| Health / Welfare |
| Need / challenge | **Number of votes** | **Prioritization** |
| Artificial insemination- no firms, no knowledge of doing |  |  |
| No firms- for foot trimming |  |  |
| Missing medicine, even common medicine,  |  |  |
| Shortage of milk powder |  |  |
| Tick control |  | 1 |
| Flies control |  | 2 |

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| Milking |
| Need / challenge | **Number of votes** | **Prioritization** |
| Special milking equipment cannot be bought inner market, spare parts need to be ordered abroad, lack of spare part for milking machines |  | 1 |
| Repair and maintenance is complicated |  |  |
| Lack of labour force |  | 2 |
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| Reproduction |
| Need / challenge | **Number of votes** | **Prioritization** |
| Shortening lambing/kidding periods? |  |  |
| Missing hormones for syncronisations, syncronisation hormones not allowed |  |  |
| Lack of pregnancy scanning techinicians (vets) |  |  |
| Lack of breeding sires  |  | 2 |
| Complicated transport of breeding animals |  |  |
| Target feeding of pregnant ewe. How to feed to get more PREGNANT females |  | 1 |

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| Herd monitoring |
| Need / challenge | **Number of votes** | **Prioritization** |
|  |  |  |
| Kidding/lambing control- solution is cameras |  |  |
| Animal activity control- solution temperature sensors |  |  |
| Sensors (ear sensors, foot sensors) for milk performance recording Shed environment (humidity) control is difficult |  | 1 |
| Performancece testing is expensive and no one has joined |  |  |
| For PRIA (State Animal Register) each animal data requiered to enter one by one |  | 2 |

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| Processing, marketing |
| Need / challenge | **Number of votes** | **Prioritization** |
|  |  |  |
| Difficulties making packing design |  |  |
| Early detection of transformation troubles, How to communicate to customers (sheep) |  |  |
| Logistic of milk products to the markets (different cities, shops etc)How to get into chain sales |  |  |
| Customers are not used with goat and sheep milk products |  |  |
|  |  |  |

### Survey:

A summary of the Sm@rt PLF survey was presented by Peep to the all attendees and after that discussion on that topic to the .

## Hungary: Meat SHEeP

### Date and place of the NWS 1: 2021. 08.18. Wednesday, face to face meeting at the University of Debrecen (FarmerExpo)

### Present:

**Number of participants: 12**

**János Oláh (farmer, UNIDEB), Krisztina Sándor (Hungarian Sheep and Goat Breeders Ass.), Máté Minárovics (farmer), István Egerszegi (MATE Gödöllő), Sándor Harangi (farmer), Levente Lajkó (farmer), Imre Varga (farmer), Csaba Eszterhai (farmer), Mátyás Holló (farmer), István Monori (Alfaseed Kft), Mariann Tóth (UNIDEB), Orsolya Nagy (UNIDEB)**

### Apologies:-

### Organisation:

Introduction

Presentation of the Sm@RT project

Group work, Chat about the new technologies

### Needs identified and votes/prioritization:

|  |
| --- |
| Feeding / Grazing |
| Need / challenge | **Number of votes** | **Prioritization** |
| Link between the state of the animals, feeding tab and distribution | 3 | 1 |
| In pasture, distribute the concentrate with all the ewes around you | 2 | 2 |
| Grazing monitoring (pasture optimisation, virtual fences, connected fences, grass growth...) | 3 | 1 |
| Physic, repetitive work | 1 | 3 |
|  |  |  |

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| --- |
| Fattening |
| Need / challenge | **Number of votes** | **Prioritization** |
| Valorisation of digital technologies (cost, use of technologies at some periods) | 2 | 3 |
| Lamb weighing (in barn and also in pasture) | 2 | 2 |
| Body condition score evaluation | 3 | 1 |
| Lamb sorting, manipulations, moving | 2 | 3 |
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| Milking |
| Need / challenge | **Number of votes** | **Prioritization** |
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| --- |
| Health / Welfare |
| Need / challenge | **Number of votes** | **Prioritization** |
| Early detection of health issues | 4 | 1 |
| Need tools to observe animals and help the farmer for the decision | 2 | 2 |
| Tools adaptation needed for each farm | 2 | 2 |
| Mutualisation of individual health data and all other data | 1 | 3 |
|  |  |  |
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| --- |
| Reproduction |
| Need / challenge | **Number of votes** | **Prioritization** |
| Herd/flock management software which integrate all data from devices + easy transfer from one device to another | 2 | 3 |
| Monitor the reproduction (tool to identify ewes for insemination) | 4 | 1 |
| Deseasoning monitoring (light treatment) | 3 | 2 |
| Automatized following of the reproduction (warnings at every steps) | 1 | 4 |
|  |  |  |

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| --- |
| Flock management |
| Need / challenge | **Number of votes** | **Prioritization** |
| Recognising and/or weighing your sheep automatically | 3 | 1 |
| Identification of ewes for breeding (camera) | 3 | 1 |
| Interoperability between tools | 2 | 2 |
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|  |  |  |
|  |  |  |

### Survey:

## ITALY

### Date and place of the NWS 1:

Friday 1st October 2021, 11:00 am to 13:00 am, virtual meeting on Zoom platform.

### Present:

**Number of participants goat’s group: 15**

1. Giuseppe Ena (Farmer), 2. Tatiana Tatti (Farmer), 3. Francesco Pala (Farmer), 4. Valentina Onnis (Farmer), 5. Alberto di Felice (Farmer), 6. Andrea Dessì (Farmer), 7. Pietro Scanu (Farmer), 8. Alberto Atzori (University, Professor), 9. Filippo Boe (Consultant), 10. Antonio Piras (Consultant), 11. Guido Bruni (Consultant), 12. Ruggero Bizzarri (Consultant), 13 Mauro Decandia (AGRIS), 14. Valeria Giovanetti (AGRIS), 15. Maria Sitzia (AGRIS).

**Number of participants sheep’s group: 14**

1. Michele Riu (Farmer), 2. Natale Ghironi (Farmer), 3. Elena Mazzitelli (Farmer), 4. Giuseppe Sechi (Farmer), 5. Giovannantonio Sanna (Farmer), 6. Luigi Buschettu (Farmer), 7. Gavino Arca (Farmer), 8. Alessandro Cugusi (Farmer), 9. Luisella Zanda (Farmer), 10. Antonello Cannas (University, Professor), 11. Giovanni Pinna (Consultant), 12. Marco Acciaro (AGRIS), 13. Carla Manca (AGRIS), 14. Giovanni Molle (AGRIS).

### Apologies:

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### Organisation:

Valeria Giovanetti welcomed all participants and asked to introduce themselves specifying their job, animal species and farm location. She presented program of the day and the Sm@rt project specifying the main objective, partners involved, levels of the networking and steps of the work plan. Then she introduced the digifarm located in Bonassai (AGRIS Sardegna) and Prof. Antonello Cannas presented the one located in Ottava (University of Agriculture, Sassari).

Valeria introduced the group exercise which was to talk about (with Digital Technologies in mind) the difficulties/challenges faced by farmers regarding 5 themes:

- Feeding/grazing

- Health/Welfare

- Flock/herd management

- Milking

- Reproduction

- Fattening

For each of the above 5 headings the attendees were asked to identify what they consider is easy to do in the farmer work and what is difficult/boring/time consuming and could be done in a more efficient, fast and/or less labour intensive way.

The attendees were divided into two breakout rooms, one for sheep and one for goats depending on their profession. Sheep group was facilitated by Marco Acciaro and Carla Manca while goats group was facilitated by Mauro Decandia and Valeria Giovanetti. Both groups discussed all topics listed above for at least 10 minutes/topic, then attendees of each group voted for the top 2 needs/challenges in each subject area.

### Needs identified and votes/prioritization: GOATS

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| --- |
| GOATS Feeding / Grazing |
| Need / challenge | **Number of votes** | **Prioritization** |
| Individual requirements | 2 |  |
| Establishment of homogeneous groups | 4 |  |
| Improvement of forage quality | 6 |  |
| BCS | 0 |  |
| Competition between animals | 1 |  |
| Forage distribution in the trough | 0 |  |
| Concentrate distribution at milking or in the box | 3 |  |
| Milk quality | 1 |  |
| Chemical analysis of feedstuff in the farm | 4 |  |
| Increase of herbage availability and quality | 1 |  |

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| --- |
| GOATS Milking |
| Need / challenge | **Number of votes** | **Prioritization** |
| Individual milk production | 9 |  |
| Lactation curve prediction | 0 |  |
| Improvement of lactation persistency | 6 |  |
| Individual milking supplement administration based on animal's needs | 3 |  |
| Washing water control | 0 |  |
| Dipping | 0 |  |
| Milking machine management | 3 |  |

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| --- |
| GOATS Health / Welfare |
| Need / challenge | **Number of votes** | **Prioritization** |
| CAEV | 4 |  |
| Visnamedi | 0 |  |
| Health checks of purchased animals | 4 |  |
| Control of Milk quality  | 1 |  |
| Blood analysis | 1 |  |
| Animal health control plan | 4 |  |
| Better knowledge of animal eco-environmental needs | 5 |  |

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| --- |
| GOATS Reproduction |
| Need / challenge | **Number of votes** | **Prioritization** |
| Optimal management of rams | 5 |  |
| Concentration of deliveries | 7 |  |
| Optimization of Artificial insemination service  | 3 |  |
| Animal management during peripartum period  | 6 |  |
| Ram's morpho-phisiologic check | 0 |  |
| Optimal management of rams | 5 |  |
| Concentration of deliveries | 7 |  |

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| --- |
| GOATS Herd/flock monitoring |
| Need / challenge | **Number of votes** | **Prioritization** |
| Management of homogeneous groups by age and physiological stage of animals | 6 |  |
| Optimal management of rams | 2 |  |
| Concentration of deliveries | 3 |  |
| Management software | 3 |  |
| Farm's conomic evaluation software  | 4 |  |
| Automatic data recording | 4 |  |
| Optimal management of rams | 6 |  |
| Concentration of deliveries | 2 |  |
| Increase of herbage availability and quality | 1 |  |

### Needs identified and votes/prioritization: SHEEP

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| --- |
| SHEEP Feeding / Grazing |
| Need / challenge | **Number of votes** | **Prioritization** |
| Diet quantity: automatic feeder wagon  | 1 |  |
| Diet quality in the loading phase: eg Nirs applied to the mixer wagon | 4 |  |
| Homogeneous distribution of the diet | 2 |  |
| Pasture improvement and pasture management | 5 |  |
| Herbage availability and composition  | 6 |  |

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| --- |
| SHEEP Milking |
| Need / challenge | **Number of votes** | **Prioritization** |
| Individual milk production | 7 |  |
| Ease and milking times | 3 |  |
| Identification of animals with problems | 3 |  |
| Separation of animals with problems | 2 |  |
| Pre and post dipping management | 3 |  |

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| --- |
| SHEEP Health / Welfare |
| Need / challenge | **Number of votes** | **Prioritization** |
| Environmental conditions monitoring | 5 |  |
| Prevention and early diagnosis of mastitis | 9 |  |
| Prevention and diagnosis of lameness | 1 |  |
| Separation of animals with presumed pathologies | 1 |  |
| Early diagnosis of some infectious diseases (rams) | 2 |  |

|  |
| --- |
| SHEEP Reproduction |
| Need / challenge | **Number of votes** | **Prioritization** |
| Cycle and heat identification | 8 |  |
| Early pregnancy diagnosis | 8 |  |

|  |
| --- |
| SHEEP Herd/flock monitoring |
| Need / challenge | **Number of votes** | **Prioritization** |
| Group formation | 7 |  |
| Targeted rationing | 6 |  |
| Interoperability (connection between various devices) | 5 |  |

### Survey:

A summary of the Sm@rt PLF survey undertaken on Italian and in the 8 partner countries was presented to the attendees. Globally the results are not surprising for stakeholders.

## UK (meat sheep):

### Date and place of the NWS 1:

Tuesday 28th September 2021, Firth Mains Farm, Roslin, Scotland.

### Present:

**Number of participants: 14**

Claire Morgan-Davies (SRUC & coordinator), Ann McLaren (SRUC), Ailsa Thomson (SRUC), Daniel Stout (SAC Consulting), Laura Henderson (SAC Consulting), Ewen Campbell (SRUC Digifarm manager), Neil McGowan (Innovative farmer), Hamish McDonald and Karyn McArthur (Innovative Farmers), Kate, Marcus & Murphy Maxwell (farmers), Amy Garrioch (farmer), Zoe Allan (farmer)

### Apologies:

Fiona Kenyon (MRI) – present only in the afternoon, Fearn Farm (Innovative Farmer)

### Organisation:

Claire and Daniel welcomed everyone for attending. Claire gave a brief overview of the Sm@rt project including an overview of the use of PLF, the partners involved, objectives of the project and levels of networking (i.e. digifarm and innovative farms).

Claire & Daniel introduced the group exercise, which was to identify the needs and challenges of SR producers under the following 5 headings:

1. Feeding/grazing
2. Fattening
3. Flock management
4. Reproduction
5. Health/welfare

For each of the above 5 headings the attendees were asked to identify what they consider is difficult/boring/time consuming and could be done in a more efficient, fast and/or less labour-intensive way. The attendees were divided into 3 groups, with rapporteurs in each group. Ann facilitated and reported for reproduction & management; Ailsa facilitated and reported for feeding/grazing & fattening; Laura facilitated and reported for health & welfare.

Each group got the opportunity to discuss each topic. A plenary discussion and votes ensued (2 votes/stickers per person per topic).

### Needs identified and votes/prioritization:

|  |
| --- |
| Feeding / Grazing |
| Need / challenge | **Number of votes** | **Prioritization** |
| Snacker is difficult to manage in bad weather/wet ground |  |  |
| Moving electric fences is very time-consuming |  |  |
| Measuring grass heights (behind the quad) | 2 | 3 |
| Technology is not that simple (make it simple!) | 3 | 1 |
| Need an app to show how much sheep grazing days are left in a field | 2 | 3 |
| Need sensors on hopper/feeders to know which sheep are using it or not | 2 | 3 |
| Virtual fencing/easy to move fences - especially on hill ground where there are no fences | 3 | 1 |
| Understanding the best way to set-up an electric fence | 1 | 6 |
| Have an app for what fields the sheep are in and the associated grass heights. |  |  |

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| Fattening |
| Need / challenge | **Number of votes** | **Prioritization** |
| Setting up the scales on the weigh crate |  |  |
| Make sure your auto-drafter/new handling system fit your current handling system |  |  |
| Have an auto-drafter | 3 | 1 |
| Have a snacker |  |  |
| Drafting fat lambs - shed ewes off if weaned and lambs are away |  |  |

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| --- |
| Flock management |
| Need / challenge | **Number of votes** | **Prioritization** |
| Lack of similar chargers/compatibility of cables between the various tools | 1 | 6 |
| Lack of ease to transfer from kit to the phone or the computer | 3 | 3 |
| Lack of support services once you have bought the kits | 5 | 2 |
| Need a tag reader on gates to collect IDs | 2 | 4 |
| Need facial recognition of sheep | 2 | 4 |
| Need better tag reading distance | 6 | 1 |

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| --- |
| Health / Welfare |
| Need / challenge | **Number of votes** | **Prioritization** |
| Recording batch numbers/drugs, particularly for withdraw period |  |  |
| Not overdrenching - so having an autodrench gun based on weight would be great | 4 | 2 |
| Lameness - how to separate the animals |  |  |
| Lameness - physical turning of animals |  |  |
| Identify the infected animals by worms |  |  |
| Identifying the sick animals for a better follow up | 7 | 1 |
| Recording/collecting/analysing health data is time-consuming | 2 |  |
| Extra handling due to health at key periods (busy enough) |  |  |
| Early identification of mastitis | 1 | 4 |
| Internal scanning to see internal problem | 1 | 4 |
| BCS - volume of sheep | 3 | 3 |

|  |
| --- |
| Reproduction |
| Need / challenge | **Number of votes** | **Prioritization** |
| A tool that can measure BCS | 2 | 1 |

### Survey:

The survey results on PLF use in the 8 partner countries was presented to the attendees, with a focus on the UK results. Attendees thought that the results from the survey reinforced the issues discussed within the groups.

After lunch, a farm visit was organized. Attendees had the opportunity to see the technologies used on Firth Mains farm and the latest research trials undertaken by the colleagues from Moredun Research Institute on targeted selective treatment using individual weight change, and animal behaviour monitoring with/without parasite burden.

## ISRAEL:

### Date and place of the NWS 1:

Thursday 15th Aug 2021, Zoom meeting.

### Present:

**Number of participants: 45**

Alon (ARO), Ilan (ARO), Dorit (MOAG), Samir (MOSG), Ami (Farmer), Saed (Farmer), additional participants names on file.

### Organization:

Each introduced himself/herself shortly and described their expertise.

Alon welcomed everyone and presented the objectives and schedule of the day. Then presented the Sm@RT project (objectives, network, partners…).

Introduced the group exercise, which was to identify the needs and challenges of SR producers under the following 5 topics:

1. Feeding/grazing
2. Finishing/fattening
3. Flock management
4. Reproduction
5. Health/welfare

For each of the above 5 headings the attendees were asked to identify what they consider is easy to do in the farmer work and what is difficult/boring/time consuming and could be done in a more effective and efficient way. The participants were divided into three breakout rooms to work on the topics (the topic “flock management was distributed in each group because of the number of participants). A summary and discussion were done to complete each topic.

### Needs identified and votes/prioritization:

|  |  |  |
| --- | --- | --- |
| Reproduction | Adapt feeding and prolificacy | 2 |
| Herd/flock monitoring | Recognizing and/or weighing your sheep automatically | 3 |
| Feeding / Grazing | Identification of sick animal, move animals in big lots | 3 |
| Health / Welfare | Following of water consumption | 2 |
| Health / Welfare | Detection common parasites | 3 |
| Health / Welfare | Early detection of health issues  | 3 |
| Health / Welfare | (early) Identification of sick animal for a better follow (mastitis, worm, etc.) | 3 |
| Health / Welfare | How to separate the animals who are lame? | 2 |
| Fattening | Lamb weighing (in barn and also in pasture) | 3 |
| Fattening | Lamb sorting, manipulations, moving | 3 |
| Fattening | Parasitism detection | 3 |
| Fattening | Setting up the weighing scales | 2 |

## NORWAY

### Date and place of the NWS 1:

Friday 24th November 2021, 12:00 am to 15:00 am, virtual meeting on Zoom

### Present:

**Number of participants 13**

Lise Grøva, researcher NIBIO

Unni S Lande, researcher NIBIO

Berit Blomstrand, researcher NORSØK

Skjetlein Agricultural college (5 adult diploma students (voksenagronomen))

Kristian Indreeide, Sheep farmer, styremedlem i NSG

Eli Kristin Aalbu Sæther – farmer and county fylkessekretær NBS og bonde

Marianne Aas Halse – County Governor agriculture secdtor in Møre og Romsdal

Torhild Svisdal Mjøen – sheep farmer and advisory service

Oscar Hovde – NoFence

### Apologies:

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### Organisation:

Lise Grøva welcomed all participants and asked to introduce themselves. The agenda of the meeting was presented and both TechCare project and Sm@RT prosject was presented.

After the introduction the group exercise of identifying the most important challenges faced by farmers was presented. These were presented within the 6 themes:

- Feeding/grazing,

- Health/Welfare

- Flock/herd management

- Milking

- Reproduction

- Fattening

For each of the above 5 headings the attendees were asked to identify what they consider is difficult/ or time consuming and could be done in a more efficient, fast and/or less labor intensive way if assisted by technology and digital tools.

### Needs identified and top prioritization: SHEEP

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| --- |
| SHEEP Feeding / Grazing |
| Need / challenge | **Number of votes** | **Prioritization** |
| Making fences |  |  |
| Maintaining fences |  |  |
| Expensive technology (NoFence, GPS) - needs improvements |  |  |
| Lamb survailance on pasture |  | 1 |
| Lamb proximity sensors  |  |  |
| How to deal with predators |  |  |
| Get information on behaviour on pasture (accelerometer information) |  | 2 |

|  |
| --- |
| SHEEP Health / Welfare |
| Need / challenge | **Number of votes** | **Prioritization** |
| Timely treatment of parasites |  |  |
| Parasite warning system (from climated data?) |  | 2 |
| High cost with parasite analysis |  |  |
| Regular monitoring of weight  |  |  |
| Access to sufficient indoor area (to high animal density) |  |  |
| What is sufficent indoor area needs ? |  |  |
| Using data recorded in the Sheep recording system |  |  |
| Udder health/mastitis |  | 1 |

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| --- |
| SHEEP Reproduction |
| Need / challenge | **Number of votes** | **Prioritization** |
| Detection of ewes in 'high heat' for timing of insemination (AI) |  | 1 |

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| --- |
| SHEEP Herd/flock monitoring |
| Need / challenge | **Number of votes** | **Prioritization** |
| Knowhow related to use of data from Sheep recording system |  | 1 |
| Knowhow related to use of existing data (RFID, weather stations, GPS collars etc) |  |  |

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| --- |
| SHEEP Fattening |
| Need / challenge | **Number of votes** | **Prioritization** |
| Parasite detection |  | 1 |

### Survey:

A summary of the Sm@rt PLF survey undertaken in Norway and in the 8 partner countries was presented. There was consensus to the results giving a relevant picture of the current perception.

# Annexes

## Annex 1

1. **Workshop objective:**
	1. ***Objective:*** Present Sm@RT project to stakeholders, collect their husbandry/management needs and challenges that could be helped with technologies, and present the survey results.
	2. ***Target group:*** *farmers, advisors/technicians and innovative farmers/digifarms*
2. **Demonstration farm:**
* The idea is, if possible, to have a farm visit before or after the workshop. That may not be possible due to the different Covid19 restrictions.
* If this is an option, ideally, the farm should be one of the digifarms or a farm which uses technologies. It should be easy to travel to and it should have the capacity to welcome a group of 15-20 people (or more).
* Otherwise, you can conduct the meeting on Zoom.
1. **Workshop set-up:**
* Plan for ~2.5 to 3 hours (2 hours if on Zoom)
* Inside (or in a shed) with PPT facilities, and large enough for creating small groups of discussions. OR VIA ZOOM, AS DISCUSSED
* Plan for refreshments if possible
* Plan for 15-20 people max (?) per production type. You may have to organise several meetings (or meetings in parallel) if you have more than one production to consider.

**Workshop contents proposition:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |
| **Session** | **Timing**  | **Objective of the session** | **Content – what are the participants doing ?**  | **Who does what** | **Material needed**  |
| Welcome | 20’(20’)That can be shorter if on zoom | General introductionIce breaker  | Introduction to the day, rules of workshops, health & safety dispositions, and quick agendaFrom your point of view, what is a new technology ? (response with cards/or in the chat on zoom, or with mentimeter or zoom poll)Or :Line on the ground – and ask people to position themselves according to flock size, or location (hill/upland/lowland), or breeds , etc.  | NF + colleague(s) | Cards (if we go for photo-language). Chalk/sticky tape |
| Project presentation | 15’(35’’) | Presentation of the project and its objectives (with definition of what we mean by new/digital technology) + digifarms+ quick presentation of the IFs (if present ?) -> using infographics slides |  | NF (+digifarm person + IFs) | Common PPT (Claire to prepare – NFs to translate) Digifarms/IFs - > use the infographics as support for the presentation |
| Identification of the needs and challenges  | 20’(55’) | Talk about the difficulties/challenges faced by farmers regarding 5 themes: * Feeding/grazing
* Health/Welfare
* Flock/herd management
* *Milking*
* Reproduction
* *Fattening*

*(with DT in mind)* | In small groups (or breakout rooms if on Zoom) : either 2 or 3 people (1 farmer/1 advisor/technician/1 researcher), answer 2 questions :« in my job, what is easy to do ? »& « in my job, what is difficult/complicated/tedious/boring/time-consuming, and could be done in a more efficient way, less hard-work, faster, etc ? Each small group will consider 2 themes (10’ per theme). Idea is to cover all themes across all the small groups. | NF + colleague  | Paper boards, flip charts, etc Post-it,  pensOr if in breakout rooms, have someone from the organisation team who takes notes. |
| Needs & challenges - feedback | 40’(95’) | Feedback to the whole group and additions if necessary (30’)Hierarchy of the needs (10’) | Presentation of the findings (flip-charts/boards) of all the small groups. If on Zoom, you can just have a rapporteur that briefly explains what you discussed in your group.Vote with stickers : each participant has 10 stickers (2 stickers per theme) This might be a bit difficult on Zoom – we could ask people to select 2 needs per theme, using Zoom poll or mentimeter. But that means that someone from the organisation team needs to quickly prepare a zoom poll based on the rapporteurs findings. You could decide to do this ranking after the break – so that you have time to prepare it.Or ask people to type their 4-5 main needs in the chat, based on what was presented. | NF + colleagueNF | Stickers |
| *BREAK* | *15’* |  |
| Survey results | 15’(125’)30’Could be only 15-20’ if on Zoom(155’) | Presentation of the survey results Discussion (to collect thoughts/gaps, etc.) | Survey results presentationSelect some (maybe only 1-2 if on Zoom) of the most chosen technologies in the country’s survey results and have a :Moving debate : have a line on the floor and ask people, for each technology, to position themselves on : not interested / very interested by the technology :And ask people :* Why would you not want to use this technology ? (reasons/motivations)
* If the issue is not technical, what are the barriers to you ?

Or:* Do you rather agree or rather disagree with the survey results ?

If on Zoom – breakout rooms and discuss 1-2 technologies, and ask the above questions) | NFNF/colleague+ 1 scribe | PPT (results for the country and for the consortium) Chalk/sticky tapeOn boards/flip charts – write down the answers given. |
| Techcare | 30’ | Choice of new technologies to be tested in TechCare | * Short presentation of new technologies (10’)
* Vote by show of hands or with stickers
 | Blandine |  |
| Conclusion  | 10’Can be much shorter on zoom(195’ -> 3 hours 15) | Next steps, and how we value their opinions and work todayPresentation of social media and website – keep in touch. Upcoming meetings | Participants put a smiley on a board :2 questions with 3 smileys (happy/neutral/unhappy): * Satisfied by the meeting
* Motivation to participate to other meetings/workshops (put the initials of the person or put their email address / Name in a box so we could recognize them?)
* On a Zoom poll or in the chat, to collect feedback.
 | NF | Claire to prepare 1-2 slides with the website and social media addresses and list of next meetings.A ‘hidden’ paper board with pens |