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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 727895.

SheepNet Session

- EAAP 26 August 2018

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INRA SCIENCE & IMPACT

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EKONOMIAREN GARAPEN ETA AZPIEGITURA SAILA
DEPARTAMENTO DE DESARROLLO ECONÓMICO E INFRAESTRUCTURAS

USAMVBT

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Agenda

Time	
16.15	Introduction
16.20	Presentation of SheepNet
16.35	From needs to solutions to improve ewe productivity
16.55	Scientific knowledge – ewe productivity
17.10	How to communicate with end users
17.25	Stay informed – use of social media
17.35	Audience feedback – solutions
17.55	Conclusions and what's next

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Sharing Expertise and Experience towards sheep Productivity through NETworking

Innovation and communication for better sheep productivity!

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Start	November 2016	Duration	3 years

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Jean-Marc Gautier
IDELE

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A network for the improvement of sheep productivity

EU production	Key production	Issue	SheepNet
• 84% self-sufficiency • Mainly located in less favoured areas • Important enterprise in low lands	• Sheep farming plays a significant economic role through direct and indirect activities	• The number of producers have declined by 50% since 2000	• To enhance sustainable productivity in sheep meat and milk farming

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SheepNet - Overall objectives

To set up a EU/international **Thematic Network on "sheep productivity"**

To stimulate **knowledge exchange** between research and stakeholders (end-users)

To value the input and knowledge of farmers and stakeholders

To **widely disseminate relevant best practices and innovations**

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3 key factors Affecting Sheep productivity

1 - Reproduction efficiency

Predators

Knowledge/skills

Diseases

Sheep productivity

Environment

Facilities

Management

Nutrition

Animals

3 - Reduce lamb mortality

2 - Gestation efficiency

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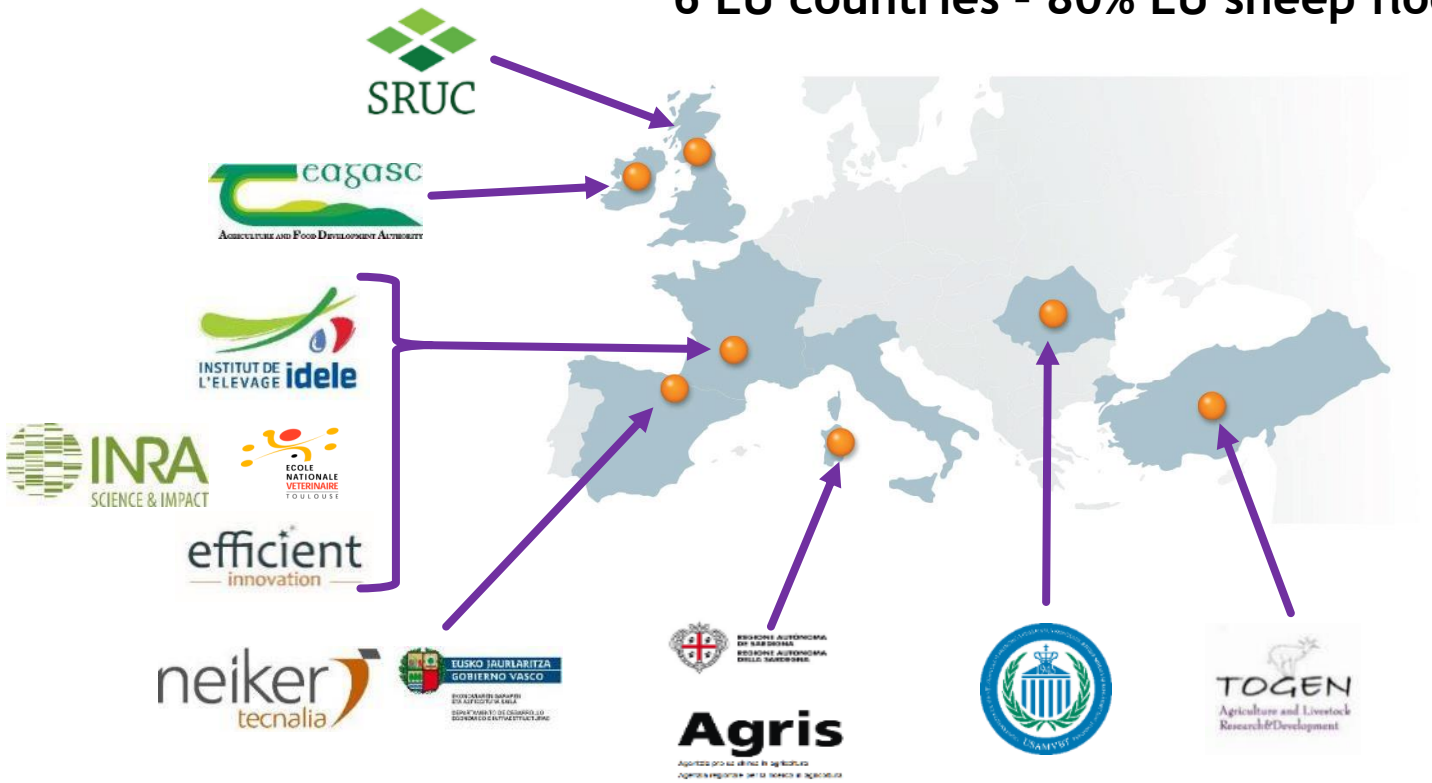
SheepNet –Partners

6 EU countries – 80% EU sheep flocks



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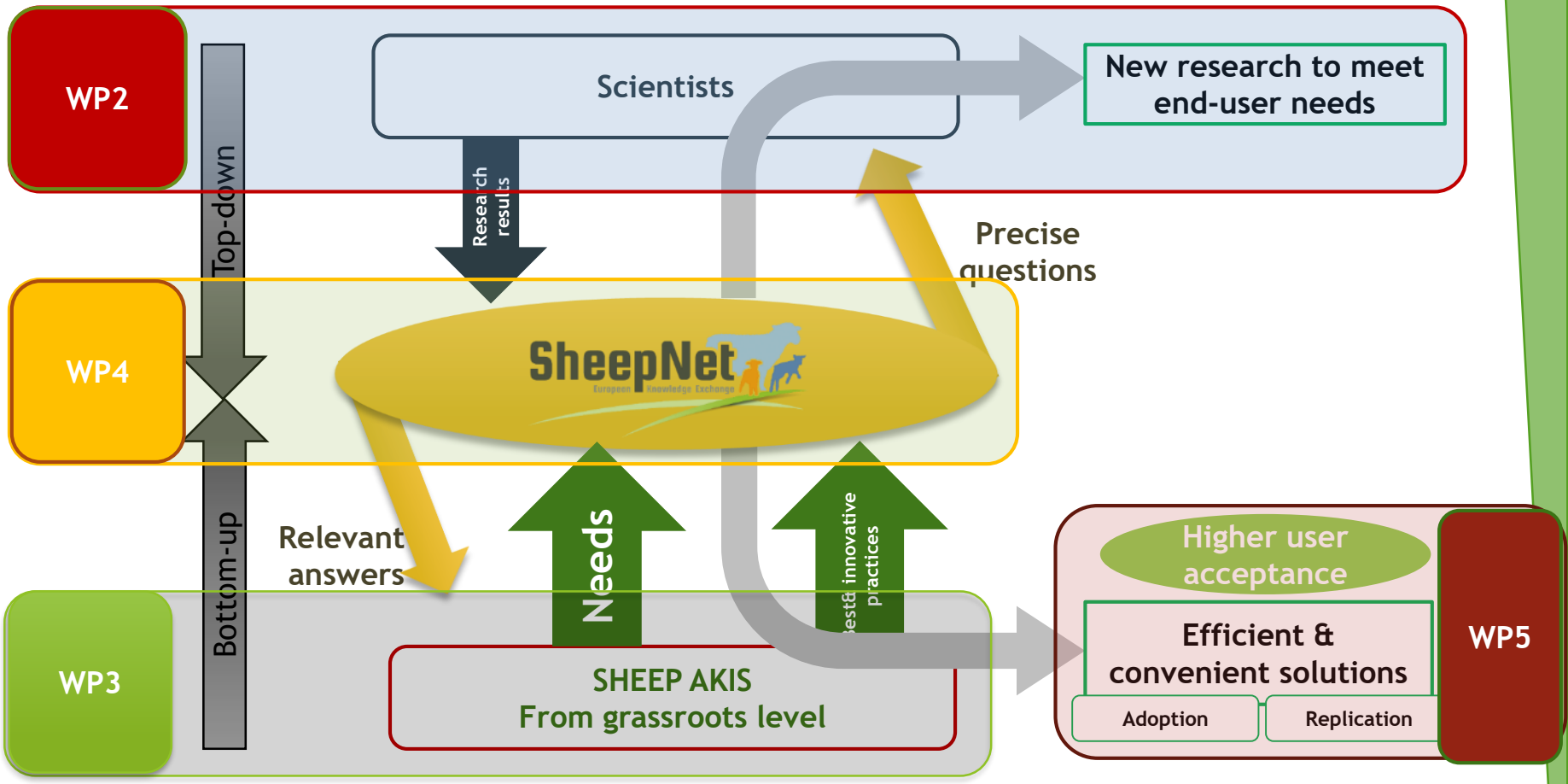
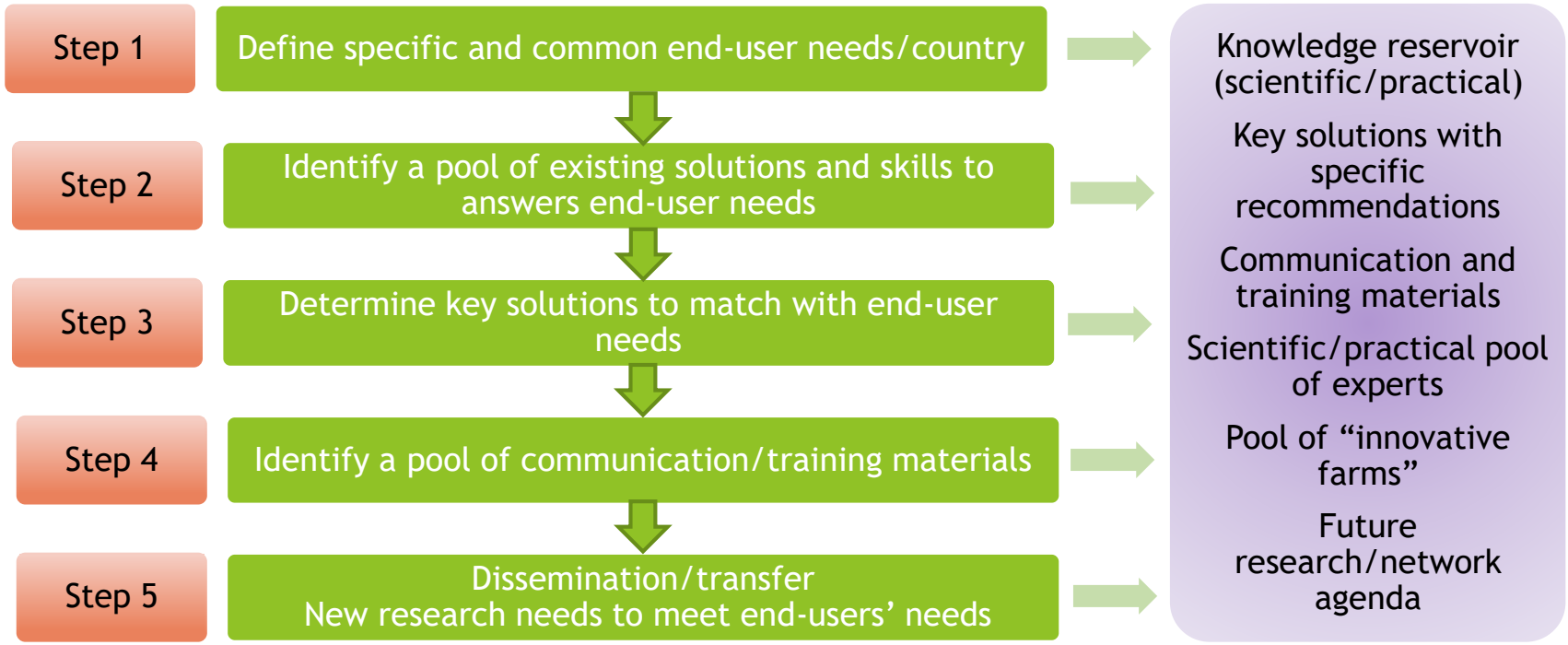
The cross-fertilisation approach



A methodology in 5 steps



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An open Network open to all sheep actors!
Join us!

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From needs to solutions to improve ewe productivity

Ruiz R., Beltrán de Heredia I.

NEIKER-TECNALIA, Spain

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Survey

Apr ‘17

Needs

National Workshops

1st NWS

Presentación of needs.
Any other needs?
Why are they a problem?

2nd NWS

Posible Solutions and selection.

3rd NWS

Presentation of solutions
Posible Tips and Tricks and proposal

4th NWS

Solutions based on EID & PLF

National Scientific and Technical Working Group

June ‘17

Presentation of needs per country
Any solution per country?

Nov ‘17

2 sol. / topic / country
Best solutions

June ‘18

10 T&T / country
Best T&T

Nov ‘18

Solutions based on EID & PLF

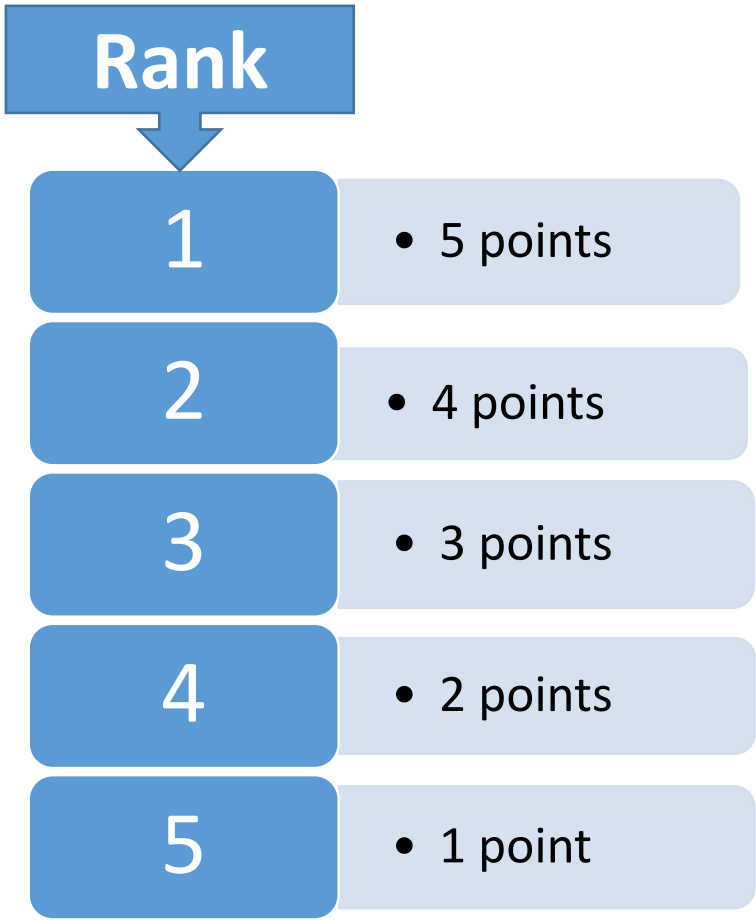
Trans-National Workshops

Survey

MAIN CHALLENGES AND NEEDS TO ENHANCE PREGNANCY RATE

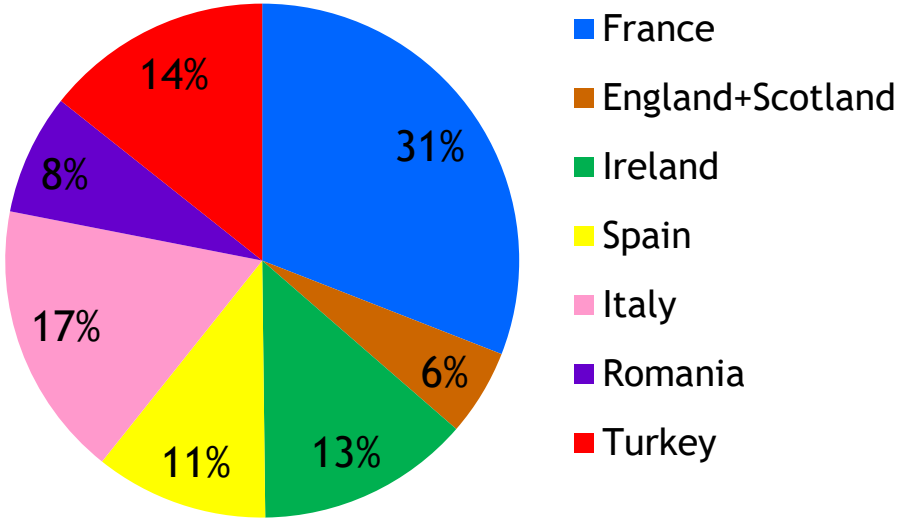
Please select from the following list what you consider are the main issues involved in achieving a high **PREGNANCY RATE (please select a maximum of five in order of importance; rank 1-5)**

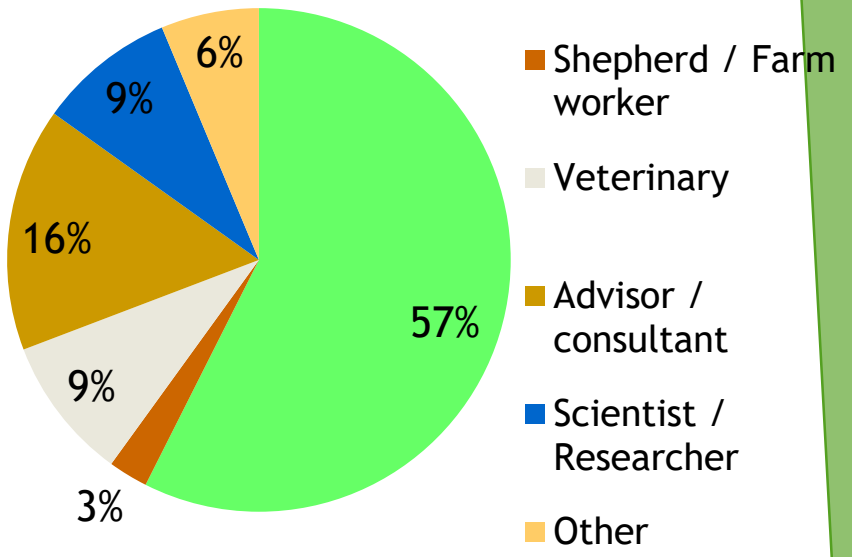
Ewe lamb management	
Breading period of the year	
Lambing interval	
Systems for the synchronization of oestrus	
Ram management	
Ram effect	
Artificial insemination (method and semen storage)	
Body condition score	
Nutrition/grass land management	
Environmental stress	
Flock health status	
Technology for ewe identification/management (e.g. EID)	
Duration of breeding period	
Ewe to ram ratio	
Culling strategy	
Other (specify)	



Survey

794 valid surveys





National Workshops: discussion on needs

NEEDS TO ENHANCE PREGNANCY RATE

	France		UK	Irland	Italy	Spain		Romania	Turkey	
	Dairy	Meat	Meat	Meat	Dairy	Dairy	Meat	dual-purpos	Dairy	Meat
Ewe lamb management		5	5			1	4			
Breading period of the year						4	2			5
Lambing interval	4									
Ram management			4	4	1			3		3
Ram effect							3			
Body condition score	3	1	2	1	3	2	1	4		
Nutrition/grass land management	2	2	1	2	2		5	2		1
Flock health status	5	3		3	4	3		1		4
Duration of breeding period				4						
Ewe to ram ratio					4	5		5		2
Culling strategy		4								
Genetic level, competition between functions	1		3							
Breed choice in relation with the potential of the system		6								
ewe genotype				5						

NEEDS TO ENHANCE PREGNANCY RATE

- Key needs identified from the survey and after discussion in the NWS (in order of importance)
  1. Nutrition / Grassland Management
  2. Body Condition Score
  3. Flock Health Status
  4. Ram Management
  5. Ewe : Ram Ratio
  6. Ewe Lamb Management

NEEDS TO ENHANCE PREGNANCY SUCCESS

	France		UK	Irland	Italy	Spain		Romania	Turkey	
	Dairy	Meat	Meat	Meat	Dairy	Dairy	Meat	dual-purpos	Dairy	Meat
Pregnancy diagnosis (scanning): more information on benefits	1	1	2	3	1	3	2			
Abortion : control and prevention	4	4	5	2	2	1	3		3	1
Nutrition/grassland management during gestation	1	2	1	1	2	4	1	1	1	2
Mineral nutrition during pregnancy		5	4	1				3		3
How to assess the quality of a nutrition plan during gestation?					2	5			2	
Vaccination programme (e.g. against clostridial diseases)						6	5	2	4	
Internal parasite control		2		4	5			5		4
Animal handling (e.g.facilities)						2	4	4	5	
Housing requirements										5
Criteria for sheep batches definition	1									
Body condition score				5						
Stress			3							

NEEDS TO ENHANCE PREGNANCY SUCCESS

- Key needs identified from the survey and after discussion in the NWS (in order of importance)
  1. Nutrition / Grassland Management
  2. Abortion Control and Prevention
  3. Pregnancy Diagnosis

NEEDS TO REDUCE LAMB MORTALITY (Management)

	France		UK	Irland	Italy	Spain		Romania	Turkey	
	Dairy	Meat	Meat	Meat	Dairy	Dairy	Meat	dual-purpos	Dairy	Meat
Advanced preparation for lambing	4	1		1	1	2	2	1	2	3
Records on lamb mortality to improve future lambings			3				5			
Sheep shed (air circulation, bedding, hygiene etc.)	4	4		4	1	1	1	2	3	1
Individual lambing pens								3		
Hygiene (e.g. navel disinfection, tag disinfection…)		3	2	3		4		4	5	
Labour availability & organisation (e.g. supervision)	2	2		2	5	3	3	5	3	4
Artificial feeding management						5				5
Technology e.g. for ewe/lamb identification, lambing observation									4	
Nutrition/grassland management	2	4		5	2		4		2	2
Other (please specify)					2					
Balance between labor, flock and means of production	1									
Weather/temperature			1							
Shepherding technique			4							
Stocking rate			5							

NEEDS TO REDUCE LAMB MORTALITY (Management)

- Key needs identified from the survey and after discussion in the NWS (in order of importance)
  1. Advanced preparation for lambing
  2. Sheep Shed conditions
  3. Labour availability organisation
  4. Nutrition

NEEDS TO REDUCE LAMB MORTALITY (Ewe - lamb)







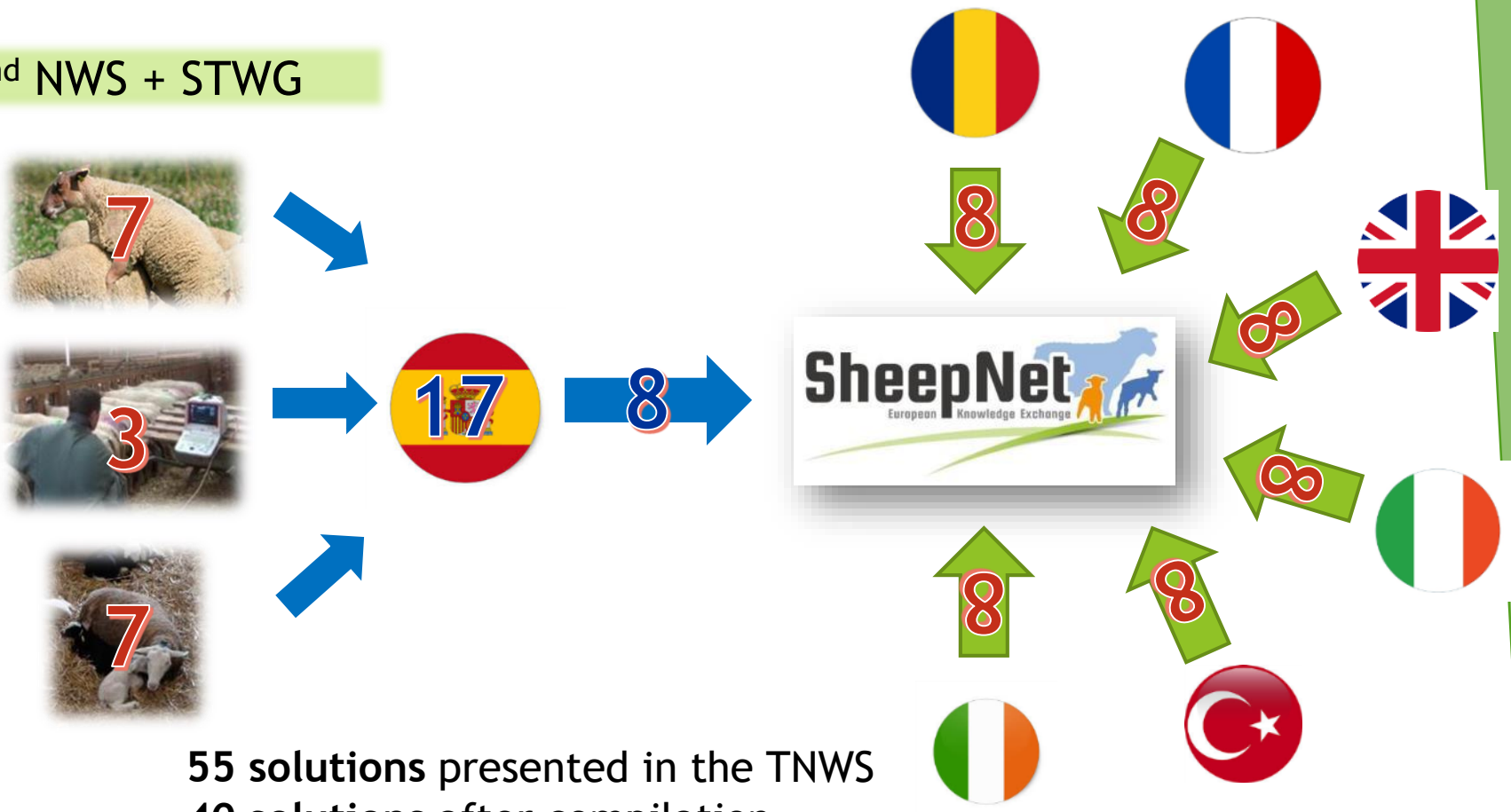
	France		UK	Irland	Italy	Spain		Romania	Turkey	
	Dairy	Meat	Meat	Meat	Dairy	Dairy	Meat	dual-purpose	Dairy	Meat
Litter size	2	5		4		6	5			
Lamb birth weight		3		3	5	3	3	1	3	
Lambing difficulties				3						
Lamb vigour at birth	1	1	4	2	3	2	2	3	4	4
Mis-mothering (e.g. ewe lamb bond)		4				5	4	5	2	3
Colostrum issues: (e.g. quantity, quality and intake)	4	2	3	1	1	1	1	2	1	2
Lamb health					2					1
Internal/external parasite control								4		5
Weak lamb management					4				5	
Exact causes of mortality	2		6							
Vaccinations				5						
Udder morphology						4				
Body condition score			1							
Nutrition/grassland Management			2							
Speed of delivery			5							
Selection/culling policy			7							

NEEDS TO REDUCE LAMB MORTALITY (Ewe-Lamb)

- Key needs identified from the survey and after discussion in the NWS (in order of importance)
  1. Colostrum issues
  2. Lamb vigour at birth
  3. Lamb birth bond
  4. Litter size
  5. Lamb health

Solutions for Needs

2nd NWS + STWG



55 solutions presented in the TNWS
40 solutions after compilation

12 Reproduction
8 Pregnancy success
12 Lamb survival. Lambing Management
8 Lamb survival. Animals

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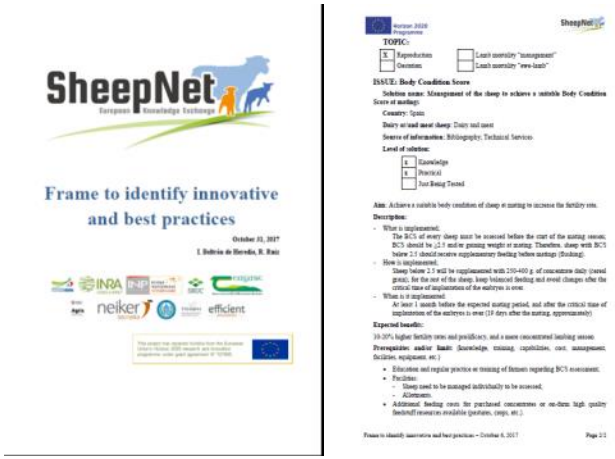
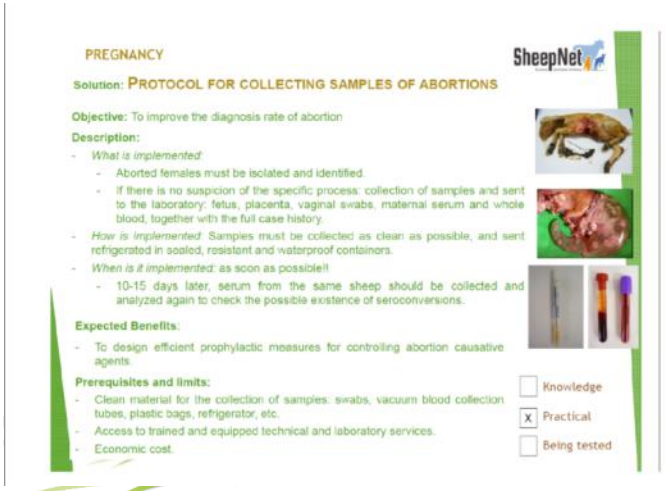
Solutions: presentation in WS



Technical factsheets

In situ presentations

Posters



Posters

Reproduction

12 SOLUTIONS

Needs	Solutions	Country
Nutrition/Grassland Management	- Body condition recovery and flushing - Rotational grazing rules and QMS Sward stick - Introduction of practical tool for nutritive requirements of ewe and grassland management	IT UK TK
Body Condition Score	- Managing ewe body condition for a successful reproduction - **Body Condition Scoring Toolkit**	IR, SP, IT UK
Flock Health Status	- Evaluation of parasite burden and the use of pooled fecal samples - Key Notes for health practices for a more productive flock	FR TK
Ram Management	- Optimized use and management of rams during reproduction season	IT, RO
Ewe : Ram Ratio	- Electronic Alpha-Detector (detection of mounting activity)	FR
Ewe Lamb Management	- **Use of the ram effect to compact the lambing season**	IR
Breeding period of the year	- Selection criteria for reproductive animals	SP
Genetic level, competition between functions	- Selection scheme for productive and reproductive traits	IT

Pregnancy success

8 SOLUTIONS

Needs	Solutions	Country
Nutrition/Grass Land Management	- **Focus-feeding of pregnant ewes** - Tackling metabolic diseases in pregnant ewes - The effect of grass silage feed value on concentrate requirements during late gestation	IT, RO, TK RO IR
Abortion control and prevention	-**Standardized differential diagnosis of abortions: a global approach to diagnosis of abortive infectious diseases** - Protocol for collecting samples of abortions **- Technical note on health control and management of abortion**	FR SP UK
Pregnancy diagnosis	- Pregnancy diagnosis – ultrasound scanning	UK, IR, SP, FR, IT
Vaccination Program	- Vaccination Calendar for Sheep	TK

Lamb survival. Management

12 SOLUTIONS

Needs	Solutions	Country
Advanced preparation for lambing organisation	- Planning of key practices for a good sheep productivity - Preparation of a lambing inventory - List of good practices: logistic, organisation of manpower, management of shed	FR IR IT
Sheep Shed conditions	**- Lambs in good health: good breeding practices and adapted shed** - Protocols for cleaning, hygiene and disinfection of the bedding - Planning feed budgets and contingency plans for extreme weather	FR, RO SP UK
Labour availability	- Staff members training	SP
Nutrition	- Artificial rearing of lambs - Un-weaned lambs creep-feeding - Grazing rules for improved lamb management	IR RO TK
Technology e.g. for ewe/lamb identification, lambing observation	- Tools for productivity through data recording	TK
Records on lamb mortality to improve future lambings	**- Recording the causes of lamb losses with on farm post-mortem and paper tally**	UK

Lamb survival. Animals

8 SOLUTIONS

Needs	Solutions	Country
Colostrum issues	- Guidelines for feeding new-born lamb colostrum - Evaluation of colostrum IgG concentration	SP, RO FR
Lamb vigour at birth	- **Optimum lamb birth weight**	IR, RO
Lamb birth weight	- Lamb Vigour at birth improves lamb survival	UK, TK
Ewe Lamb bond	- Individual penning arrangements	SP
Litter size	- The effect of litter size on lamb mortality	IR
Lamb health	- Key Infrastructure for Productivity	TK
Lambing difficulties	- Technical note using EBV rams	UK

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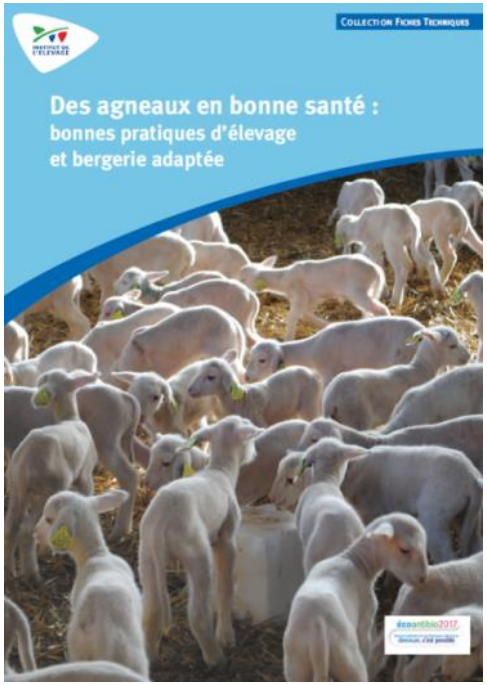
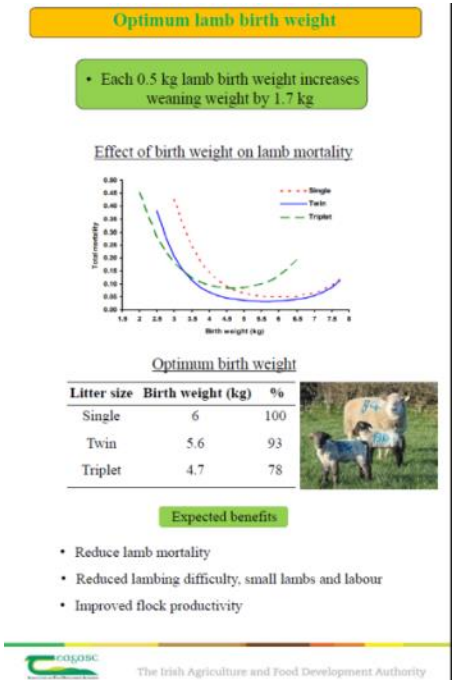
The best solutions





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Tips and Tricks

Best Practices: **Tips and Trips** (3th National Workshops)

Proposals

82 collected

Tips and Trips for Solutions (3th TransNat. Workshop)

≈10 per SheepNet country

3 Oceania

3 Hungary

75 T&T presented

Reproduction: 15

					Country
The ram effect	x				IR
Measuring tape to assess the testicular perimeter of rams	x				SP
Semen collection drawer	x				SP
Smartphone recording tool	x	x			IT
Using yokes for BCS grouping	x	x		x	IT
Calibrated bucket	x				IT
Tasting lupin seed	x				IT
Anti-mating apron for rams	x				IT
Ram's foreskin crayon marking	x				IT
Sentinel breeds to monitor BCS	x				RO
Melatonin implants	x				RO
Selecting for fertility, litter size and longevity in big unrecorded flocks	x				RO
Selecting ewes for temperament	x				RO
Use technology for productivity	x	x	x		TK
Moving gate	x			x	AUS

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Pregnancy success: 7

					Country
Ewe nutrition for optimum lamb birth weigth		x			IR
Portable trolley to perform ultrasound scanning		x			SP
Mobile drawer to perform ultrasound scans		x			SP
Smartphone recording tool	x	x			IT
Using yokes for BCS grouping	x	x		x	IT
Home-made adaptation of echography terminal		x			IT
Use of technology for productivity	x	x	x		TK

Lamb survival - Management (I): 28



					Country
Pen label for issues at lambing			x	x	UK
Lamb station			x	x	UK
Potato box shelter			x		UK
Lamb feedind box			x		UK
Heated water throughs			x		UK
Extended feeders			x		UK
Improved ewe identification			x		IR
Fostering bucket			x		IR
Water supply to lambing pens			x		IR
Wet fostering protocol			x		IR
Cage to provide water to lambs			x		SP
Barrier to restrict the acces to the lambs to their mothers			x		SP
Portable tray with material to manage newborn lambs			x		SP
A barrier to prevent lambs from jumping in the trough			x		FR
Blackboard for lambing pens			x		FR
Melanie’s rack system for sheep hurdles			x		FR
Preserving jar rubber seal (aas a lamb ID collar)			x		FR
Colostrum stocking			x	x	FR

Lamb survival - Management (II): 28



					Country
Earthing the troughs			x		FR
Webcam in the shed			x		FR
Toolbelt with lambing kit			x		FR
Lamb ID-box			x		FR
Homemade lamb station			x		FR
Cage for foster adaptation			x		IT
Post-partum cage			x		IT
Feed unit access for lambs			x		TK
Lambing tool kit			x		TK
Use technology for productivity			x		TK

Lamb survival - Animals (I): 23

					Country
Pen label for issues at lambing			x	x	UK
Lamb station			x	x	UK
Storing frozen colostrum				x	UK
Outdoor lamb recording bag				x	UK
Super crook				x	UK
Dealing with large teats				x	IR
Car to transport lambs to the lactation room				x	SP
Colostrum conservation in single-dose plastic bottles				x	SP
Adoption of unwanted lambs				x	SP
Colostrum stocking			x	x	FR
Using yokes for BCS grouping	x	x		x	IT
Foster ewe in the orphan lambs pen				x	RO
Surrogate goats				x	RO
Skinning lambs for fostering				x	RO
Using a dog to bond ewe with lamb				x	RO
Lamb weight with rope				X	TK
Animal capture/fixing with rope				X	TK
Feed unit modification for animal treatment				X	TK
Foot bath for biosecurity				x	TK

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Lamb survival - Animals (II): 23

					Country
Door opening system in mountain farmers				x	TK
Feeding tool for young's / orphans				x	TK
Low stress handling				x	NZ
Moving gate	x			x	AUS

Others: 6

					Country
Lameness treatment tube					IR
Creep grazing gate					IR
Portable water supply					IR
Sledge for weighing and treatment					RO
Drone for problem solving					TK
Hock bar in raceway					NZ

The best T & T

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Many Thanks!!

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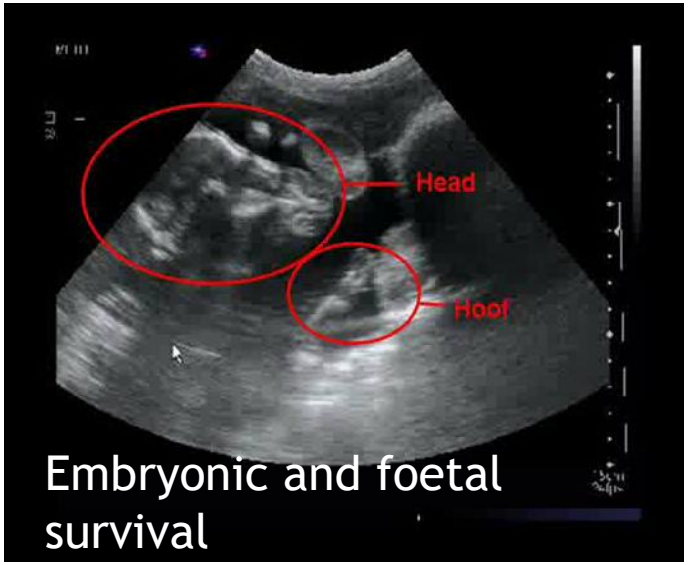
Scientific knowledge

Cathy Dwyer
SRUC

Scientific Knowledge



Factors affecting fertility; reducing ewe barren rates; suitable prolificacy for system

Reducing embryonic and foetal losses; dealing with sources of abortion

Reducing losses of viable lambs; reducing stillbirth; reducing preweaning and postweaning losses; lactation

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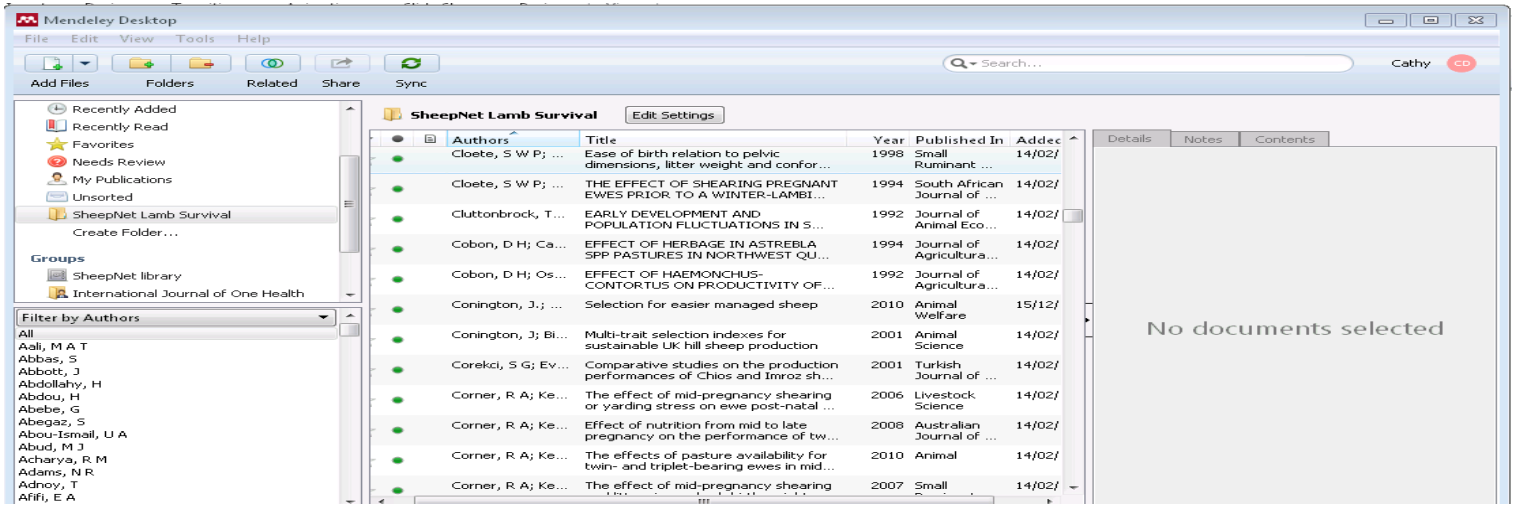
Scientific knowledge and SheepNet

- Provide the evidence base for solutions to issues and problems identified in the needs analysis
- Identify the key findings that are relevant to SheepNet themes and could be useful solutions to disseminate
- Identify research gaps where there are questions for which there are not yet available answers



Scientific Knowledge

- Best methods of delivering knowledge from database to farmers and advisers
- Learning from the preferences expressed in the survey
  - Farmers prefer to learn from vets, advisers and peer-to-peer, then farming press
  - Vets and advisers learn from scientific articles, workshops and seminars, farming press and professional learning
- Range of different methods for different audiences:
  - Written factsheets
  - Interactive learning materials (e.g. with self-directed learning)
  - Workshops
  - Videos
  - Training guides
  - Podcasts

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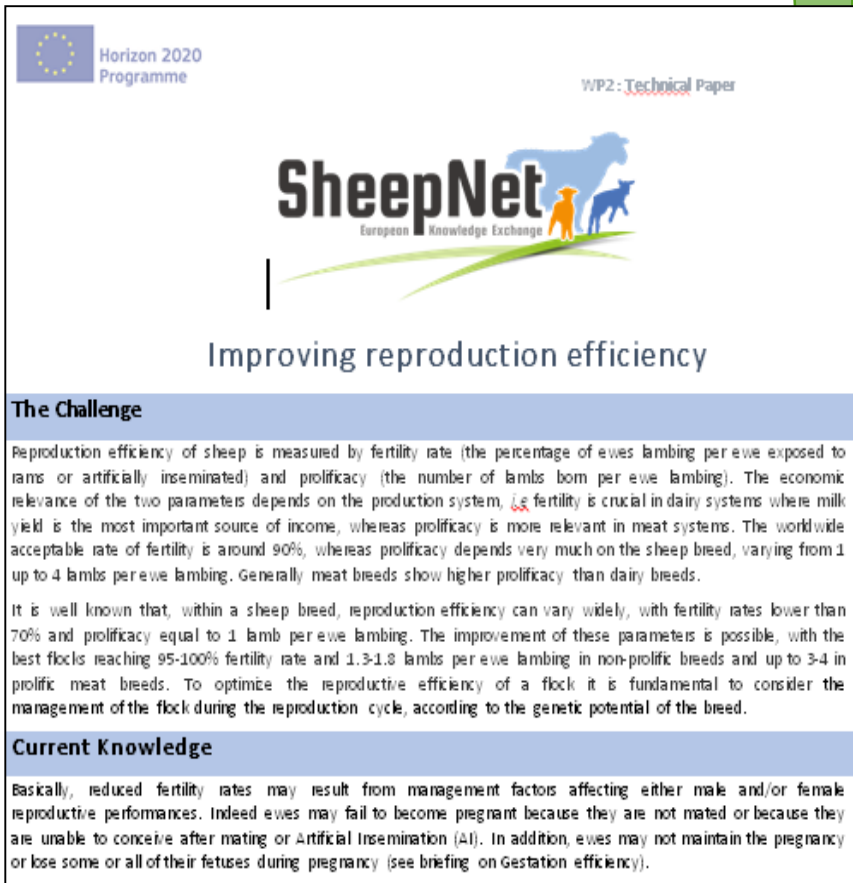
Technical datasheets

Reproductive Efficiency
AGRIS, Italy

- Management factors affecting ewe and ram fertility
- Risk factors for poor fertility:
  - Timing and management of mating/AI
  - Poor health of ewe or ram
  - Inadequate nutrition
  - Physical or psychological stress at mating
  - Presence of sufficient males for the number of ewes
- Risk factors for poor prolificacy
  - Nutrition
  - Age and maturity



Horizon 2020 Programme

WP2: Technical Paper

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Improving reproduction efficiency

The Challenge

Reproduction efficiency of sheep is measured by fertility rate (the percentage of ewes lambing per ewe exposed to rams or artificially inseminated) and prolificacy (the number of lambs born per ewe lambing). The economic relevance of the two parameters depends on the production system, i.e fertility is crucial in dairy systems where milk yield is the most important source of income, whereas prolificacy is more relevant in meat systems. The worldwide acceptable rate of fertility is around 90%, whereas prolificacy depends very much on the sheep breed, varying from 1 up to 4 lambs per ewe lambing. Generally meat breeds show higher prolificacy than dairy breeds.

It is well known that, within a sheep breed, reproduction efficiency can vary widely, with fertility rates lower than 70% and prolificacy equal to 1 lamb per ewe lambing. The improvement of these parameters is possible, with the best flocks reaching 95-100% fertility rate and 1.3-1.8 lambs per ewe lambing in non-prolific breeds and up to 3-4 in prolific meat breeds. To optimize the reproductive efficiency of a flock it is fundamental to consider the management of the flock during the reproduction cycle, according to the genetic potential of the breed.

Current Knowledge

Basically, reduced fertility rates may result from management factors affecting either male and/or female reproductive performances. Indeed ewes may fail to become pregnant because they are not mated or because they are unable to conceive after mating or Artificial Insemination (AI). In addition, ewes may not maintain the pregnancy or lose some or all of their fetuses during pregnancy (see briefing on Gestation efficiency).

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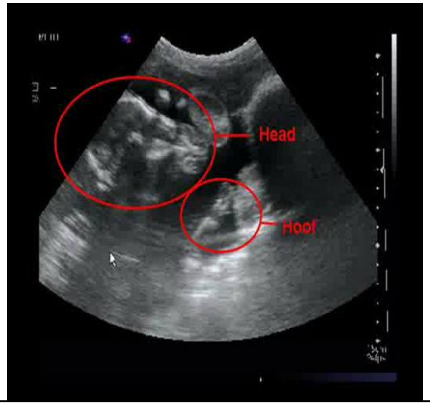
Translated into all SheepNet languages

Technical datasheets

Gestational Efficiency
INRA, France



- Risk factors for early embryo mortality
  - Genetic factors (e.g. abnormalities)
  - High ambient temperature
  - Stress and management
  - Nutrition
- Risk factors for poor development, abortion and stillbirth
  - Infectious agents (biosecurity)
  - Nutritional management
  - Stress and handling

Translated into all SheepNet languages

SheepNet
European Knowledge Exchange

Horizon 2020 Programme

WP2 : Technical Paper

SheepNet
European Knowledge Exchange

Improving gestation efficiency

The Challenge

Gestation efficiency in sheep is defined by the proportion of ewes known to have conceived that give birth to viable lamb(s). Average fertilization rate is around 90-95%, however, not all embryos and fetuses will survive until delivery. During early pregnancy, losses are defined as early embryonic (from fertilization of the oocyte to day 16, implantation of the embryo) and late embryonic death (from day 16 to day 30, corresponding to the end of organogenesis). Abortions (termination of a pregnancy after the end of the organogenesis) can occur at any stage of pregnancy but later term abortions are more often noticed.

Current Knowledge

Reduced embryonic and fetal survival rates may result from nutritional factors, infectious, fungal or toxic factors, maternal factors, environmental factors and genetic causes:

Nutritional factors: undernutrition before mating or insemination, and during the early embryonic period, may impair oocyte quality and reduce the production of progesterone, interferon Tau, proteins and other growth factors essential for early embryo development. Conversely, very high protein intake, when associated with unbalanced energy supply, may lead to high nitrogen and urea blood concentrations that have detrimental effects on the embryo. Similarly a very high plane of nutrition will also reduce peripheral concentrations of progesterone thus

Technical datasheets

Improving lamb survival
SRUC, Scotland

- Causes of lamb mortality have been identified
- Risk factors for lamb mortality
  - Ewe nutrition, especially in late gestatio
  - Litter size
  - Ewe inexperience
  - Ewe and lamb breed
  - Stress
  - Lambing environment
- Practical measures to reduce the risks

Translated into all SheepNet languages

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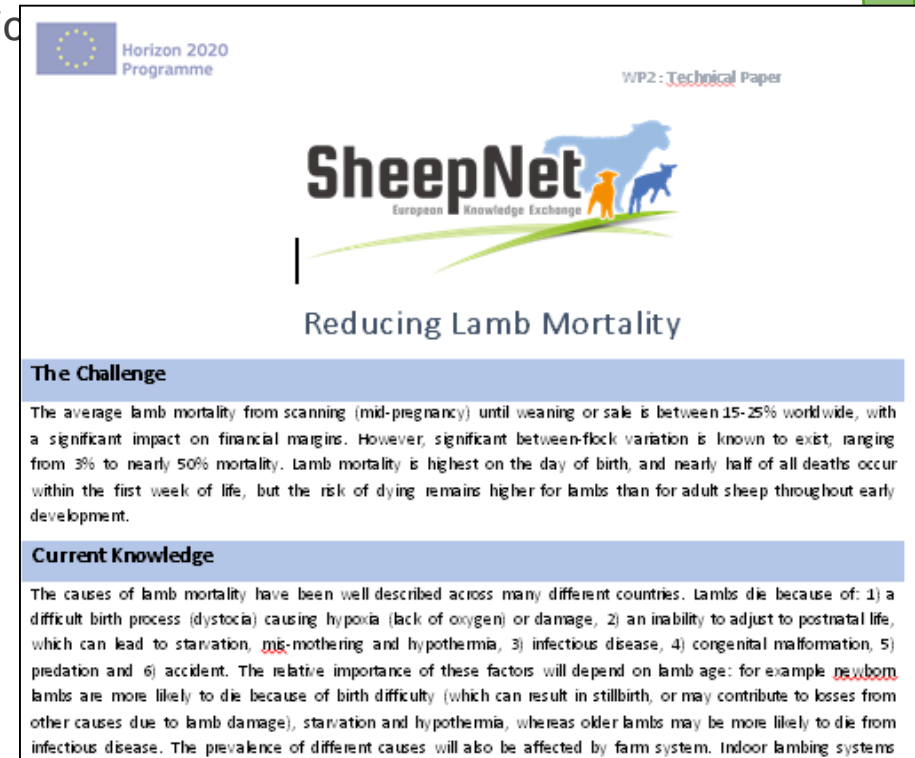

Horizon 2020 Programme

WP2 : Technical Paper

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Reducing Lamb Mortality

The Challenge

The average lamb mortality from scanning (mid-pregnancy) until weaning or sale is between 15-25% worldwide, with a significant impact on financial margins. However, significant between-flock variation is known to exist, ranging from 3% to nearly 50% mortality. Lamb mortality is highest on the day of birth, and nearly half of all deaths occur within the first week of life, but the risk of dying remains higher for lambs than for adult sheep throughout early development.

Current Knowledge

The causes of lamb mortality have been well described across many different countries. Lambs die because of: 1) a difficult birth process (dystocia) causing hypoxia (lack of oxygen) or damage, 2) an inability to adjust to postnatal life, which can lead to starvation, mis-mothering and hypothermia, 3) infectious disease, 4) congenital malformation, 5) predation and 6) accident. The relative importance of these factors will depend on lamb age: for example newborn lambs are more likely to die because of birth difficulty (which can result in stillbirth, or may contribute to losses from other causes due to lamb damage), starvation and hypothermia, whereas older lambs may be more likely to die from infectious disease. The prevalence of different causes will also be affected by farm system. Indoor lambing systems

Lessons from Australia and New Zealand

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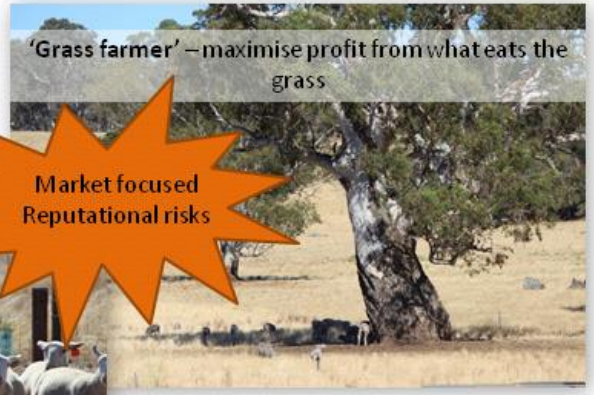
European Knowledge Exchange

LESSONS FROM AUSTRALIAN SHEEP PRODUCTION

Australia Sheep Facts
- 70.2 M sheep, 40.2 M ewes
- Uses 54% of Australia's land mass
- Exports 98% of wool and 56% of lamb meat



Market focused
Reputational risks

Lamb mortality and ease of labour important issues – focus on labour saving innovations and ease of handling

Technological innovations to improve handling and sheep movement

Data collection
- Ewe performance
- Lamb growth
- Soil moisture
- Causes of lamb mortality
- Using EBVs

Research developments: with industry partners.
Causes of mortality and birth difficulty
Larger mob sizes at lambing have higher mortality

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Transferring knowledge

- Focus on areas that are relevant to the needs of the stakeholders in SheepNet
- Needs analysis from WP3 – suggested that there were 69 unanswered questions
- Workshop with all SheepNet participants to look at these in detail:
  - 15 questions had solutions that could be delivered in a 'farmer-facing' format
  - 19 questions may not have a readily available answer (on-going research or under-researched area)

Transferring knowledge

- Breed differences in ewe lamb management
- Ewe-lamb reproduction – including effects on longevity
- Infertility and practical guide to early diagnosis
- Ewe age and productivity (including breed effects)
- Assessing mineral status in sheep
- Land management (rotational grazing and other approaches)
- What minerals are required by ewes in pregnancy for optimal results?
- How can heat stress be reduced?
- Best practice guidance for animal handling in pregnancy
- Biology of the lambing process – birth difficulty, lambing at night etc.
- Impact of nutrition on lamb vigour and the ewe-lamb bond
- Biology of the ewe-lamb bond
- How to optimise the expression of maternal behaviour in sheep – factors that affect this, management to prevent mis-mothering etc.
- Genetics and management of ovulation rate and litter size
- What do we know about udder morphology? (include impact on suckling, hygiene, disease and opportunities for genetic selection)

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Transferring knowledge: Example

On farm recording of lamb behaviour

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European Knowledge Exchange

www.sheepnet.network/
www.facebook.com/SheepNetEU
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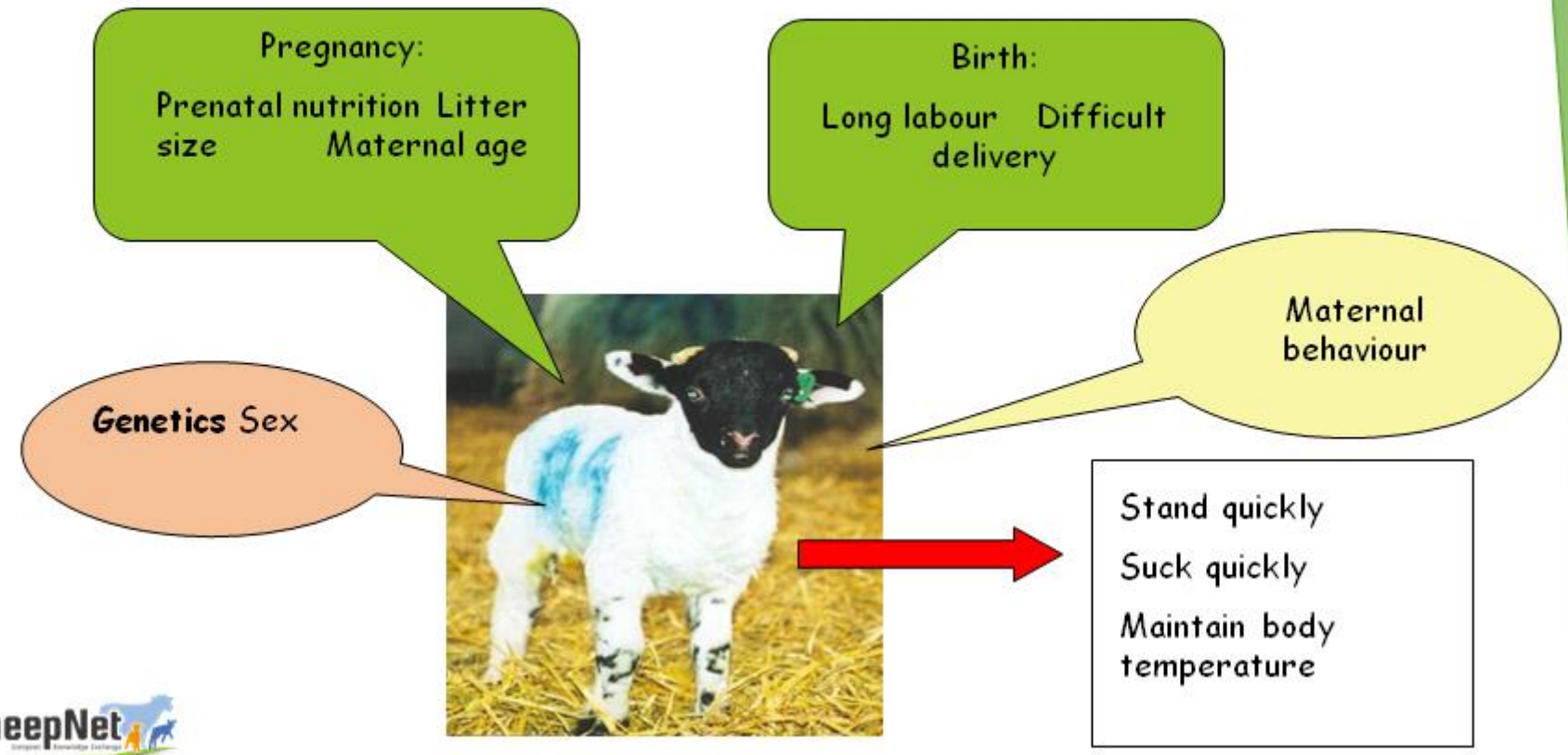
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 727895.

Information about the issue

What affects lamb behaviour?



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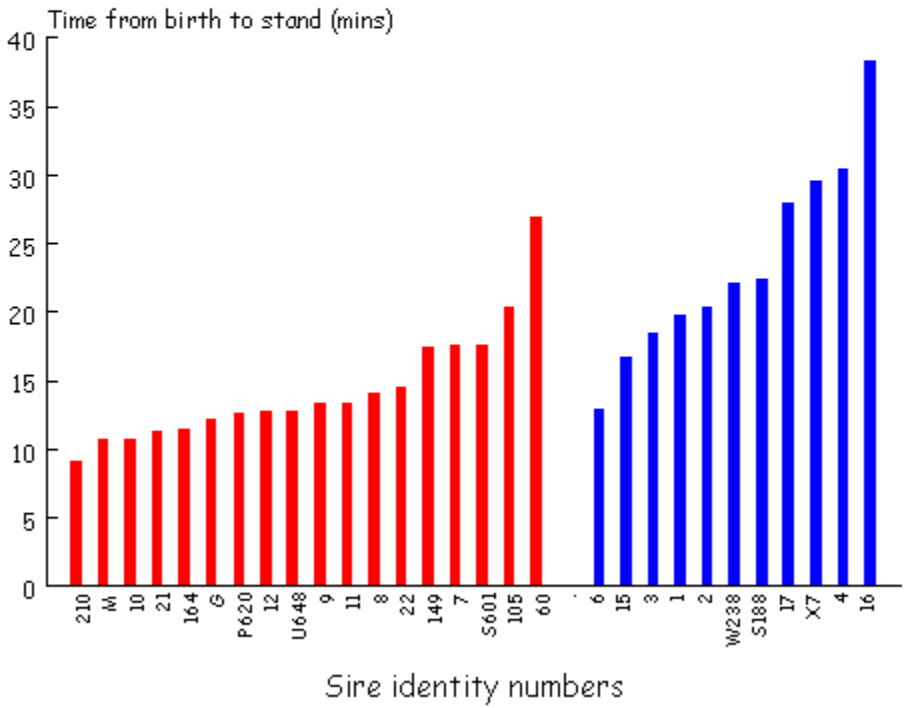
Science behind the solution

Genetics of lamb behaviour

- Breeds of sheep differ in how quickly lambs stand and how active they are (blue breed slower than red)
- Within breed rams differ in how active their offspring are (differences in bars within colour)



Pictorial information

Vigour Score (at 5 minutes old)

0	1	2	3	4
Extremely active and vigorous lamb, has been standing on all 4 feet	Very active and vigorous lamb, standing on back legs and on knees	Active and vigorous lamb, on chest and holding head up	Weak lamb, lying flat, able to hold head up	Very weak lamb, unable to lift head, little movement





Videos available to illustrate each of these scores

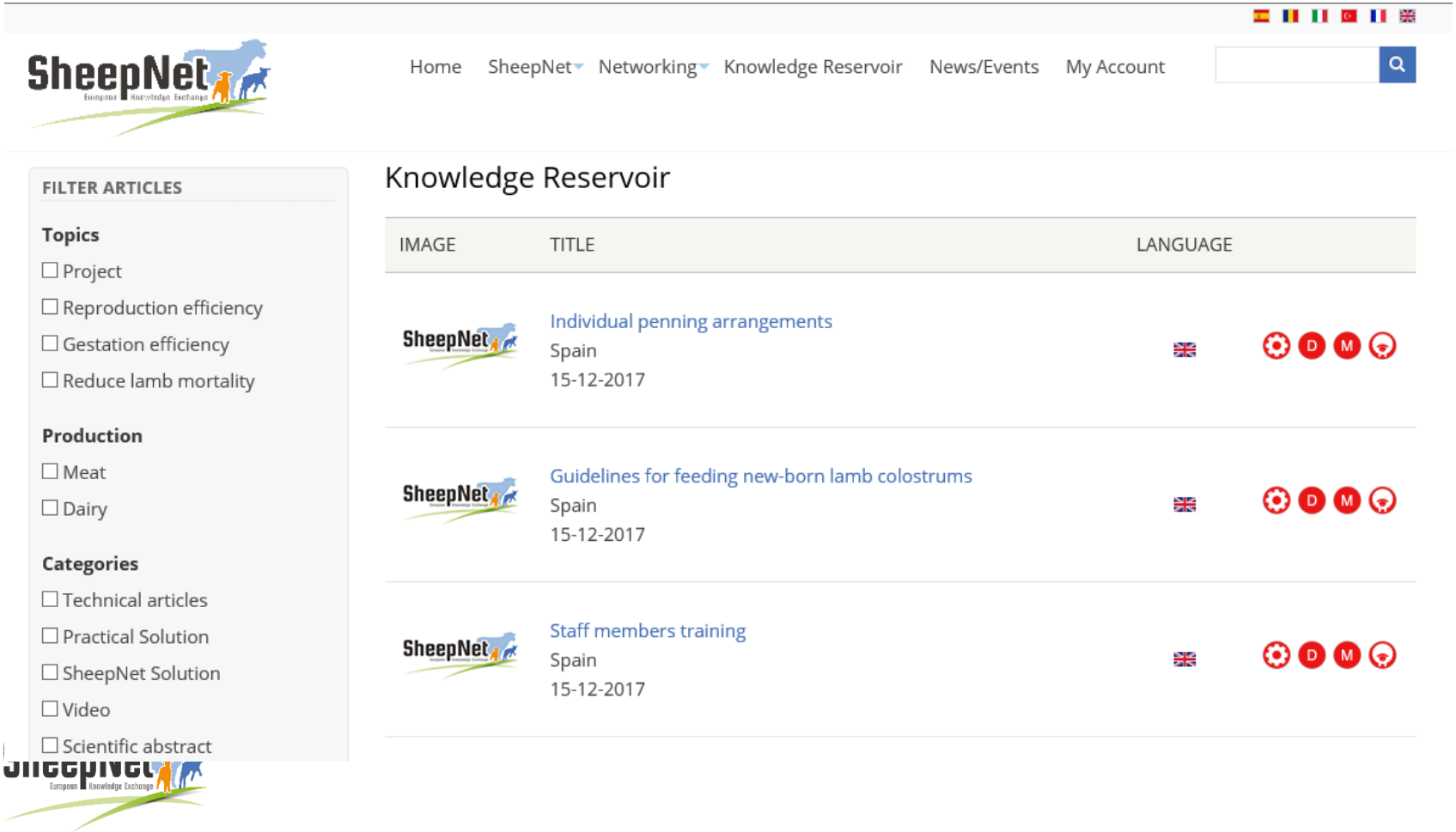
SheepNet European Knowledge Exchange

SheepNet European Knowledge Exchange

Use of videos where appropriate

Dissemination of information

http://www.sheepnet.network/knowledge-reservoir



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www.sheepnet.network/

www.facebook.com/SheepNetEU

@SheepNetEU

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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 727895.

How to communicate with end users

Tim Keady
Teagasc, Athenry, Co Galway, Ireland

Introduction

- Successful transfer of technology critical to improving efficiency
- Adoption of technology is influenced by many factors including
  - effective communication
  - cost of adopting the change
  - financial rewards of the change
  - labour/time/energy required to change

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European Knowledge Exchange

Objective

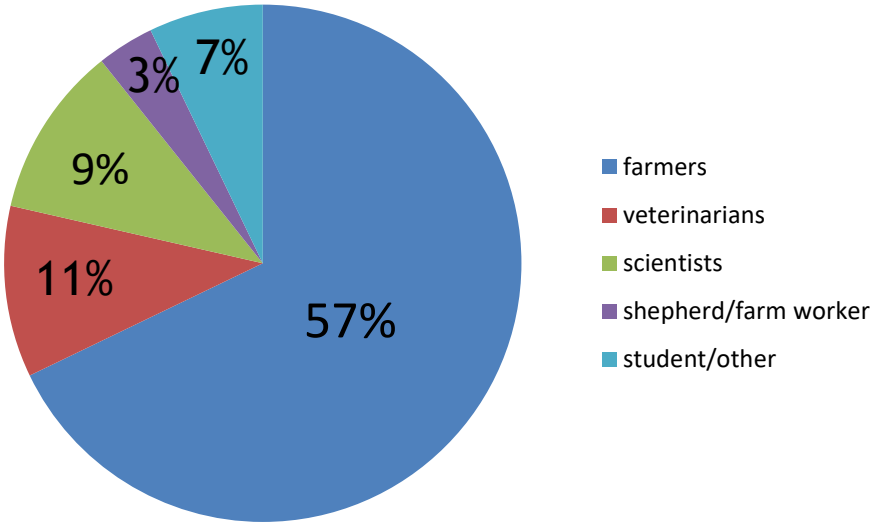
- To determine the main sources used by stakeholders in Europe and Turkey to obtain information on ewe productivity

Materials and methods

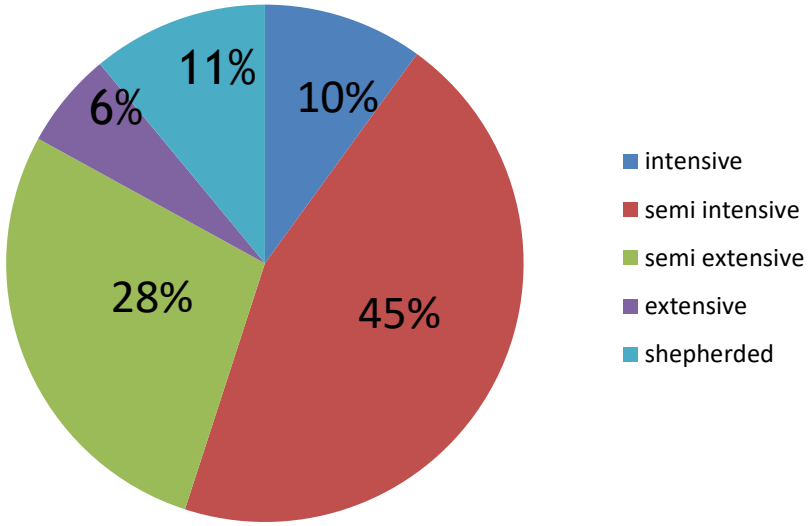
- Survey designed and circulated in the 7 SheepNet countries (Ireland, UK, France, Italy, Spain, Romania and Turkey) translated in their language
- Respondents asked to '*rank in order of importance the main information sources that you use to get information on ewe productivity*'
- Given 13 options
- Score assigned : first choice (most important) scored 13 to the thirteenth choice (least important) scored 1
- Scores summed to rank the main information sources

Profile of respondents

- 794 surveys completed



- Farming system



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Ranking of main sources

Source	Europe/Turkey
Veterinarians	1
Advisors/consultants	2
Farming press	3
Peer to peer	4
Professional learning	5
Conferences/seminars	6
Scientific articles	7
Farm open days	8
Farming websites	9
Discussion groups	10
Social media	11
Technical sales people	12
Other	13

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Does source differ by stakeholder type?

Source	Europe/Turkey	Farmer/shepherd	Advis/consult/vet
Veterinarians	1	1	6
Advisors/consultants	2	2	5
Farming press	3	4	1
Peer to peer	4	3	9
Professional learning	5	7	2
Conferences/seminars	6	9	4
Scientific articles	7	10	3
Farm open days	8	5	8
Farming websites	9	8	7
Discussion groups	10	6	10
Social media	11	10	11
Technical sales people	12	12	12
Other	13	13	13

SheepNet
European Knowledge Exchange

Does source differ by stakeholder type?

Source	Europe/Turkey	Farmer/shephard	Advis/consult/vet
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Other	13	13	13

SheepNet
European Knowledge Exchange

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SheepNet
European Knowledge Exchange

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SheepNet
European Knowledge Exchange

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Technical sales people	12	12	12
Other	13	13	13

Choice of source is influenced by stakeholder

Does source of information differ by region?

Source	Europe/Turkey	Ireland	France	Turkey
Veterinarians	1	6	3	1
Advisors/consultants	2	5	2	2
Farming press	3	2	1	6
Peer to peer	4	3	4	3
Professional learning	5	10	5	11
Conferences/seminars	6	8	9	9
Scientific articles	7	9	8	12
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Farming websites	9	7	7	7
Discussion groups	10	1	10	10
Social media	11	11	12	4
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SheepNet
European Knowledge Exchange

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SheepNet
European Knowledge Exchange

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SheepNet
European Knowledge Exchange

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SheepNet
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Professional learning	5	10	5	11
Conferences/seminars	6	8	9	9
Scientific articles	7	9	8	12
Farm open days	8	4	6	5
Farming websites	9	7	7	7
Discussion groups	10	1	10	10
Social media	11	11	12	4
Technical sales people	12	13	11	8
Other	13	12	13	13

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European Knowledge Exchange

Source of information depends on region

Conclusions

- Choice of media used depended on
  - target audience
  - location
- Poor sources of information were social media and technical sales personnel
- As social media is a new source it may become more important in the future
- A number of sources are required to effectely communicate a message

SheepNet
European Knowledge Exchange

Dissemination channels currently used by end users

Country	Number
France	21
Ireland	11
Italy	10
Romania	9
Spain	10
Turkey	9
Italy	12

SheepNet has identified 86 means of communication

Media used for dissemination

1) Print media
   a) Press releases - translated into 6 languages
      - NWS and TNWS's
      - Australia and New Zealand
      - briefing papers

Disseminated through YouTube, Twitter and Facebook


Sheep

Great optimism in Australian sheep sector


Koyunlarda verimliği arttıracak proje

SheepNet


S'informer

SheepNet se réunit sur le Larzac

Le chiffre

9 918

Techna accompagne les éleveurs ovins

Le président Macr


SheepNet favorise l'échange de solutions pour améliorer la productivité ovine au niveau de l'UE

Suite au succès du premier atelier transnational qui s'est tenu en Écosse en juin dernier, *SheepNet* s'est réuni à Timisoara en Roumanie en novembre. Plus de 60 participants (éleveurs, techniciens, scientifiques…) des sept pays de *SheepNet* et de Hongrie se sont réunis pendant deux jours.

La réunion s'est centrée sur **le partage et l'échange de solutions existantes concourant à améliorer la productivité ovine**. Au total, 55 solutions provenant de tous les pays partenaires ont été présentées lors de **quatre « marchés aux solutions » traitant de la reproduction, la gestation et la mortalité des agneaux**. Tout a été fait pour favoriser les interactions, le partage de connaissances et d'expériences. La délégation française, constituée de 10 représentants, a présenté sept solutions qui avaient été sélectionnées lors de la réunion nationale en octobre dans l'Aveyron. Vingt solutions provenant des autres pays ont retenu l'attention de la délégation française. Elles seront présentées dans le Lot en mai lors de la prochaine réunion nationale. L'intérêt de ce type de rencontres internationales fait consensus du fait de l'existence de solutions pour améliorer la productivité ovine au niveau UE.

D'autre part, les participants ont visité deux élevages ovins et une laiterie. La première ferme avec 1803 brebis est en système accéléré 3 agnelages en 2 ans. La deuxième avait 1 500 brebis mixtes (lait et viande). La laiterie visitée transforme quotidiennement jusqu'à 70 mille litres de lait (brebis, chèvre, bufflonne et vache) en fromages et yogourt.

SheepNet tiendra son prochain atelier transnational en Espagne en juin prochain.

Pour plus d'informations et pour découvrir les 55 solutions : www.sheepnet.network

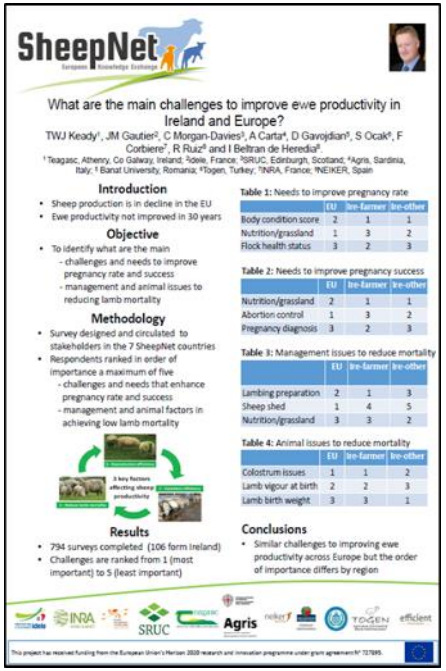
SheepNet est un projet UE - H2020 *grant agreement* N°727895

Pour en savoir plus
Jean-Marc GAUTIER
Tel. 05 61 75 44 40
jean-marc.gautier@idele.fr

SheepNet European Knowledge Exchange

b) Papers presented at Scientific conferences - EGF (June 2018) and EAAP (Aug 2018)

Disseminated through YouTube, Twitter and Facebook



SheepNet

What are the main challenges to improve ewe productivity in Ireland and Europe?

TWJ Keady[1], JM Gautier[2], C Morgan-Davies[3], A Carta[4], D Gavojdian[5], S Ocak[6], F Corbière[7], R Ruiz[8] and I Beltran de Heredia[8].

[1] Teagasc, Athenry, Co Galway, Ireland; [2]Idele, France; [3]SRUC, Edinburgh, Scotland; [4]Agris, Sardinia, Italy; [5] Banat University, Romania; [6]Togen, Turkey; [7]INRA, France; [8]NEIKER, Spain

Introduction

- Sheep production is in decline in the EU
- Ewe productivity not improved in 30 years

Objective

- To identify what are the main
  - challenges and needs to improve pregnancy rate and success
  - management and animal issues to reducing lamb mortality

Methodology

- Survey designed and circulated to stakeholders in the 7 SheepNet countries
- Respondents ranked in order of importance a maximum of five
  - challenges and needs that enhance pregnancy rate and success
  - management and animal factors in achieving low lamb mortality

Table 1: Needs to improve pregnancy rate

	EU	Ire-farmer	Ire-other
Body condition score	2	1	1
Nutrition/grassland	1	3	2
Flock health status	3	2	3

Table 2: Needs to improve pregnancy success

	EU	Ire-farmer	Ire-other
Nutrition/grassland	2	1	1
Abortion control	1	3	2
Pregnancy diagnosis	3	2	3

Table 3: Management issues to reduce mortality

	EU	Ire-farmer	Ire-other
Lambing preparation	2	1	3
Sheep shed	1	4	5
Nutrition/grassland	3	3	2

Table 4: Animal issues to reduce mortality

	EU	Ire-farmer	Ire-other
Colostrum issues	1	1	2
Lamb vigour at birth	2	2	3
Lamb birth weight	3	3	1

Results

- 794 surveys completed (106 form Ireland)
- Challenges are ranked from 1 (most important) to 5 (least important)

Conclusions

- Similar challenges to improving ewe productivity across Europe but the order of importance differs by region

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 727585.

What sources are used by stakeholders in Ireland and Europe to obtain information on ewe productivity?

TWJ Keady[1], JM Gautier[2], C Morgan-Davies[3], A Carta[4], D. Gavojdian[5], S. Ocak[6] , F. Corbière[7], R. Ruiz[8] and I Beltrán de Heredia[8]

[1]Grassland Science, Animal & Grassland Research & Innovation Centre, Teagasc, Athenry, Co Galway, Ireland; [2]Institut de l'Elevage, France; [3]Scotland's Rural College (SRUC), United Kingdom; [4]Department for Research on Livestock Production of Agris Sardinia, Italy; [5]Universitatea de Ştiinţe Agricole şi Medicină Veterinară a Banatului, Timişoara, Romania; [6] Togen R&D 01170, Turkey; [7]INRA-ENVT UMR IHAP 1225, France; [8]Instituto Vasco de Investigacion y Desarrollo Agrario, NEIKER, Spain.

Abstract

A survey was undertaken to identify the main sources used by stakeholders to obtain information on sheep productivity. The survey was undertaken as part of SheepNet, an EU network, covering six of the main European sheep producing countries (Ireland, UK, France, Italy, Spain and Romania) and Turkey. There were 794 respondents, 106 of which were Irish. The respondents were asked to rank in order of importance thirteen different sources of information on sheep productivity. The Irish respondents were classified into two groups as follows: farmer/farm worker (farmer) and advisor/consultant/scientist/veterinarian (professional). In order of decreasing importance, the 5 main sources of information the used by Irish farmers were discussion groups, farming press, peer to peer, open days and technical advisors/consultants; by Irish professionals were congress/seminars/workshops, scientific articles, technical advisors/consultants, professional learning and farming press; and by European stakeholders were veterinarians, technical advisors/consultants, farming press, peer to peer, and professional learning. It is concluded that while there are many different media/sources available to transfer information on ewe productivity to stakeholders, to achieve a successful communication media choice depends on the target audience. Whilst interactive communication and peer to peer were the most important media, the best source of information differed depending on both the background and region of the respondents. Social media and technical sales personnel were considered as poor sources in information by all of respondents.

Keywords: Survey, Europe, Ireland, media, communication

Introduction

Successful transfer of findings and technology from research to stakeholders, and their successful adoption by industry is critical to in improving efficiency within any farm enterprise. The adoption of technology by producers is influenced by many factors including effective communication. In Northern Ireland, Morrison *et al* (2009) reported that the most important issues dairy producers consider when deciding on adoption of research findings were 'what are the financial rewards of the change?', 'what is the cost of adopting the change?' and 'what is the labour/time/energy required to change?'

The EU is only 85% self-sufficient in sheep meat and is the largest importer of sheep meat worldwide. An increase in EU ewe productivity by 0.1 lambs reared per ewe joined would

Abstract n°: 29461

Reproductive indicators in sheep farming systems in Europe and Turkey

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The efficiency of reproductive management is crucial to the profitability of sheep production. There is a wide diversity in sheep systems due to ewe genotype, climate, environmental conditions (mountain areas, lowlands, etc.), production (meat, dairy or dual purpose), level of intensification, nutrition management, etc. Ewe productivity and lamb mortality data were collated for 22 systems of sheep production from the 7 countries (FR, IR, IT, RO, SP, UK and Turkey) involved in SheepNet. Average fertility values in sheep systems managed with a one-lambing-season strategy range from 83 to 95%, and in accelerated systems from 88 to 116%. There is a significant number of non-productive sheep in flocks (from 5 to 17%), which may represent up to 50% of the flock in less efficient farms. Litter size tended to be higher in lowlands systems (1.40) in comparison to those in hills or mountain areas (1.33). Despite the higher complexity of management for accelerated reproductive strategies, the average litter size achieved (1.48) did not differ much from that obtained in systems following a 1-lambing-season-per-year pattern (1.36). There is a lack of valid and reliable data for abortion and lamb mortality risks, and low utilisation of technologies available (oestrus synchronization, artificial insemination and scanning). As a result, the number of lambs produced per ewe joined to the ram is in general low (<1.5). The SheepNet network will try to propose solutions to increase sheep productivity.

SheepNet European Knowledge Exchange

2) Platform – developed and regularly updated

Newsletters

3) Video

- SheepNet global presentation

- Tips and tricks

- Solutions

4) Peer to peer

- National workshops in each country (2/year)
- Trans-national workshops (2/year)
- Innovative farms to implement and evaluate new knowledge and practices discover through SheepNet

SheepNet
European Knowledge Exchange

5)Four social media accounts

1. **Facebook - www.facebook.com/SheepNetEU**

2. Twitter - @SheepNetEU

3. YouTube - SheepNet EU

4. LinkedIn - www.linkedin.com/groups/8605088

SheepNet
European Knowledge Exchange

SheepNet website & Social media

www.sheepnet.network/

www.facebook.com/SheepNetEU

@SheepNetEU

SheepNet

Claire Morgane-Davies
SRUC

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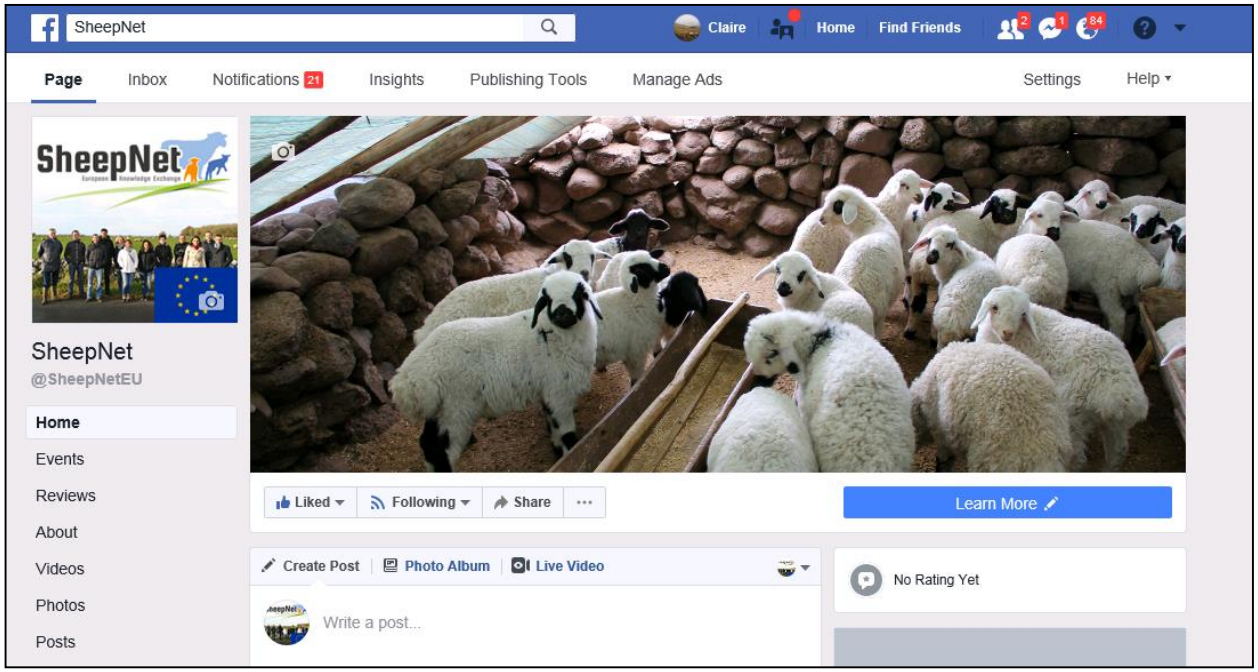
Social media - Facebook

www.facebook.com/SheepNetEU



300 followers
275 Likes

Social media - Twitter

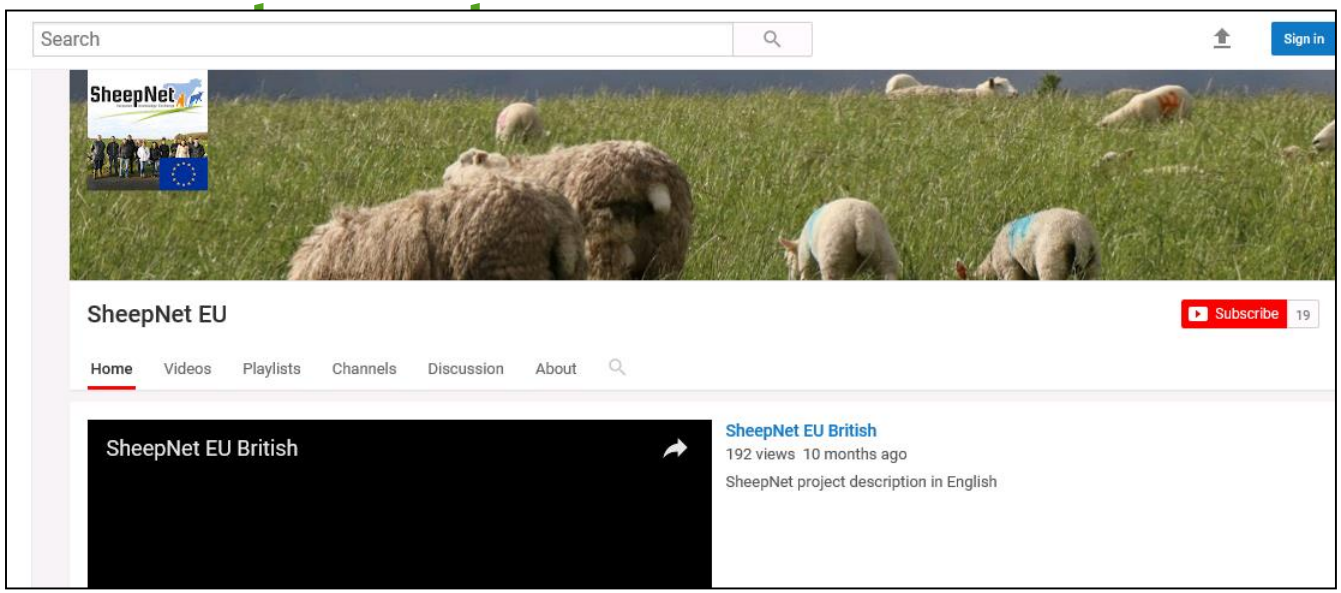
@SheepNetEU

439 followers

#SheepNetEU

Social media - YouTube

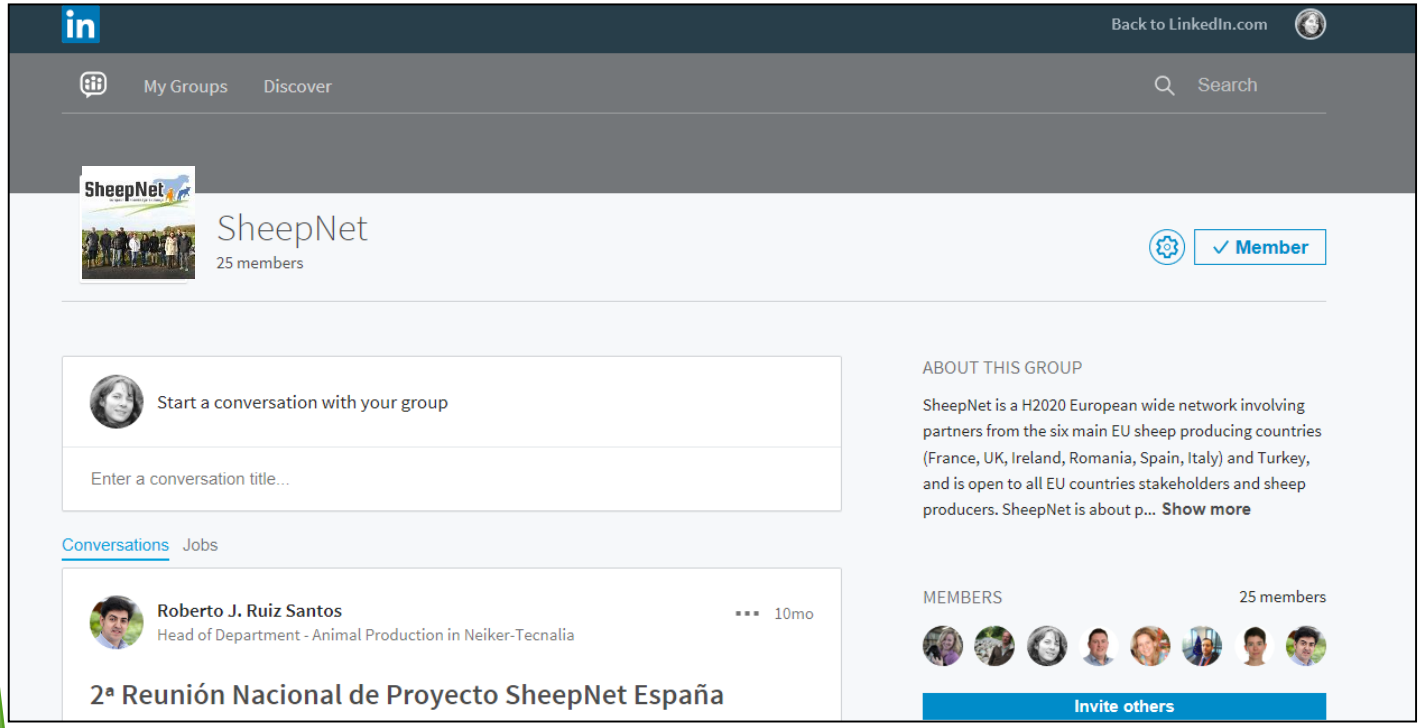
SheepNet EU



2644 views since we started.
61 videos uploaded.
19 subscribers
160 shares
Top video – Irish: *preparation for lambing* (362views)

Social media - Linkedin

SheepNet group



25 members

SheepNet website

www.sheepnet.network/

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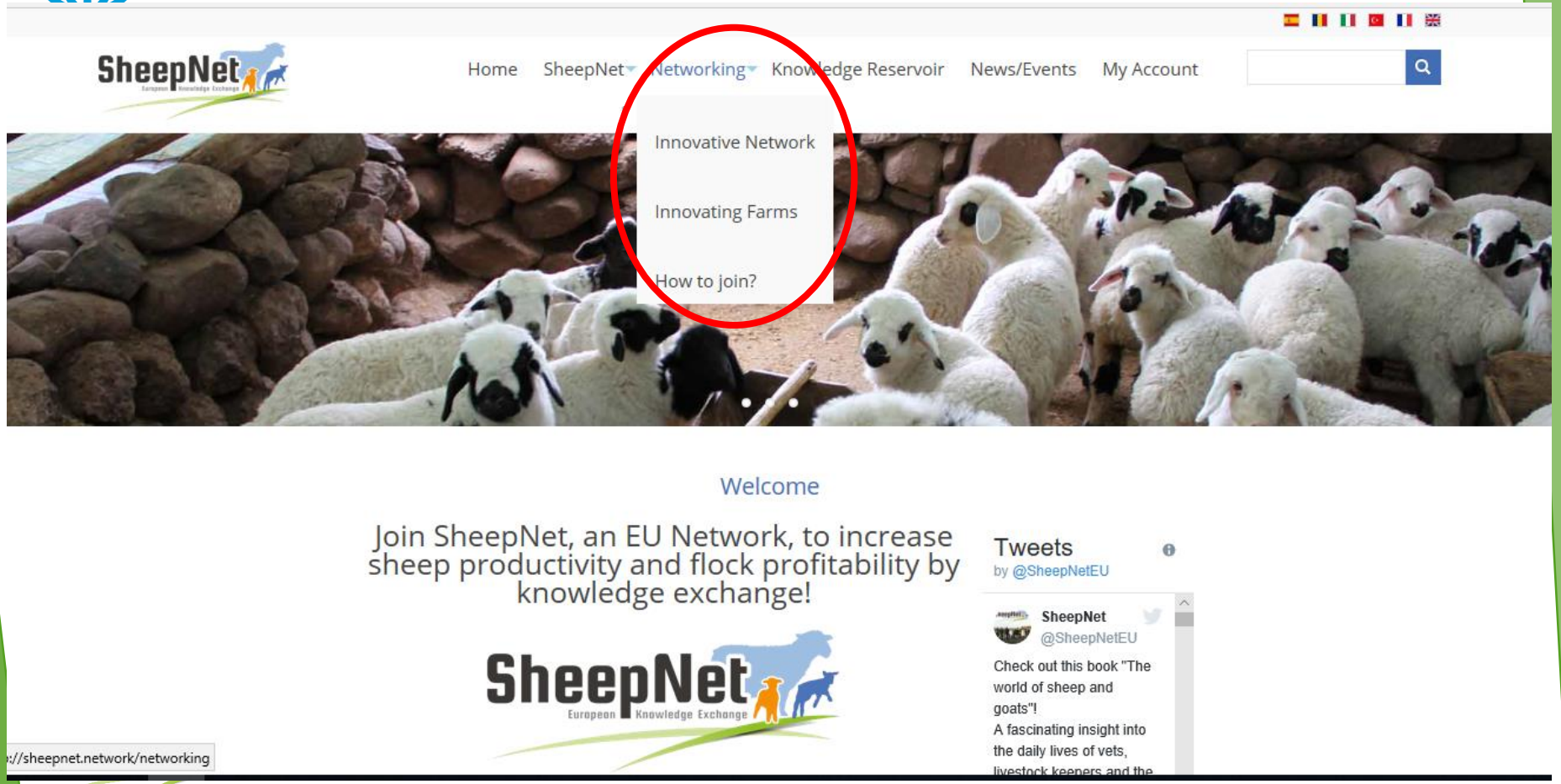

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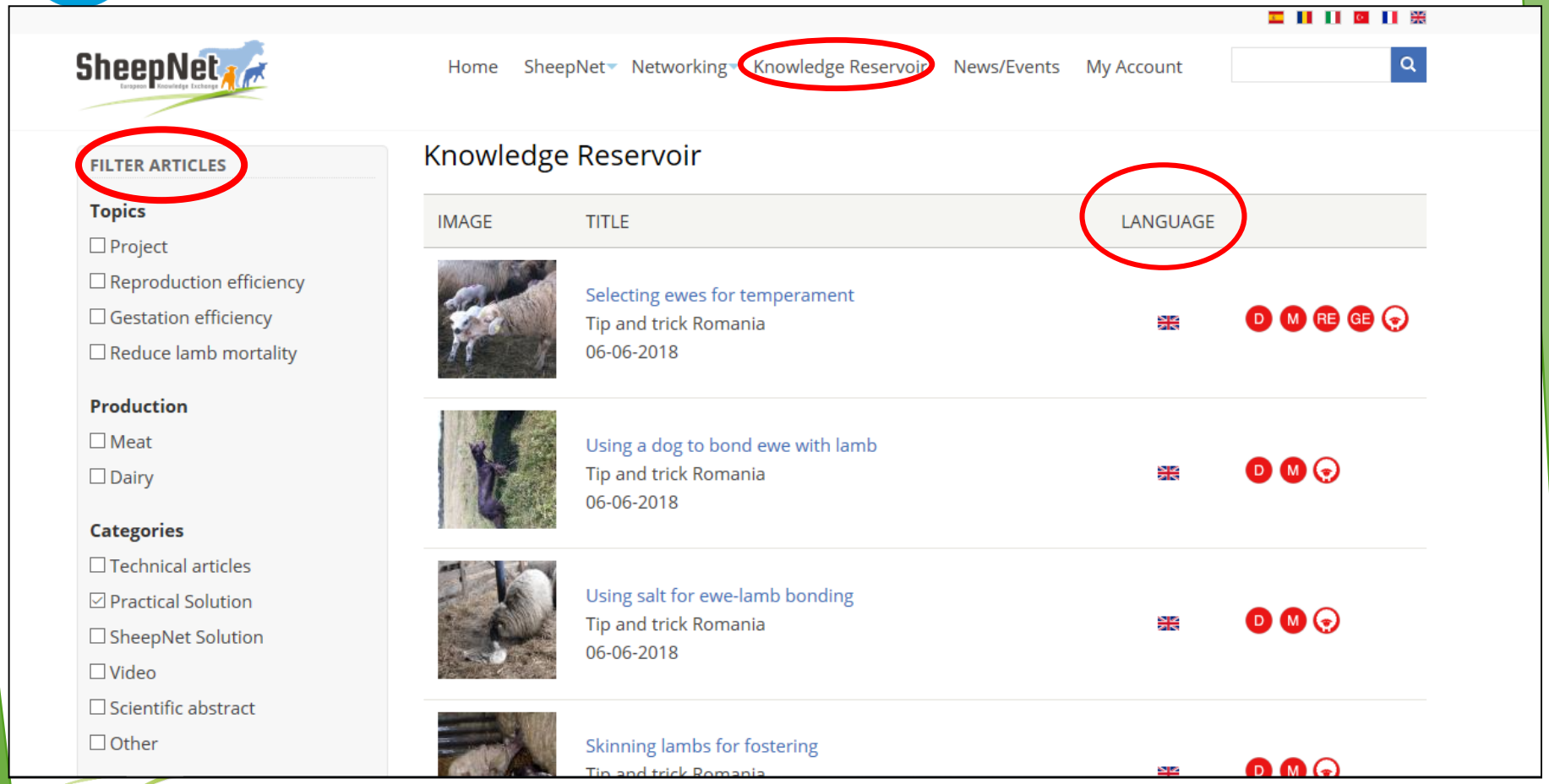

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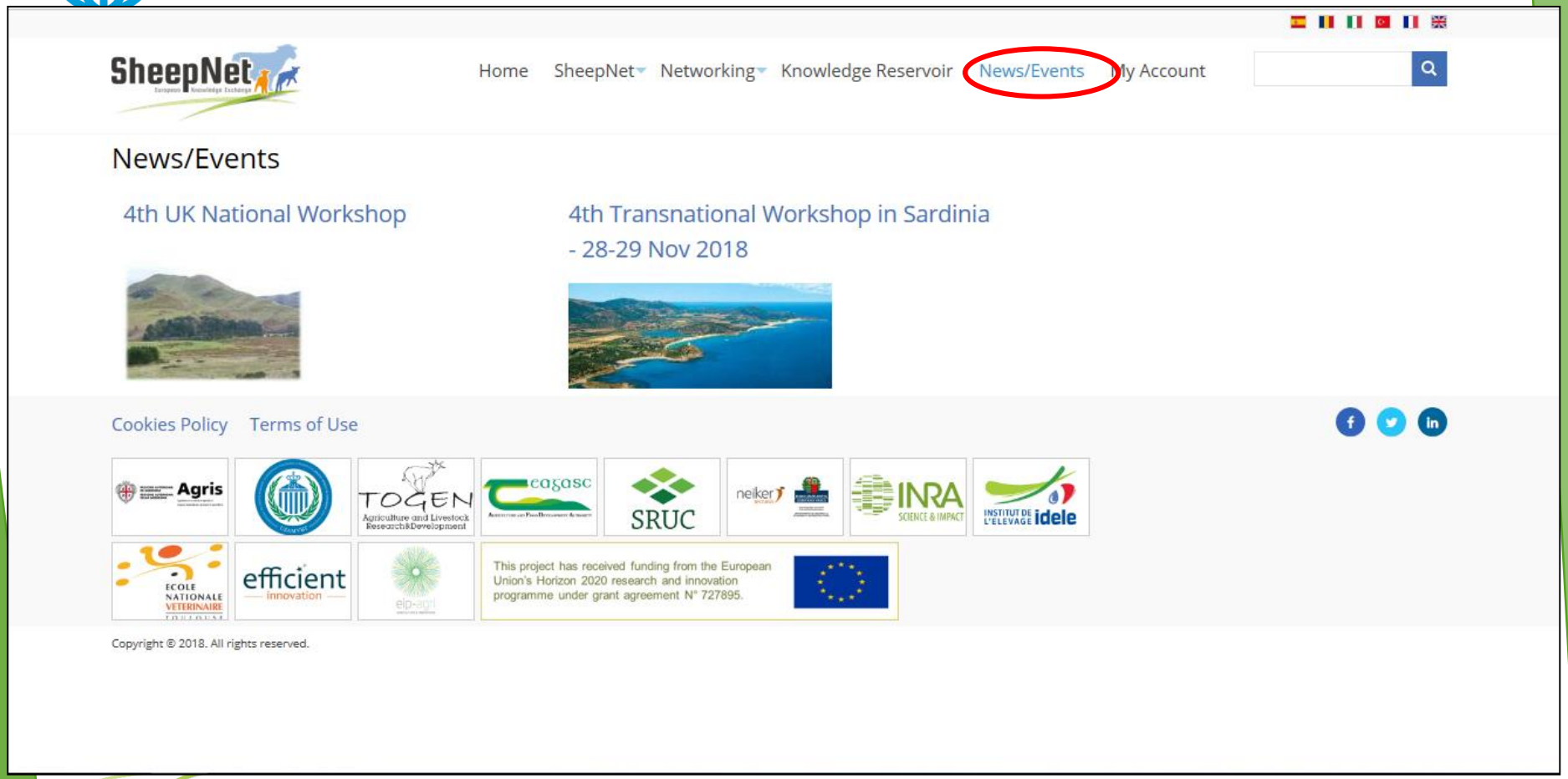

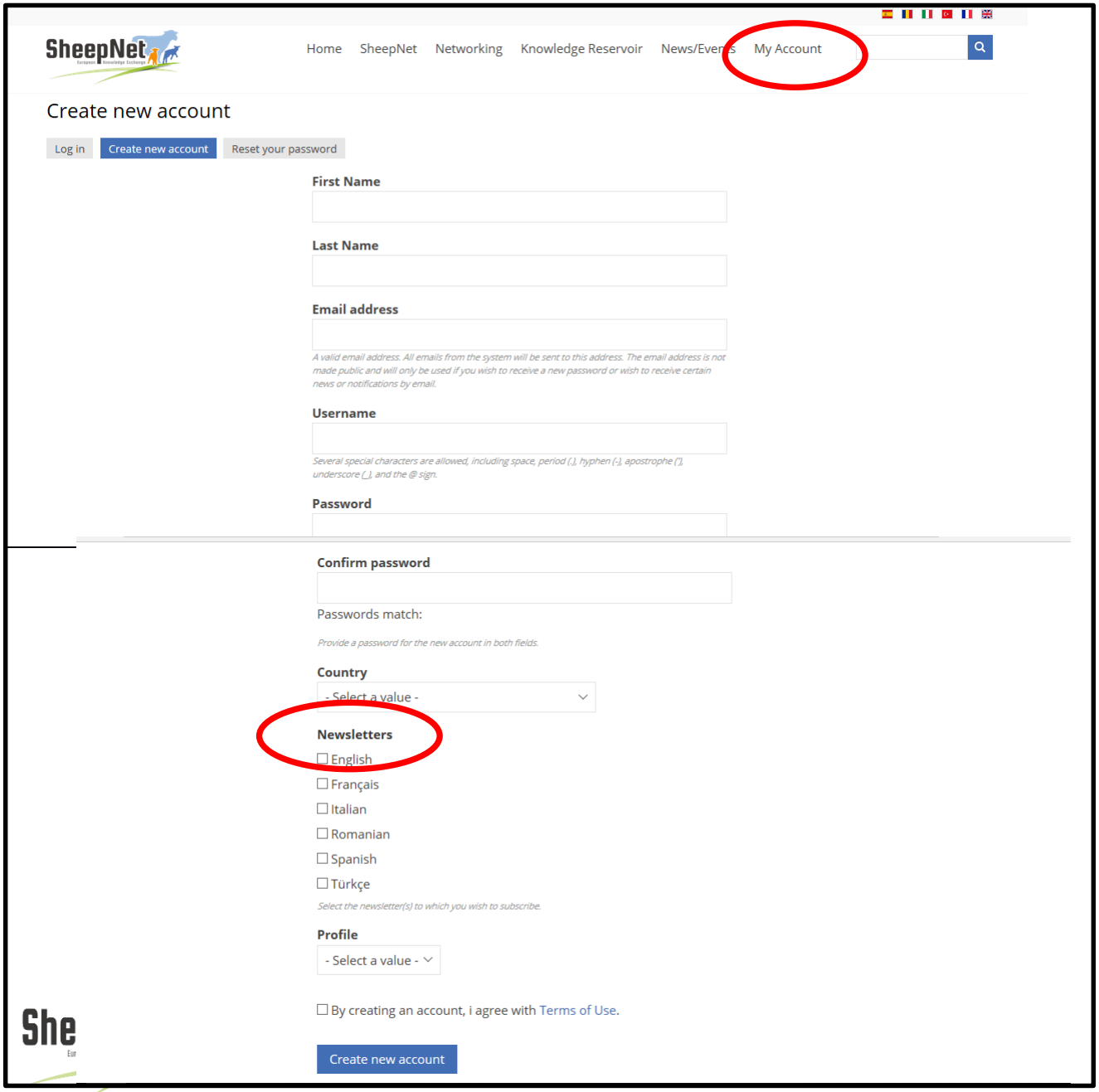
SheepNet
Home
SheepNet
Networking
Knowledge Reservoir
News/Events
My Account
Create new account
Log in
Create new account
Reset your password
First Name
Last Name
Email address
A valid email address. All emails from the system will be sent to this address. The email address is not made public and will only be used if you wish to receive a new password or wish to receive certain news or notifications by email.
Username
Several special characters are allowed, including space, period (.), hyphen (-), apostrophe ('), underscore (_), and the @ sign.
Password
Confirm password
Passwords match:
Provide a password for the new account in both fields.
Country
- Select a value -
Newsletters
English
Français
Italian
Romanian
Spanish
Türkçe
Select the newsletter(s) to which you wish to subscribe.
Profile
- Select a value -
By creating an account, i agree with Terms of Use.
Create new account

Be informed and join us!

SheepNet

European Knowledge Exchange

SheepNet : Sharing Expertise and Experience towards sheep Productivity through NETworking

www.sheepnet.network/

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