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SusSheP – Sustainable Sheep Production in Europe

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Leading the way in Agriculture and Rural Research, Education and Consulting

Sheep Production in Europe



SusSheP



European Sheep Production:

❖ 89 million sheep in Europe (EEA)

❖ Varied

- production
- breeds
- reproduction systems
- management systems

❖ Environmentally sustainable & w

❖ Profitable & labour efficient



SusSheP

Sustainable Sheep Production



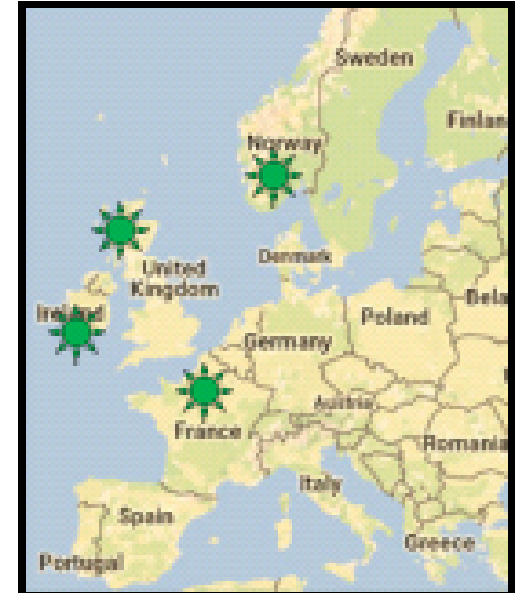
SusSheP



3 year ERA-NET European project (2017-2020), with 4 European countries:
Norway, France, Ireland & UK.



Overall aim: to increase the sustainability and profitability of European Sheep Production by addressing key industry focused problems



Key objectives :

- ❖ Provide **new genetic tools** for farmers to increase **longevity** of ewes ←
- ❖ Quantify **labour input** and **carbon hoofprint** in contrasting sheep systems ←
- ❖ Develop more socially acceptable **methods of AI**, looking at ewe breed effects
- ❖ Assess farmers' **attitudes to change**

Labour & Carbon - Goals



- To characterise **labour input** and **carbon hoofprint** of different sheep production systems

- 20 focus flocks:

- With/without PLF:

- 4 in the UK, 2 in Ireland

- Prolific/non-prolific breed:

- 4 in Ireland, 2 in Norway

- With/without high genetic gain

- Indexes (4 in the UK)

- AI (4 in France)

2 in the UK

2 in Ireland

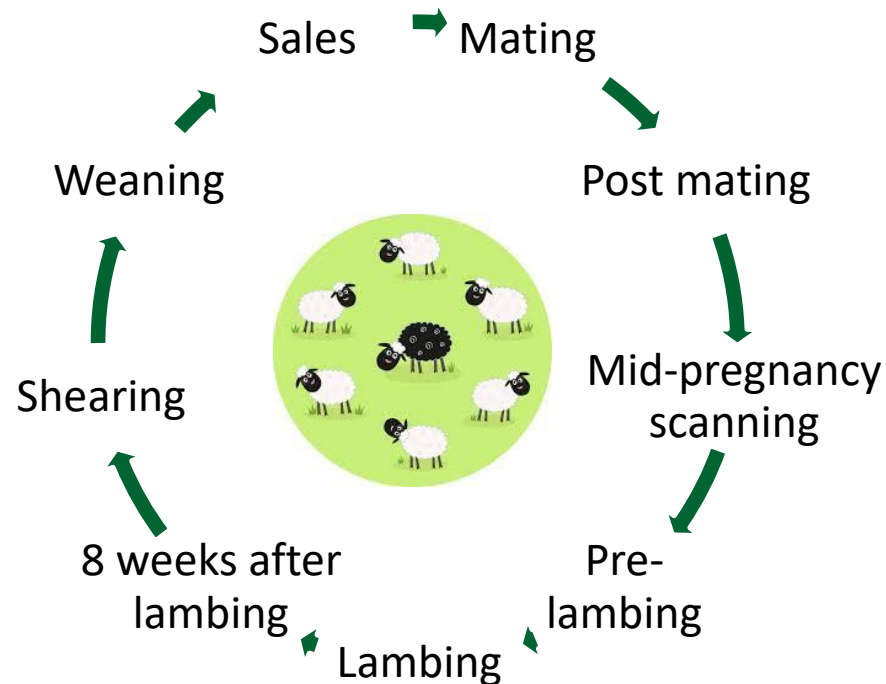
2 in the UK



Labour & Carbon - Methods



- Labour recording:
 - on sample days during the sheep year (~10-12 days) – Go Pros
 - Common questionnaire on farm info and labour
- Classification:
 - 13 main tasks
 - Sub-tasks



Labour & Carbon - Methods



- Carbon hoofprint: Agricalc ©

- Inputs:

- land and crops (area, fertiliser, yield, etc. includes grass, forage, woodlands)
- Livestock (lwt, no. bought, sold, etc.)
- Livestock numbers
- Energy and waste

- kgCO₂e/kg output

- Whole farm
- Flock – per kg/meat

The screenshot shows the 'New Farm Report' page in the AgRE Calc v1.0 application. The user is logged in as 'Claire Morgan-Davies (farm)'. The page includes a navigation menu on the left with options like Home, Updates, About, Contact Us, Help, and Logout. The main content area is titled 'Kirkton Claire MD - Data Entry' and contains several sections for data entry:

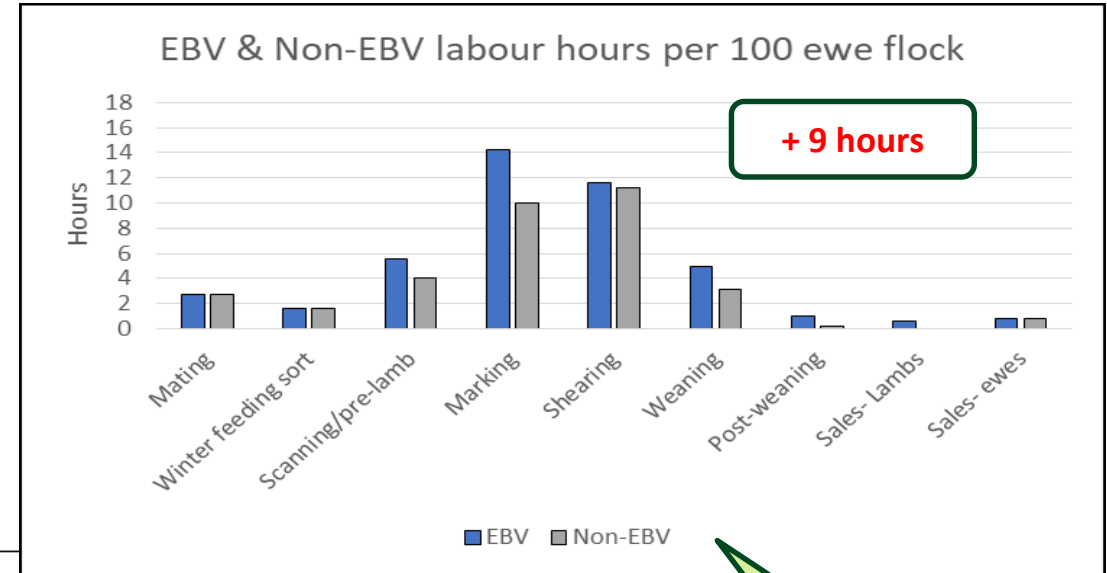
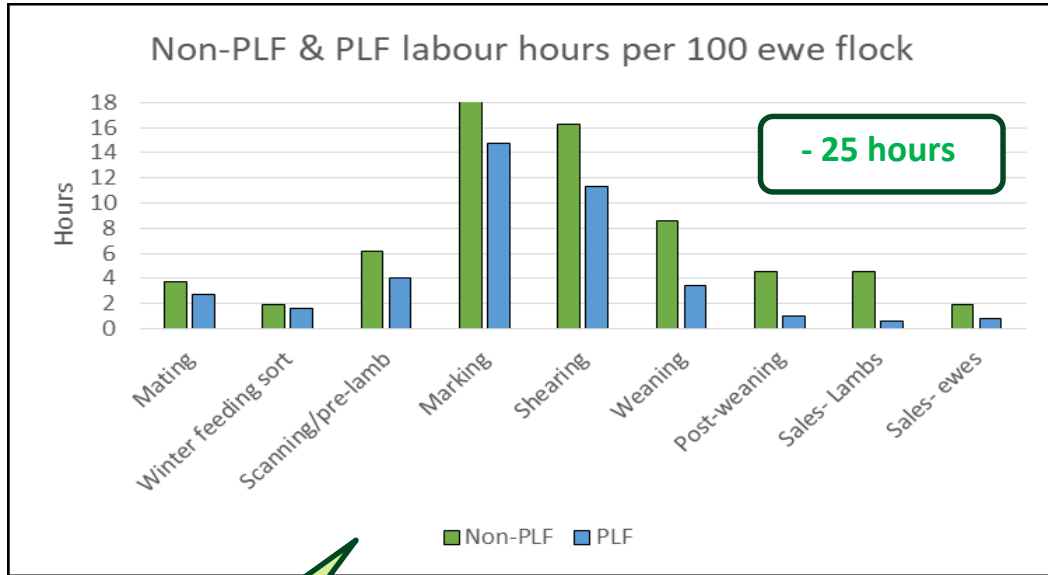
- Report details:** Includes a text input for 'Reference Name (e.g. Final Report)' and a dropdown for 'Average Annual Temperature' set to '10'.
- Year End:** Includes a text input for 'Enter the month and year end of the 12 month period you would like to be assessed.', a dropdown for 'Month' set to 'Apr', and a dropdown for 'Year' set to 'Please select...'.
- Farm Advisory Service Funded?:** A checkbox labeled 'FAS Funded'.
- Beef Efficiency Scheme Funded?:** A checkbox labeled 'Beef Efficiency Scheme Funded'.
- Financials:** A checkbox labeled 'Show financial inputs'.
- Enterprise Type:** A section with instructions to 'Select all the enterprises on the farm that generate saleable output...' and a list of checkboxes for Beef, Sheep (checked), Dairy, Pigs, Poultry, Forage, Combinable crops, Potatoes, beet and root vegetables, Other vegetables, Fruit, and Other crops.
- Sheep Enterprise Details:** Includes a dropdown for 'Choose Sheep Enterprise Type' set to 'Please select...' and a checkbox for 'Organic'.

At the bottom, there is a '(Save this report for more options)' button and another dropdown for 'Choose Sheep System Type' set to 'Please select...'.

Labour – results *(excluding lambing)*

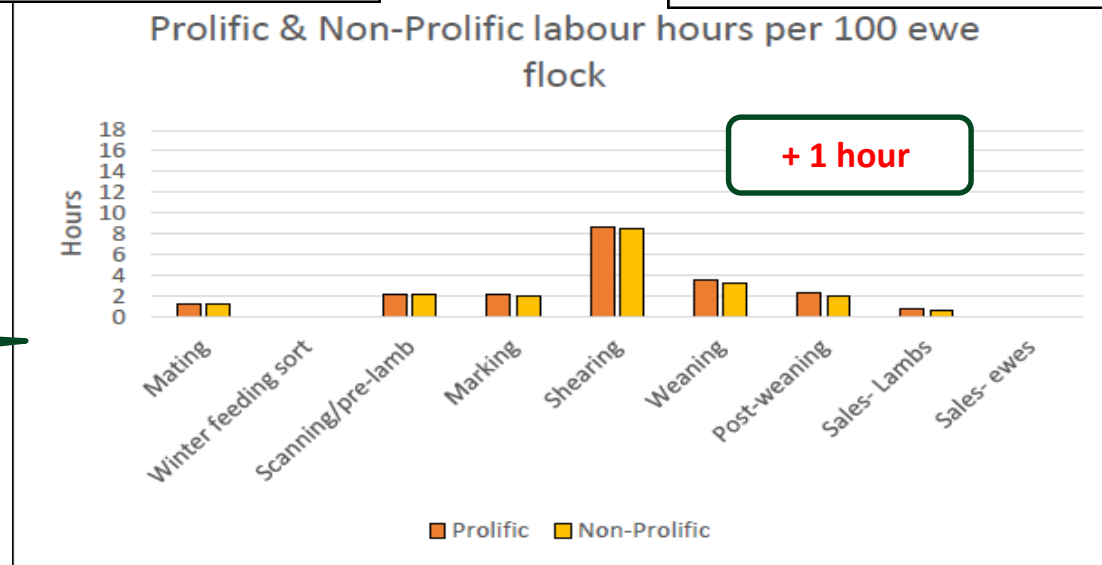


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2 in the UK

2 in Ireland

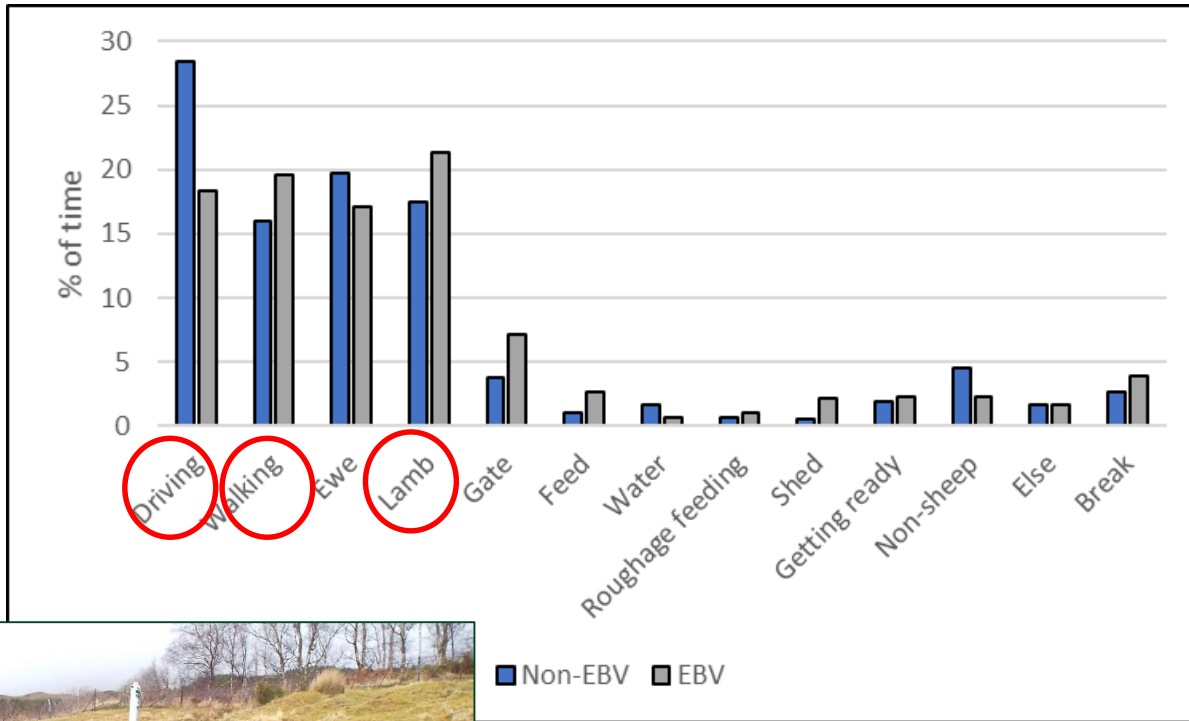


2 in the UK

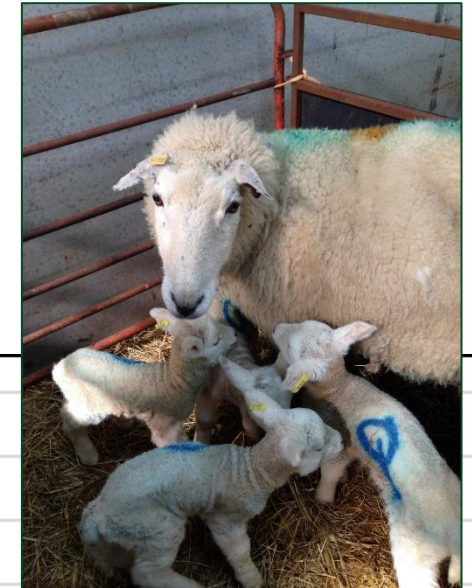
Labour – results *(lambing only)*



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2 in the UK



2 in Ireland

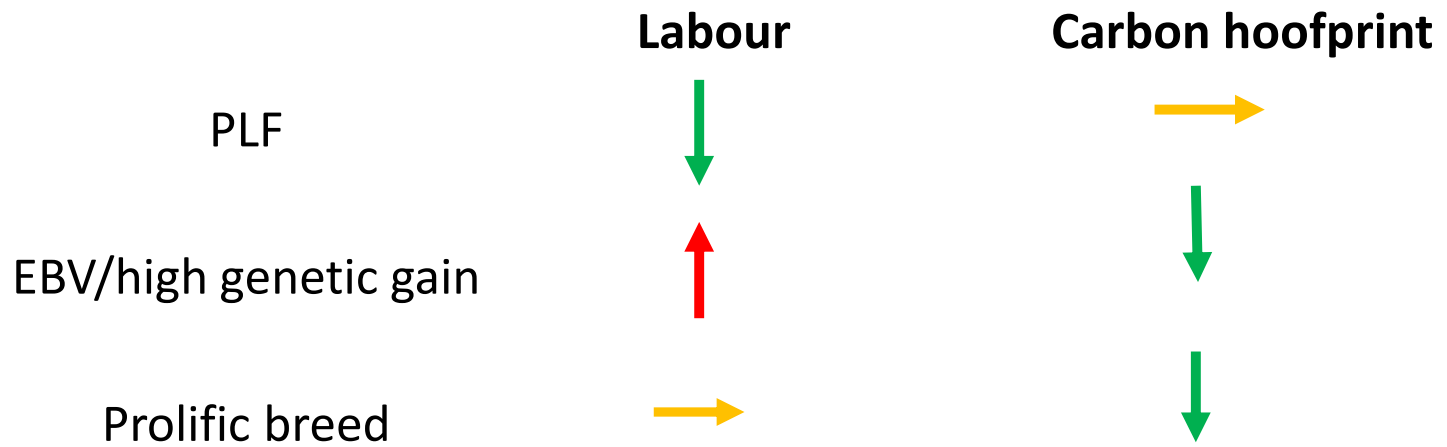


Non-Prolific Prolific

Carbon hoofprint – results



Product CO ₂ e emissions	Unit	PLF	Non-PLF	EBV	Non-EBV	Prolific	Non-Prolific
Meat	kg CO ₂ e / kg lwt	17.80	16.17	16.48	19.20	9.92	11.02
	kg CO ₂ e / kg dwt	40.00	36.33	37.34	42.66	22.05	25.73



SusSheP – Ewe Longevity



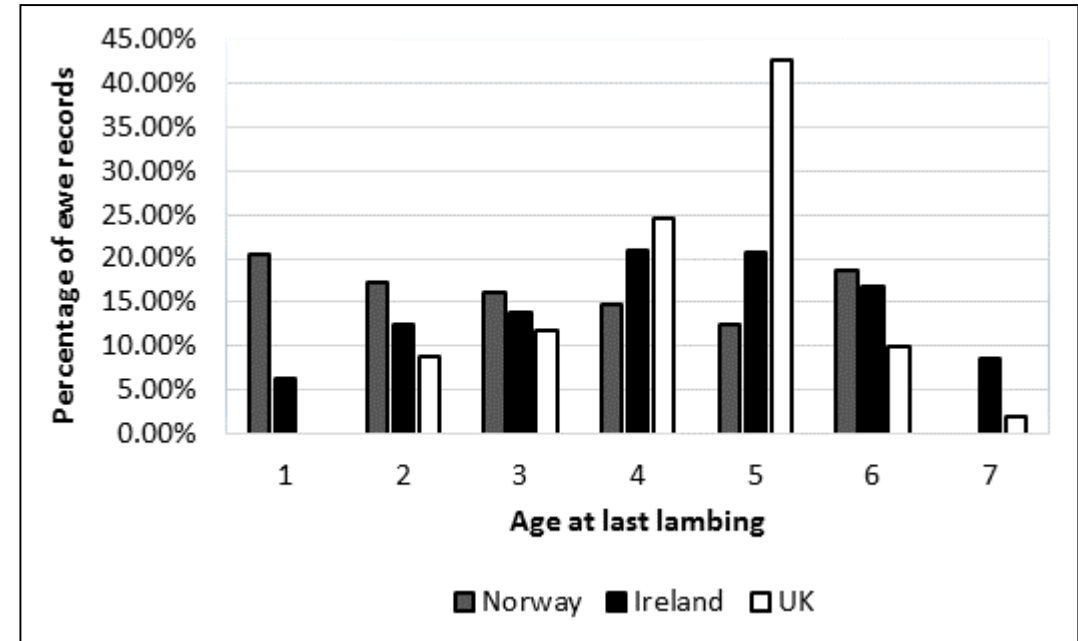
- Important trait economically
- Purpose of this work
 - Investigate genetic factors controlling longevity under different production systems.
 - Incorporate findings into future national breeding programmes
 - Breeding healthier, longer living ewes that can perform well in a range of diverse environments



SusSheP – Ewe Longevity



- Countries involved:
 - Ireland, Norway, UK
- Main definition of longevity across all countries:
 - Age at last recorded lambing event
- Differences in the main reasons for culling between countries/systems also being investigated:
 - Mastitis = Ireland & Norway
 - Tooth Loss = UK



Conclusions



– Preliminary results

- Effects of changing management on labour
 - Identify most carbon efficient production systems
 - Longevity in national maternal breeding indexes
 - Alleviate societal concerns around AI
 - In partnership with farmers – surveys & workshops
- } Trade-offs?
- } Common predictors?



Acknowledgments



- All my SusSheP colleagues & students



- EU funders



*..... and the Norwegian,
British, French and Irish
farmers for agreeing to be
filmed!*

- UK funder



Carbon hoofprint – results



	Unit	PLF	Non-PLF	EBV	Non-EBV	Prolific	Non-Prolific
Net emissions from land use	kg CO ₂ e	125,658	124,192	91,818	- 312,249	143,864	45,596
Whole farm CO₂e emissions	kgCO ₂ e/kg output (dwt)	37.70	34.42	33.74	38.72	20.86	4.37