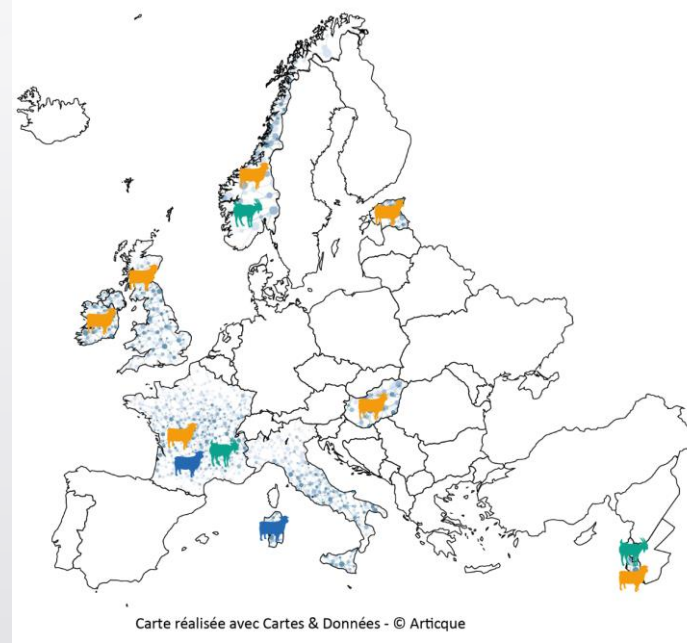


Sm@RT: Main lessons from New Zealand on PLF uptake in Small Ruminants

Gautier, J.M., Morgan-Davies, C., Depuille, L., McLaren, A., McClearn, B., Grøva L., Piirsalu, P., Giovanetti, V., Halachmi, I., Bar-Shamai, A., Klein, R., Kenyon, F., Gonzalez-Garcia, E., Keady, T.W.J



The Sm@RT team



UK	SRUC	Moredun
Ireland	Teagasc	
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France	INRAE	In Extenso Innovation Croissance
Italy	Agris	
Hungary	UNIVERSITY OF DEBRECEN	
Estonia	Eesti Maaülikool	
Israel		



This project has received funding from the European Union's Horizon 2020 research

Led by:



In partnership with:



New Zealand in numbers (source: Beef+Lamb 2021)

Area : 26.8 million ha

- 13.3 million ha for agriculture (incl. 7.4 million ha of grassland + 2,1 of tussock)

Rainfall : between 359 & 6,715 mm

- according to areas (east, west, north & south)

Population : 5.1 million

Farms : 50 000

- 267 ha/farm on average
- At least 83% of agricultural areas is for livestock

Sheep: 25.7 million heads (adults)

- Main breed: Romney
- Mean productivity: 1.3 lambs/ewe joined
- Merinos ewes: only 5% of national sheep flock (decreasing since the 80s)
- Dairy production is still marginal and new

Goats : 93 606 heads (adults)

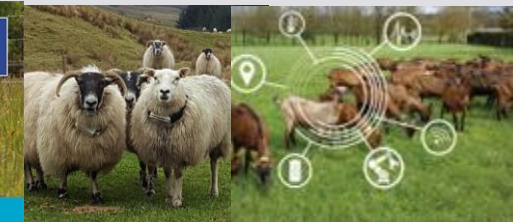
- Production of meat and milk

Beef cattle: 4 millions head (adults)

- Main breed = Angus




Dairy cattle: 6.2 millions heads (adults)

- Main breed = Holstein-Friesian/Jersey
- Average herd size = 444 cows/herd



New Zealand in numbers (source: Beef+Lamb 2021)

Meat :

-  sheep ->353 000 tonnes of meat produced, 99% for export (58% China, 23% EU, 12% USA)
-  beef ->759 000 tonnes, 98% for export
-  goats ->2 000 tonnes, 70% for export



Study tour

Waikino farm

Gallagher

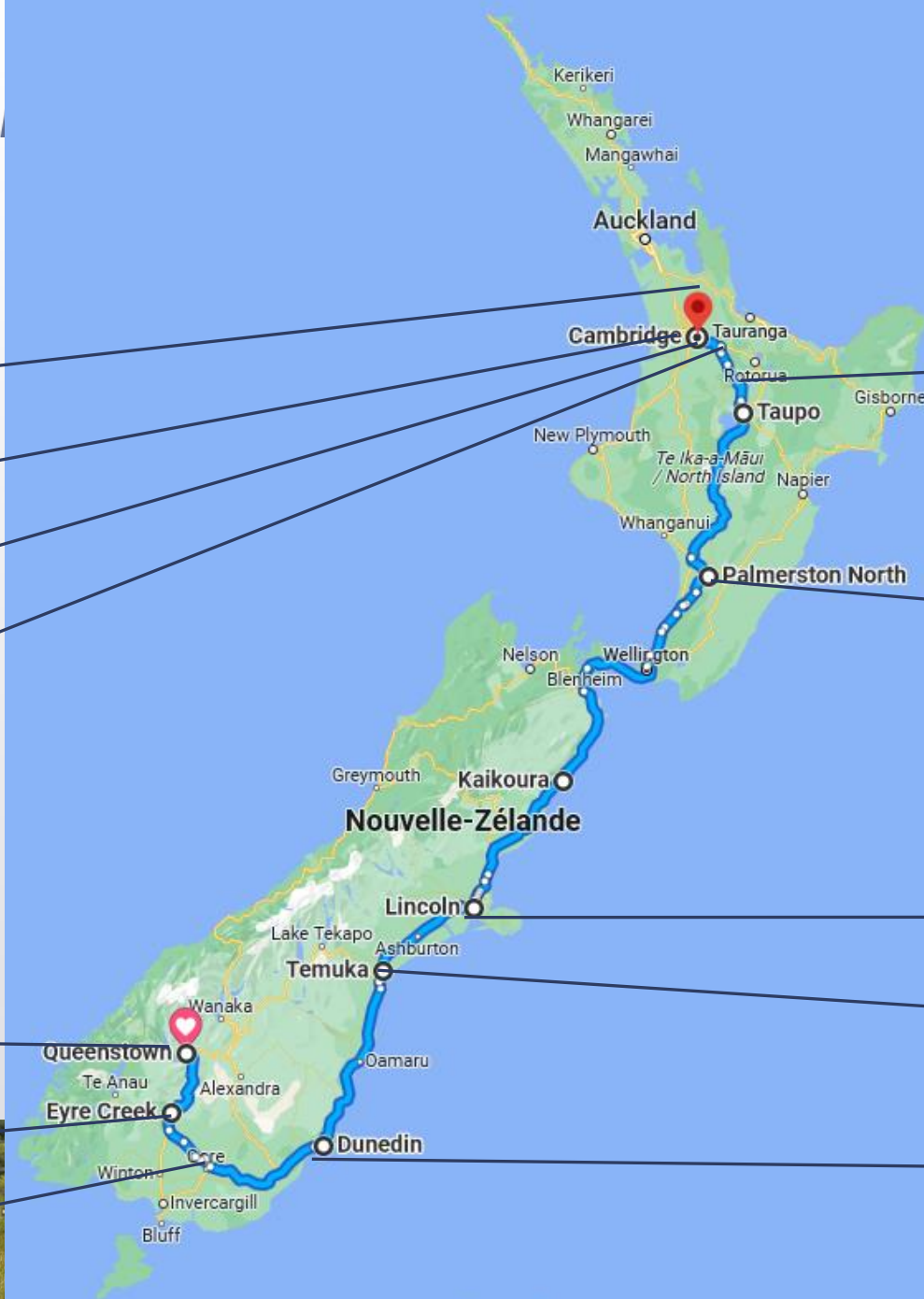
Workshop 4

Spring Sheep Milk Co – Monovale

Mt Nicolas Station

Eyre Creek Farm

Howden farm



Dairy goat farm

Workshop 3

Lincoln workshop (2)

Pratley / Datamars

Invermay workshop 1 and research farm



Farms visited: Meat Sheep

• Mt Nicholas Station

29 000 Merino ewes

36,000 ha (300-2000 m asl)

Extensive system, mostly on hills

Main focus= wool production



PAMU Landcorp farm: Eyre Creek

2 500 Romdale ewes + deer

Extensive system

No mobile phone network

Installation of LORA antennas
on top of hills but limited
coverage.



Howden farm

4 000 Texel ewes

Productivity 1.5 lamb/ewe

Important pasture
management

Utilisation of the GrassCo
system



Farms visited: Dairy Sheep

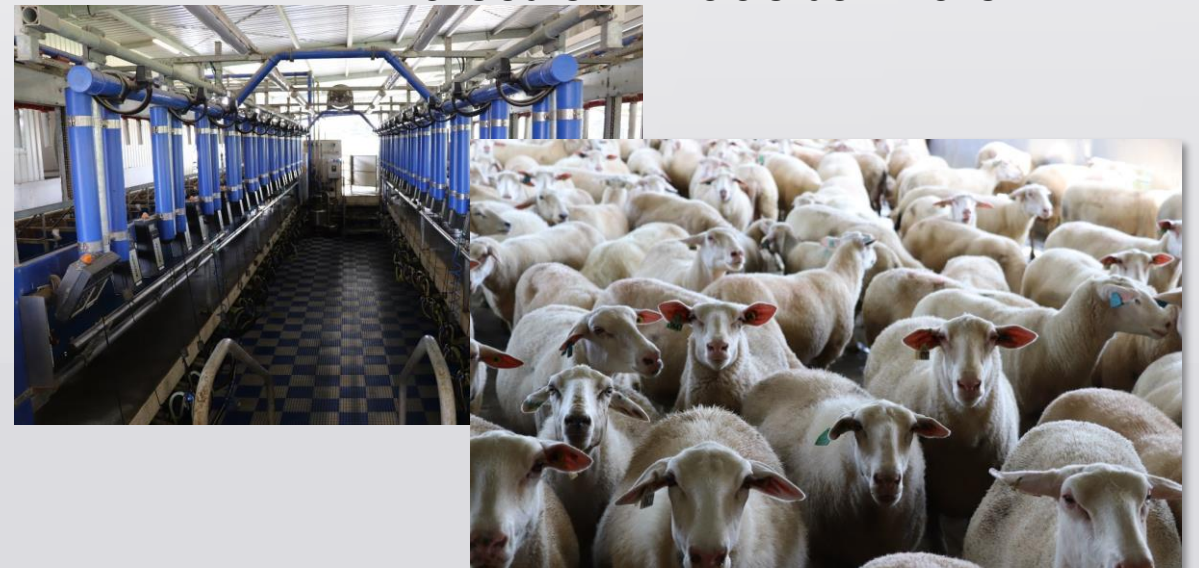
• Waikino farm (Maui Milk)

- Started in 2015 to supply Chinese market
- 790 Southern Cross dairy sheep
- RFID tags for each ewe
- EID weigh crate
- Rotary milking parlour with 64 units
- Milk meter (not used)



• Manovale Farm (Spring Sheep Milk)

- 50ha
- 900 Zealandia
- RFID ear-tag
- EID weigh crate
- Milking parlour 2X24 with milk meters
- Information recorded for selection with a custom-made software

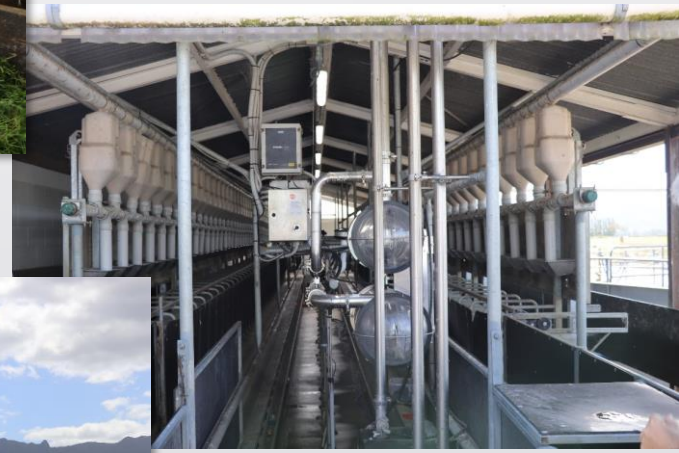
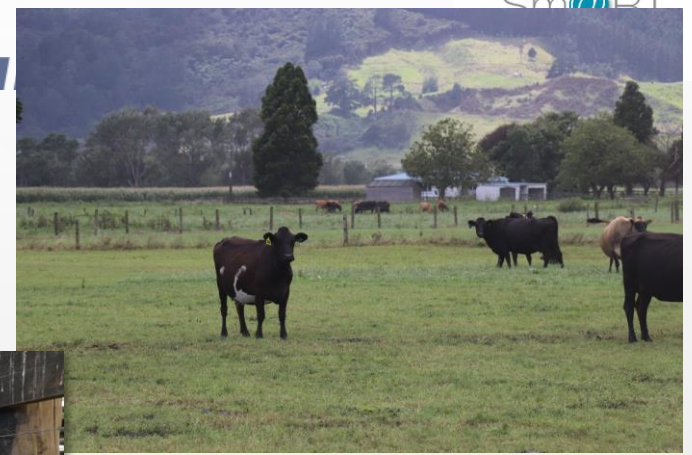




Farms visited: Dairy productions

- 3 milk productions farm (Paul Schuler)

- 320ha
- 320 dairy cows
- 700 dairy goats
 - RFID tags to follow up milking
- 835 dairy ewes
- Herd/Flock managed according to circumstances (dairy cows = buffer)



Technologies used on farms

Weigh crate

(drafting system)



Stick reader + EID



Milk meters



pregnancy scanning



Grass measurement

(GrassCo)



More solutions for
cattle and deer
productions

Barriers for technology uptake

- Huge flock -> cost
- large number of ewes managed per labour unit
- EID is not mandatory
- **Lack of network coverage**
- Additional management input
- Not ease to use
- Lack of follow-up support
- data interoperability



lack of return on investment
lack of producer interest

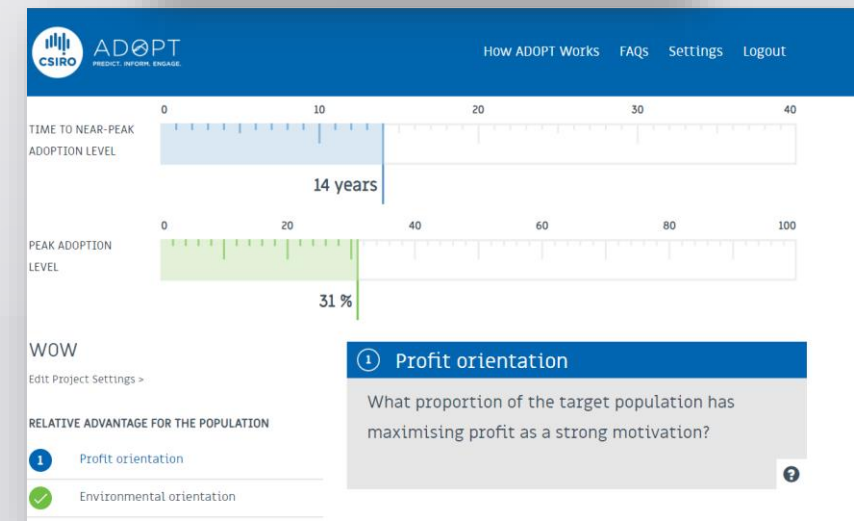
**No tech
adoption**

Better tech uptake by dairy farms



Key elements for adoption

- The technology must answer a real **need**:
 1. What is the problem?
 2. Can we solve the problem without technology?
 3. Which existing technology can solve the problem?
 4. Purchase and transfer the technology
- Regulation can be an accelerator for deploying some technologies (e.g. RFID ear-tags)
- Tool ADOPT (<https://adopt.csiro.au/>) developed by CSIRO in Australia
 - To determine the level of adoption of innovations (incl technologies) using a questionnaire



Lessons from New Zealand

- Large flocks but few technologies used, except for the dairy sector
- Some specific and similar challenges
- Pragmatic approach for adoption
- Lots of Innovations at research and tech enterprise level mostly for cattle and deer




Thank you for your attention


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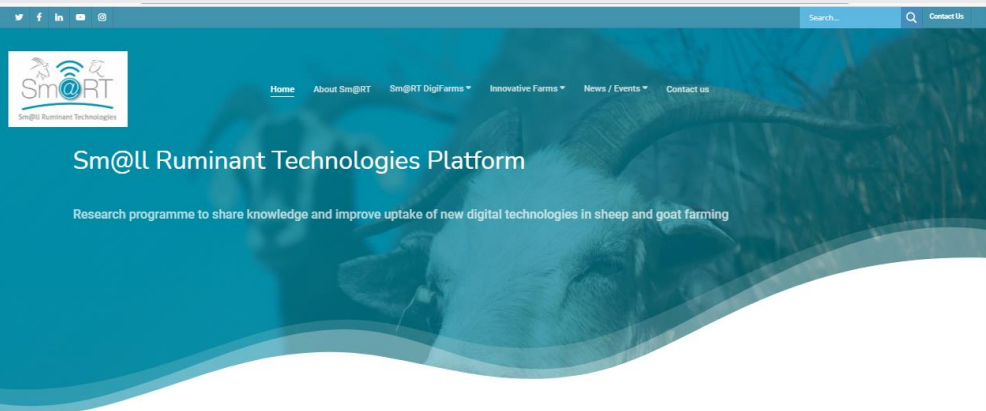
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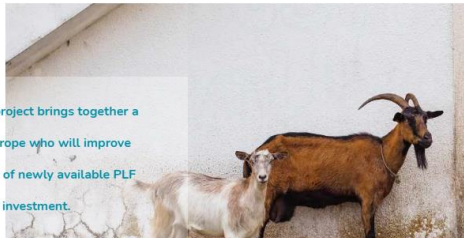
www.smartplatform.network



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The EU-funded Sm@RT (Sm@ll Ruminant Technologies) project brings together a network of researchers, farmers & advisors from across Europe who will improve awareness amongst those working in the farming industry of newly available PLF tools, demonstrating their potential and possible return of investment.



from the European Union's Horizon 2020 research and innovation programme, under grant agreement 101000471

