

The impacts of delivering credence attributes of livestock products

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agresearch
āta mātai, mātai whetū

OUR LAND
AND WATER

Toitū te Whenua,
Toiora te Wai

National
SCIENCE
Challenges

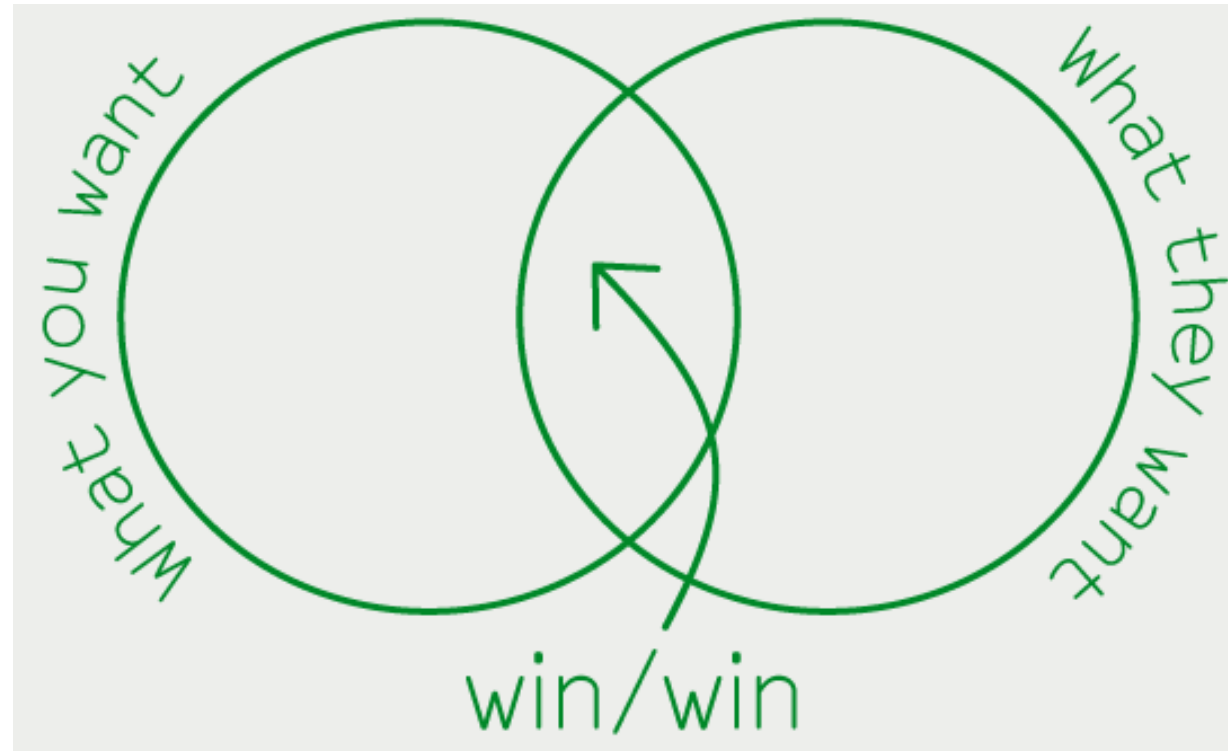
Product “story”



Product impact



High value + low impact?



High value + low impact?

- Will delivering these increase farm profitability?

AND

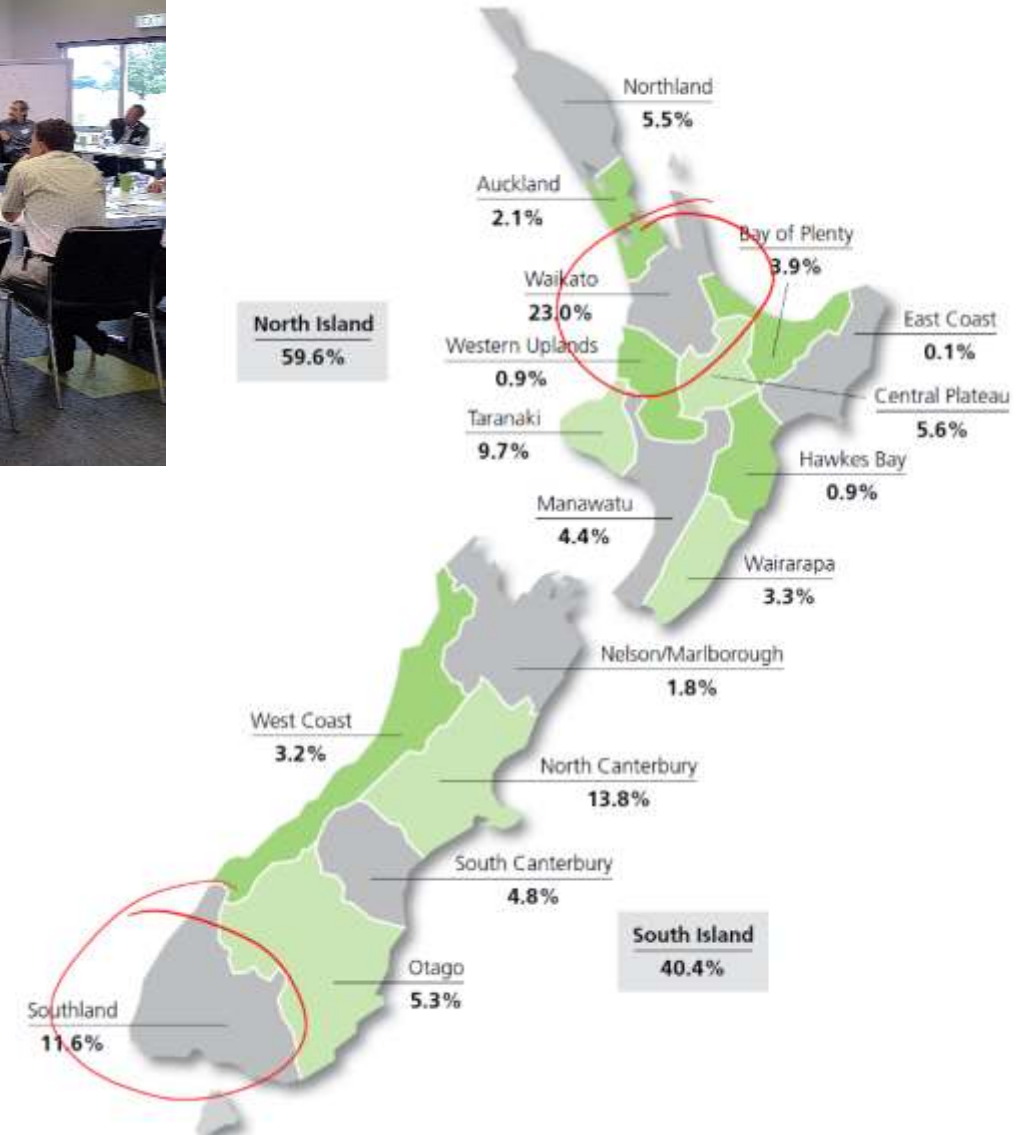
- Do these products/attributes have lower environmental impacts?
 - Nitrogen leaching
 - Greenhouse gas (GHG) emissions
 - (Phosphorus)



Scenarios



- Workshop → “Pasture-fed” & “Carbon neutral”
- Management
- Waikato & Southland
- Regional average dairy “system 3” (= **BASE**)





Scenarios

→ *Pasture-based* pasture system:

- No crops or supplements
- Winter on the milking platform
- Make and purchase pasture silage

OVERSEER
Nutrient Budgets

FARMAX

2 Scenarios:

Reduce: Removed crops & imported feed; increased silage; ↓cows/ha

Maintain: Increase N fertiliser; ↑cows/ha; (purchase silage)

Waikato

BASE

REDUCE

MAINTAIN

GHG emissions
(kg CO₂ eq./ha)

11,757

8,689

- 26%

9,871

- 16%

Nitrogen leaching
(kg N/ha)

37

30

-19%

35

-5%

EFS \$/ha/yr

940

679

958



Southland

BASE

REDUCE

MAINTAIN

GHG emissions
(kg CO₂ eq./ha)

11,927

8,217

9,775

- 31%

- 18%

Nitrogen leaching
(kg N/ha)

24

15

24

-38%

EFS \$/ha/yr

1306

618

1287



EFS \$/ha/yr

Waikato

BASE

\$
940

Reduce

\$
1012

Maintain

\$
1328

Southland

\$
1306

\$
943

\$
1726

Willingness to Pay (WTP) estimates for Price premium:

- Pasture-fed 25% [6 – 50 %]
- Farm share of price premium: 31% (sd. 4%)

A word about carbon neutral...

Carbon neutral:

- Mitigations decreased N leaching and GHG emissions per hectare
- BUT decreased profit too -Additional costs for C-offset
- Land area for pines ~ 25-35% area-equiv. of dairy farm

Key messages

Regional differences –environment:

- Pasture-fed:
 - N leaching reduced by 19 & 38%
 - GHG emissions reduced 26 & 31%

...BUT decreased profit

- Management to increase production also reduced environmental benefit:
 - N leaching 0 & 5%
 - GHG 16 & 18%

Risk that there will be little environmental benefit if we go for the most profitable option





Other considerations...

- Other attributes rank higher than the environment
- When does “Environmentally Friendly” become business as usual?
- Future/Long term: Link environmental benefits to higher ranked attributes &/or physical product attributes

Attribute	%
Organic	35.8
Hormone/Antibiotic free	32.2
Animal welfare	31.9
Food safety	29.9
COOs/ROOs	29.8
Mixed attributes	25.7
Grass-based	24.9
PDOs/PGIs	24.7
Environment-friendly	24.1
Traceability	20.1

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