Landcare Research
Manaaki Whenua

agresearch

SURVEY OF RURAL DECISION MAKERS:
TRUST, GOALS, & MANAGEMENT

Pike Brown

Senior Economist
Capability Leader, Economics and Land Use Modelling

SURVEY OF RURAL DECISION MAKERS 1

SURVEY OF RURAL DECISION MAKERS 2

Purpose: Collect data to inform economic models

- Funded by MfE
- 3 regions: Canterbury, Southland, Waikato
- Conducted April 2013

- Funded by MBIE through VMO programme
- 13 regions
- Conducted July 2013

- Vetting:
  Independent farm systems scientists; Regional Councils; NZIER; Beef + Lamb NZ, DairyNZ, HortNZ, Rural Support Trust, Hawke's Bay Wine Grower's Association
- Piloting:
  Farmers/foresters/growers in Northland, Waikato, Hawke's Bay

agresearch

Landcare Research
Manaaki Whenua

Landcare Research
Manaaki Whenua

SURVEY OF RURAL DECISION MAKERS 1

131 questions

Topics:

- *respondent demographics;*
- *farm characteristics;*
- *succession plans;*
- *risk tolerance;*
- *production and profitability;*
- *information sources;*
- *operational objectives;*
- *current and intended management practices;*
- *future intentions;*
- *perceived behavioural control;*
- *norms;*
- *environmental attitudes*

SURVEY OF RURAL DECISION MAKERS 2

192 questions

- 125 +/- questions from SRDM 1

Plus more information on:

- *ownership structure;*
- *livestock sex and age;*
- *crop types;*
- *forestry type and practices;*
- *apiculture;*
- *land use changes;*
- *additional information sources;*
- *additional management practices;*
- *reasons underlying intentions*

SURVEY OF RURAL DECISION MAKERS: DESIGN

Internet surveys

Benefits:

- Less expensive and faster to implement
- Facilitates using smart logic, reducing completion time

27. How many distinct, geographically separate blocks comprise this farm? _____ blocks

If Question 27 = 1 then skip to question 29

28. Approximately how far away is the farthest part of your farming operation from your home, in km? _____ km

29. In what year did you begin working on this farming operation? _____

Cost:

- Lower response rates than alternatives
- Requires a reliable means of contacting respondents

SRDM: SAMPLE

Used AgriBase

- AssureQuality
- Developed in 1993 to track foot and mouth disease
- Evolved into a commercial database of rural NZ properties
- Relies on *voluntary* reporting
- Records e-mail addresses of those who provide them
  - Median email address from 2008

SURVEY OF RURAL DECISION MAKERS 1

Incentive

$10 donation to charity of the respondents' choice:

SURVEY OF RURAL DECISION MAKERS 2

Incentive

Random [$5, $10, $15, $20] donation to charity of the respondents' choice:

or [**no incentive**]

+ invitation to view results online

SURVEY OF RURAL DECISION MAKERS 1

5,811 emails sent

- ? Emails had bad addresses

- 285 (5%) unsubscribed
- 33 (1%) opted out via email
- 250 (4%) did not complete

Final sample = 536
minimum response rate = 16%

SURVEY OF RURAL DECISION MAKERS 2

8,546 emails sent

- Excluded small properties
- 2,650 (31%) emails had bad addresses

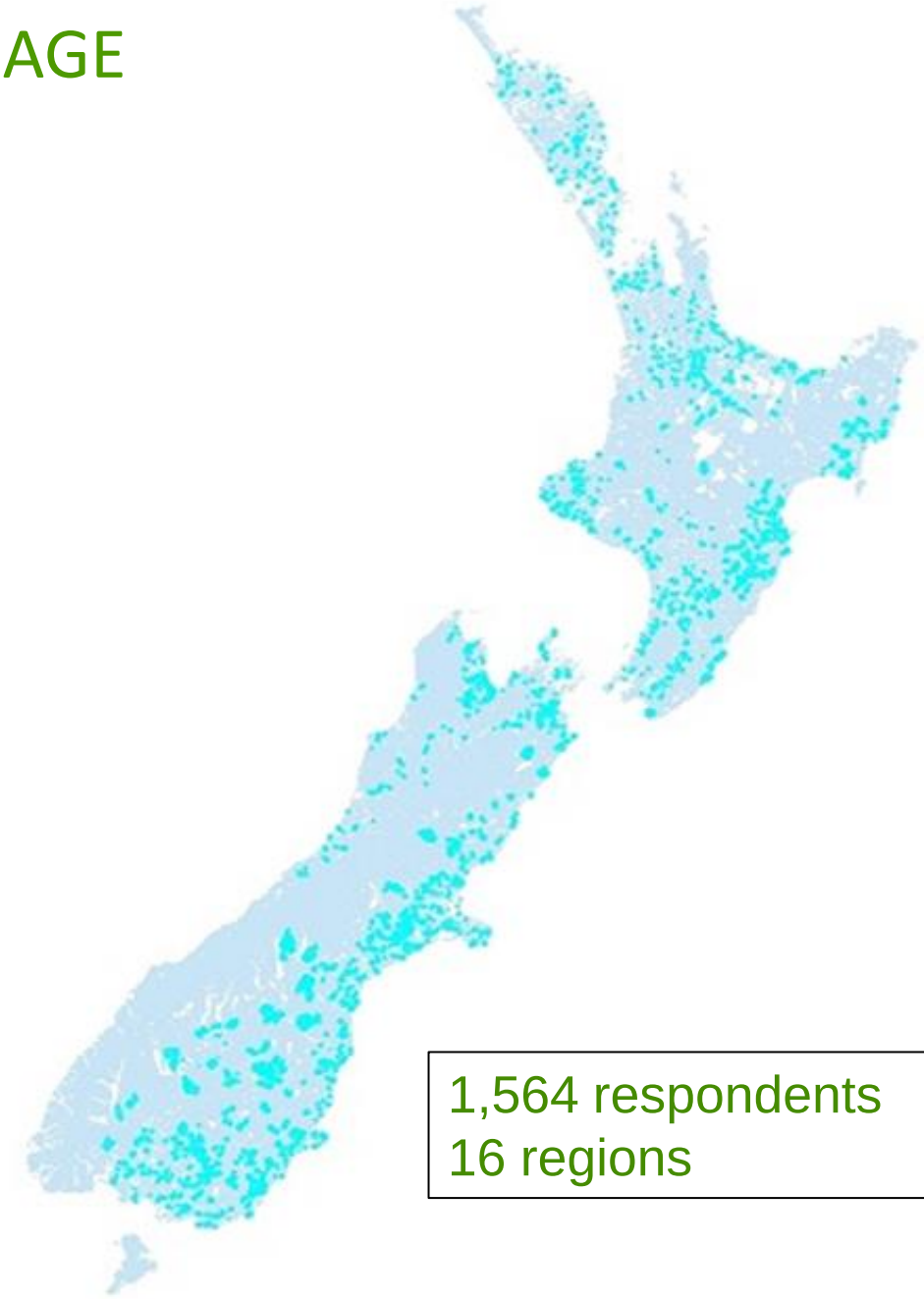
- We don't know how many emails were opened, but we know that:
  - 609 (7%) unsubscribed
  - 70 (1%) opted out via email
    - "I sold my farm over 10 years ago"
    - "I moved to Australia several years back"
    - "I only have a lifestyle block"
  - 275 (3%) did not complete

Final sample = 1037
minimum response rate 21%

- 1,795 opened the email in the 1st week (61% response rate?)

SRDM: SAMPLE COVERAGE

	Freq.
Auckland	48
Bay of Plenty	84
Canterbury	278
Gisborne	38
Hawke's Bay	131
Marlborough	89
Manuwatu-Whanganui	104
Nelson	5
Northland	83
Otago	200
Southland	134
Tasman	100
Taranaki	67
Waikato	116
Wellington	56
West Coast	31
Total	**1,564**



1,564 respondents
16 regions

SURVEY OF RURAL DECISION MAKERS 1

Incentive

$10 donation to charity of the respondents' choice:

SURVEY OF RURAL DECISION MAKERS 2

Incentive

Random [$5, $10, $15, $20] donation to charity of the respondents' choice:

or [**no incentive**]

+ invitation to view results online

SRDM: SHARE WITH EACH PRIMARY LAND USE

Region	sheep,beef	dairy	deer, other	hort/vit	arable	forestry	dairy support	other
Auckland	**41.67**	14.58	6.25	10.42	0	8.33	6.25	12.5
BOP	17.86	33.33	1.19	**38.10**	1.19	5.95	1.19	1.19
Canterbury	**49.28**	14.75	4.68	3.60	13.31	2.52	9.71	2.16
Gisborne	**65.79**	2.63	0	18.42	2.63	5.26	0	5.26
Hawke's Bay	**64.12**	3.05	3.82	20.61	0.76	3.82	1.53	2.29
Marlborough	**35.96**	1.12	2.25	**35.96**	1.12	16.85	2.25	4.49
Manuwatu-Whanganui	**47.12**	25.00	3.85	2.88	0	11.54	0.96	8.65
Northland	27.71	**37.35**	1.20	19.28	0	9.64	1.20	3.61
Otago	**58.50**	10.00	4.50	6.50	0	11.00	2.00	7.50
Southland	**58.96**	16.42	3.73	0	2.24	2.24	13.43	2.99
Tasman & Nelson	**39.05**	5.71	4.76	12.38	0	23.81	2.86	11.43
Taranaki	19.40	**61.19**	1.49	0	0	5.97	2.99	8.96
Waikato	20.69	**61.21**	3.45	6.03	2.59	0.86	3.45	1.72
Wellington	**50.00**	17.86	0	3.57	0	14.29	1.79	12.5
West Coast	22.58	**58.06**	3.23	0	0	9.68	3.23	3.23
Total	**44.37**	20.91	3.45	10.68	3.01	7.93	4.48	5.18

SRDM: SAMPLE REPRESENTATIVENESS

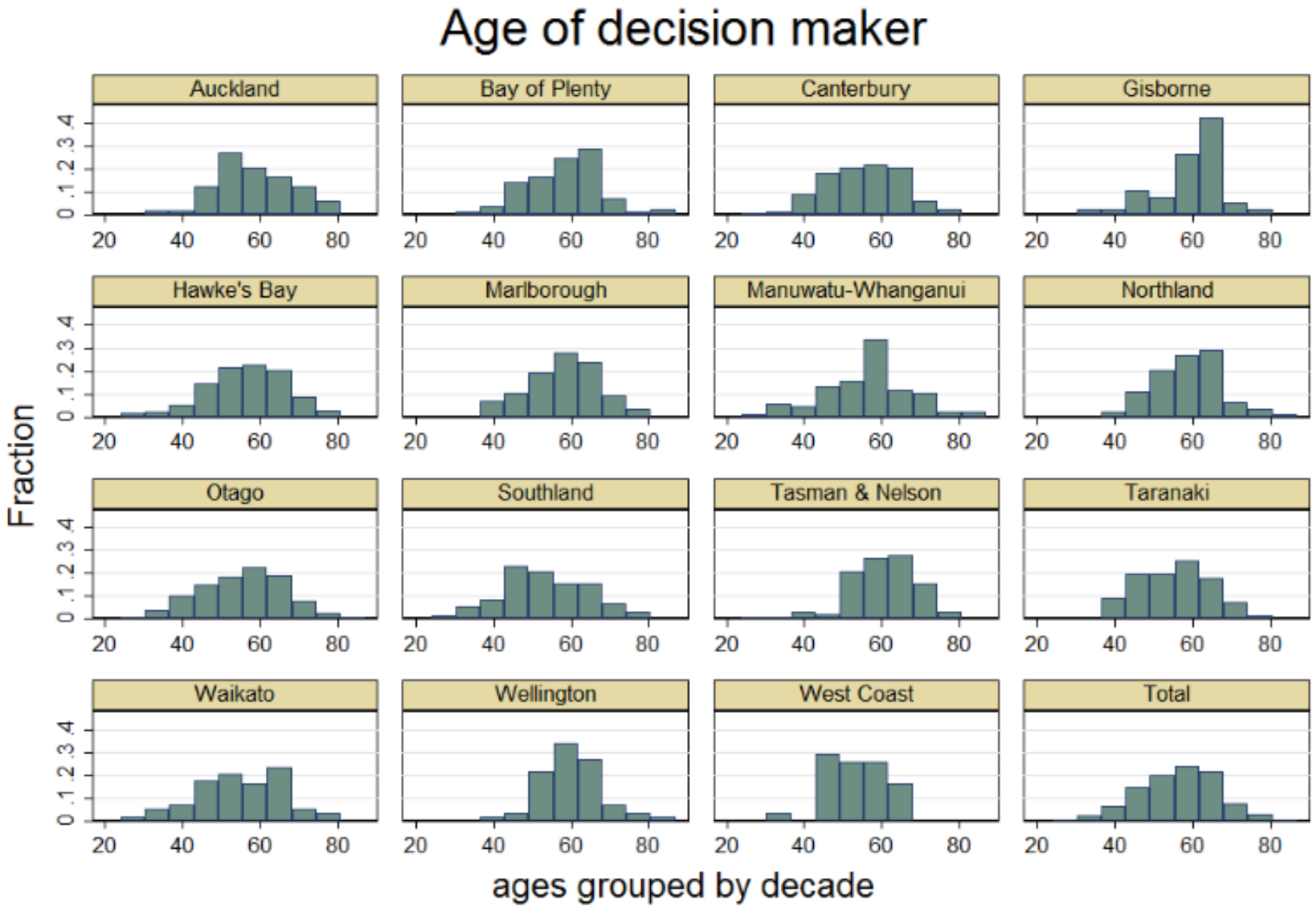
		Canterbury	Southland	Waikato
AgriBase (2008)	Sheep and/or beef	57.4%	64.9%	38.19%
	Dairy & Dairy Support	16.8%	23.3%	50.10%
	Deer & Other Livestock	8.8%	8.4%	3.31%
	Hort & Viticulture	4.3%	0.4%	3.36%
	Arable	8.9%	0.8%	1.97%
	Forestry	3.9%	2.3%	2.67%
Survey	Sheep and/or beef	49.3%	59.0%	20.7%
	Dairy & Dairy Support	24.5%	27.9%	64.7%
	Deer & Other Livestock	4.7%	3.7%	3.5%
	Hort & Viticulture	3.6%	0.0%	6.0%
	Arable	13.3%	2.2%	2.6%
	Forestry	2.5%	2.2%	0.9%

In SRDM 2:
79% of those who shifted into dairy shifted out of sheep and beef

Landcare Research
Manaaki Whenua

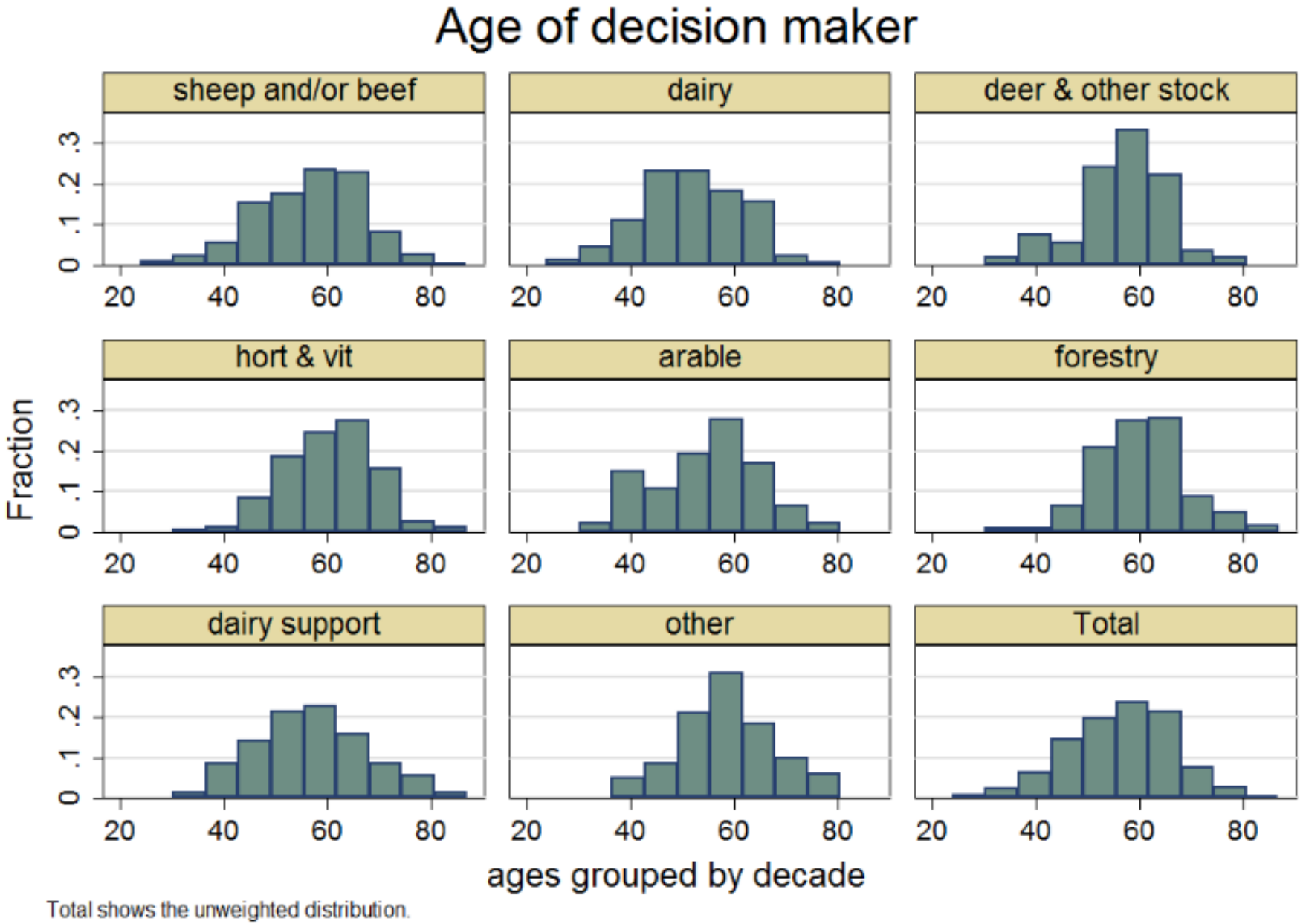
LANDCARERESEARCH.CO.NZ
SEARCH FOR “SRDM”

http://www.landcareresearch.co.nz/science/portfolios/enhancing-policy-effectiveness/srdm



Total shows the unweighted distribution.

mean=56.5

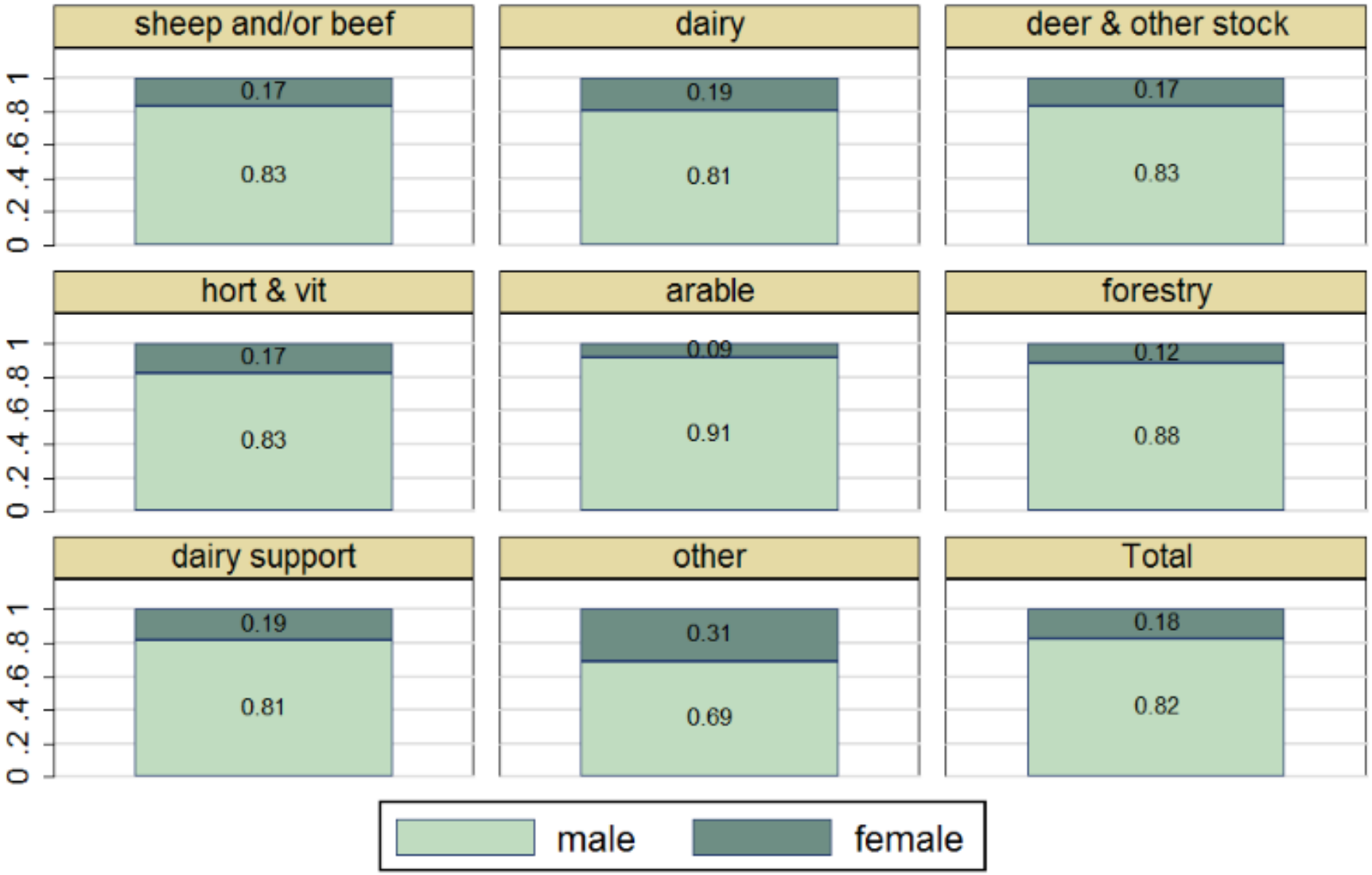

Age of decision maker
sheep and/or beef
dairy
deer & other stock
hort & vit
arable
forestry
dairy support
other
Total
Fraction
0 .1 .2 .3
20 40 60 80
ages grouped by decade
Total shows the unweighted distribution.

mean=56.5

Gender of decision maker

Total shows the unweighted distribution.

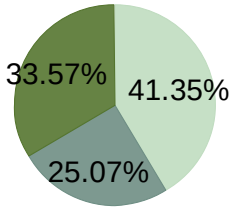
Gender of decision maker



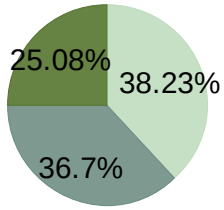
Total shows the unweighted distribution.

SRDM: EDUCATION

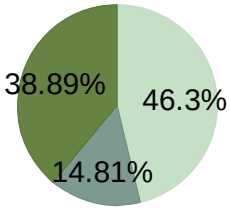
sheep and/or beef



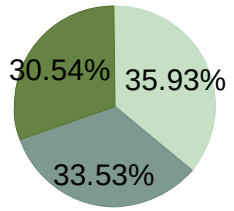
dairy



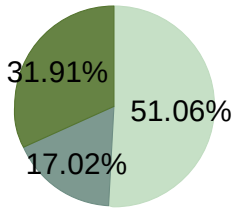
deer & other stock



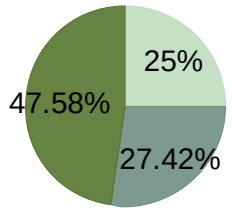
hort & vit



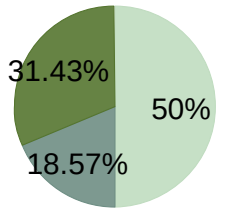
arable



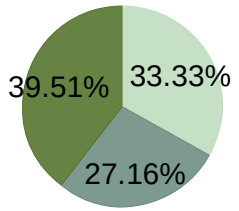
forestry



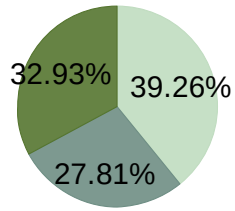
dairy support



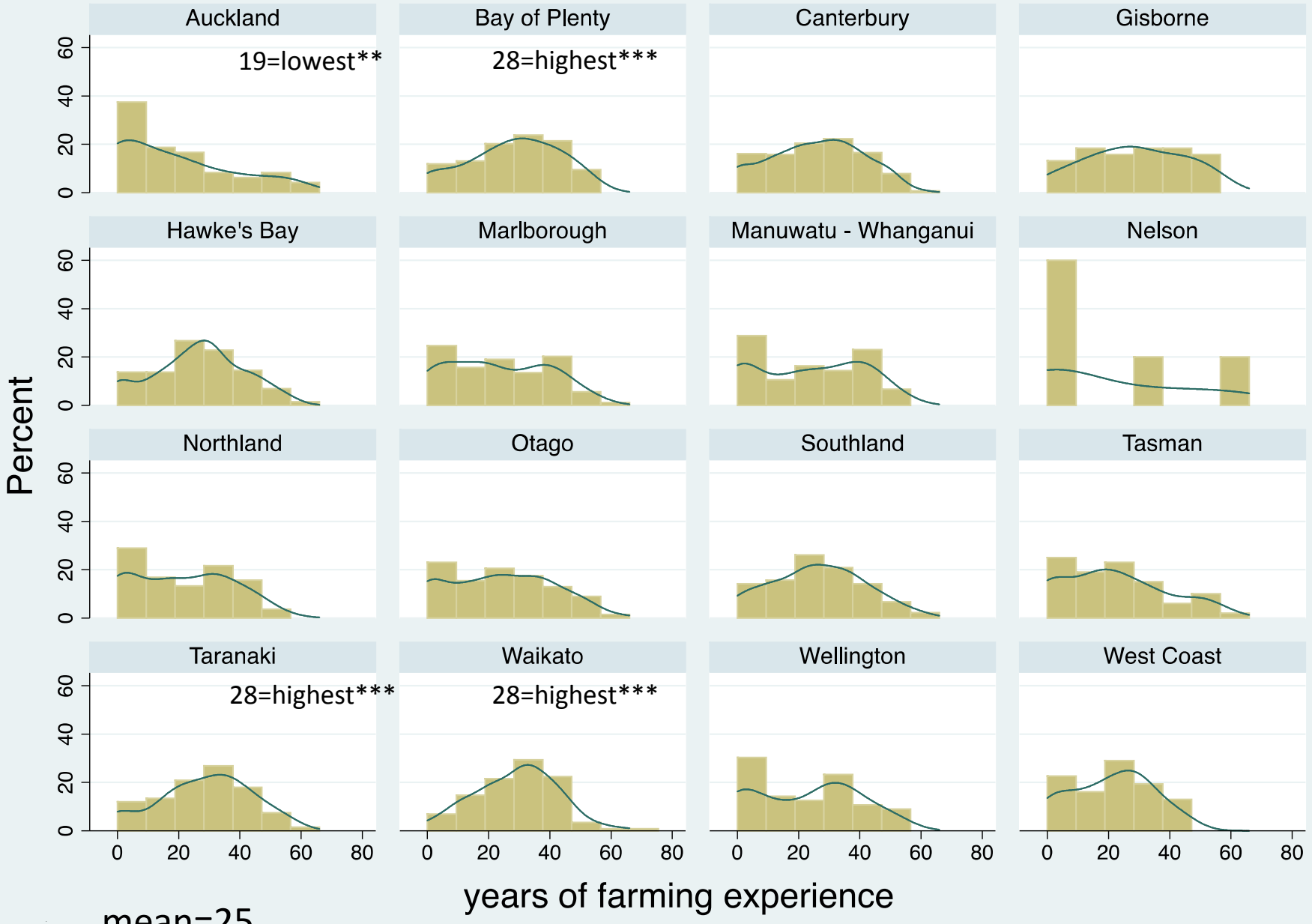
other



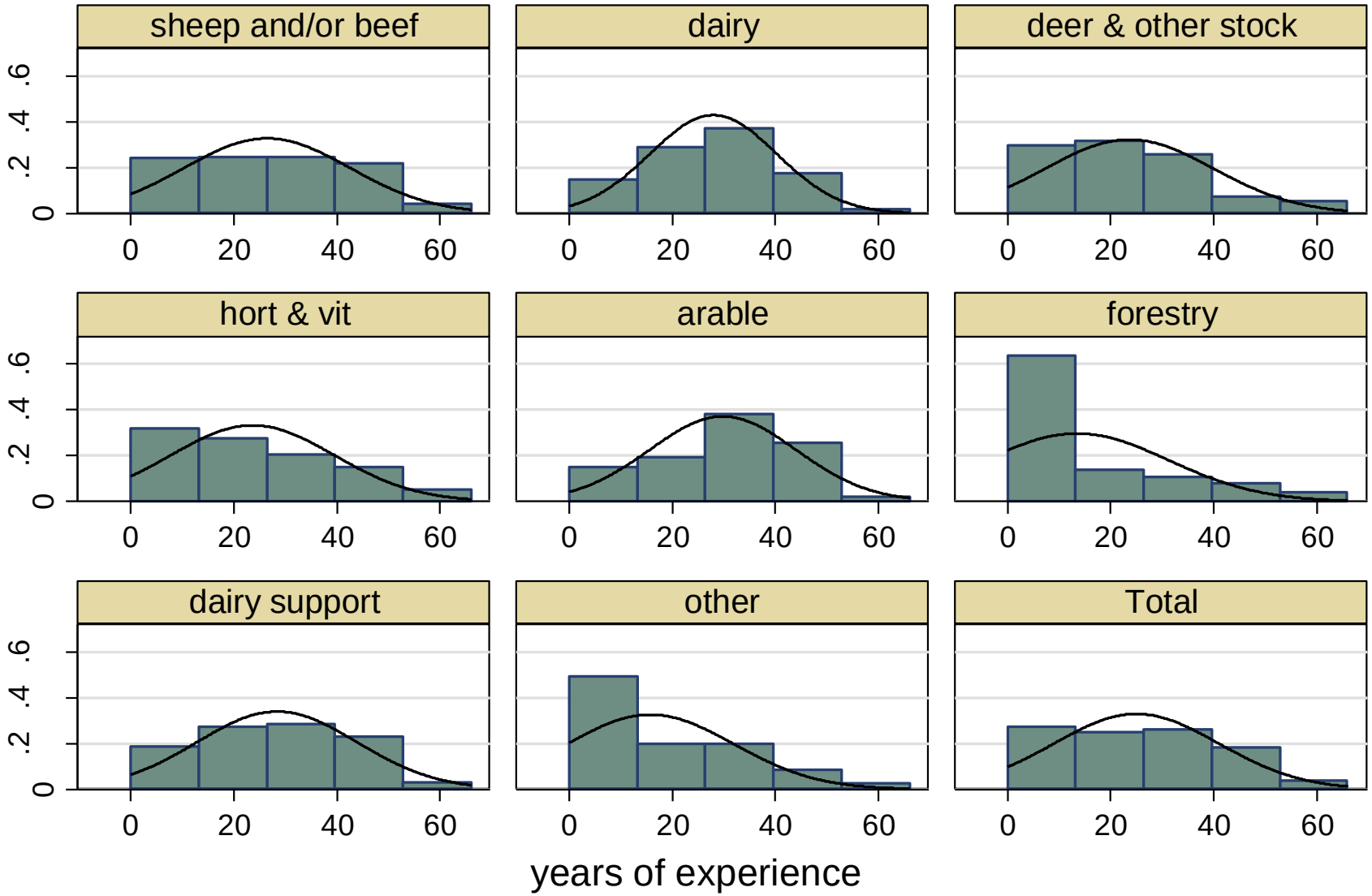
Total



Graphs by primary land use


Auckland
19=lowest**
Bay of Plenty
28=highest***
Canterbury
Gisborne
Hawke's Bay
Marlborough
Manuwatu - Whanganui
Nelson
Northland
Otago
Southland
Tasman
Taranaki
28=highest***
Waikato
28=highest***
Wellington
West Coast
Percent
0
20
40
60
80
years of farming experience
mean=25

Experience of decision maker



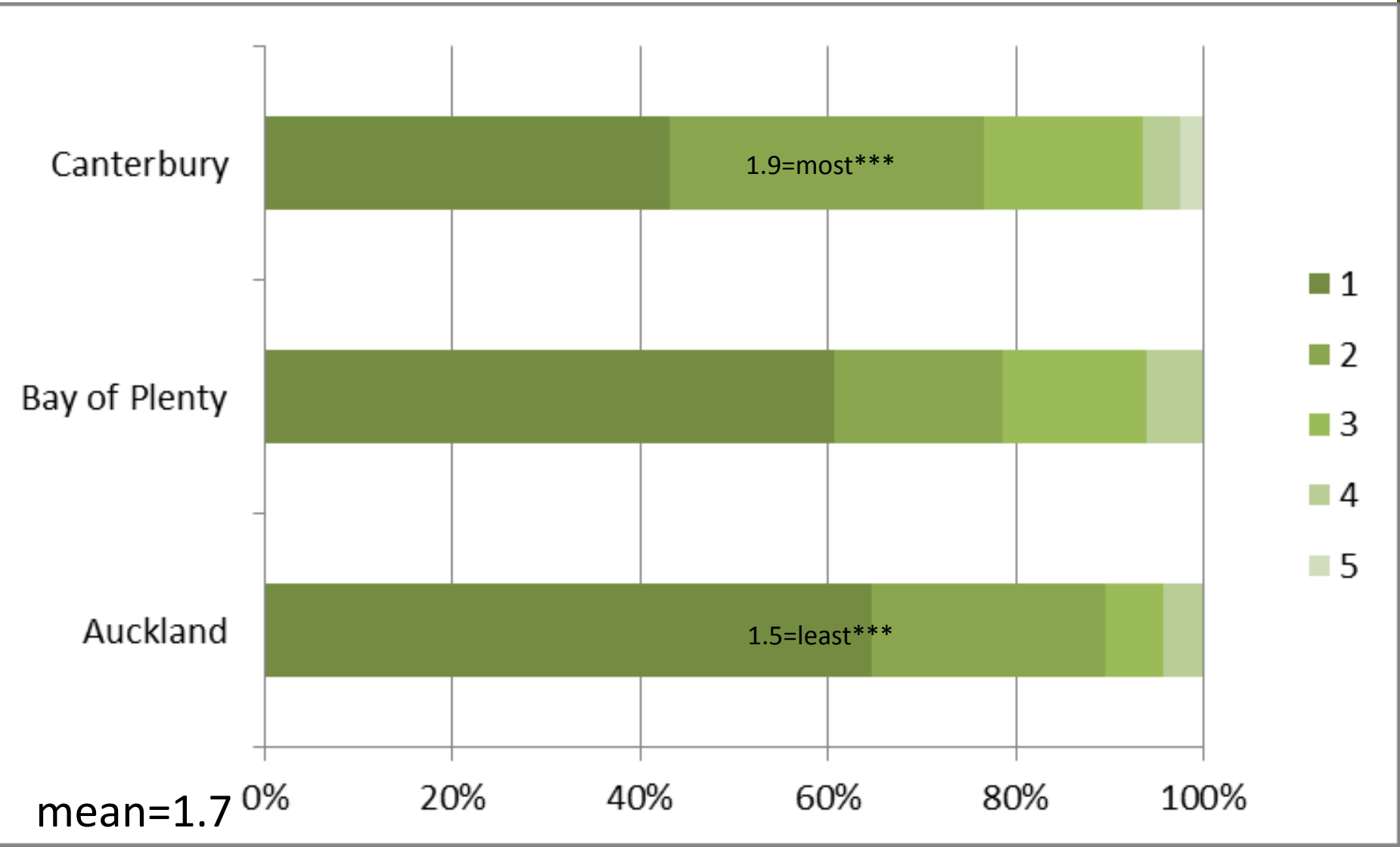
Total shows the unweighted distribution.

mean=25

SRDM: EFFECTIVE LAND SIZE

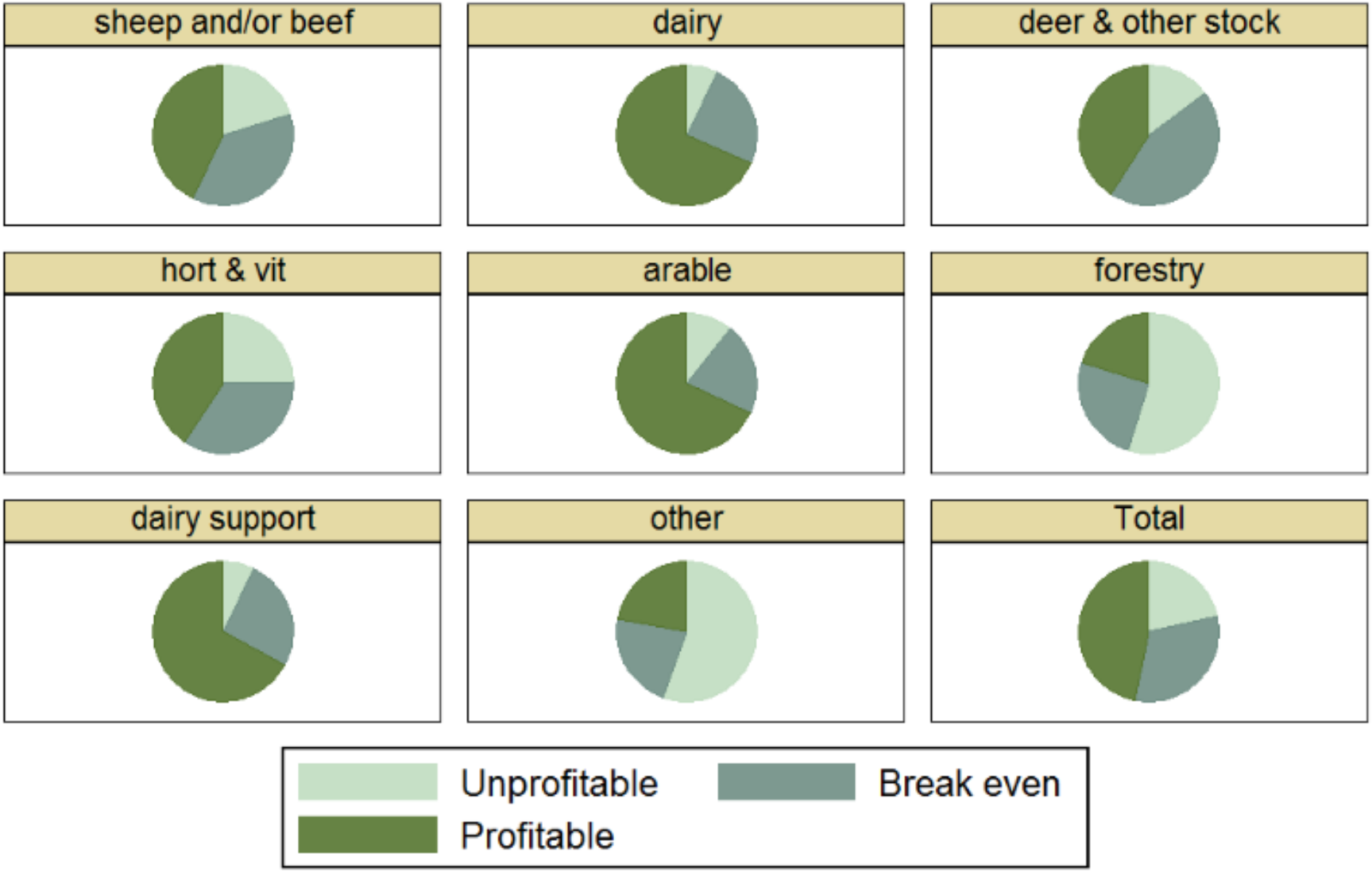
Primary land use	N	mean	sd	min	median	max
sheep and/or beef	694	731.3	2,107.0	2	231	28,000
dairy	327	291.9	351.5	32	200	4,000
deer & other stock	54	146.9	395.2	2	40	2,831
hort & vit	167	38.8	106.4	2	10	882
arable	47	305.6	272.6	5	260	1,600
forestry	124	843.8	4,564.0	2	44.5	34,000
dairy support	70	307.4	423.2	7	173.5	2,500
other	81	35.6	60.6	2	10	267
Total	1,564	486.4	1,932.0	2	125.5	34,000

SRDM: NUMBER OF ENTERPRISES



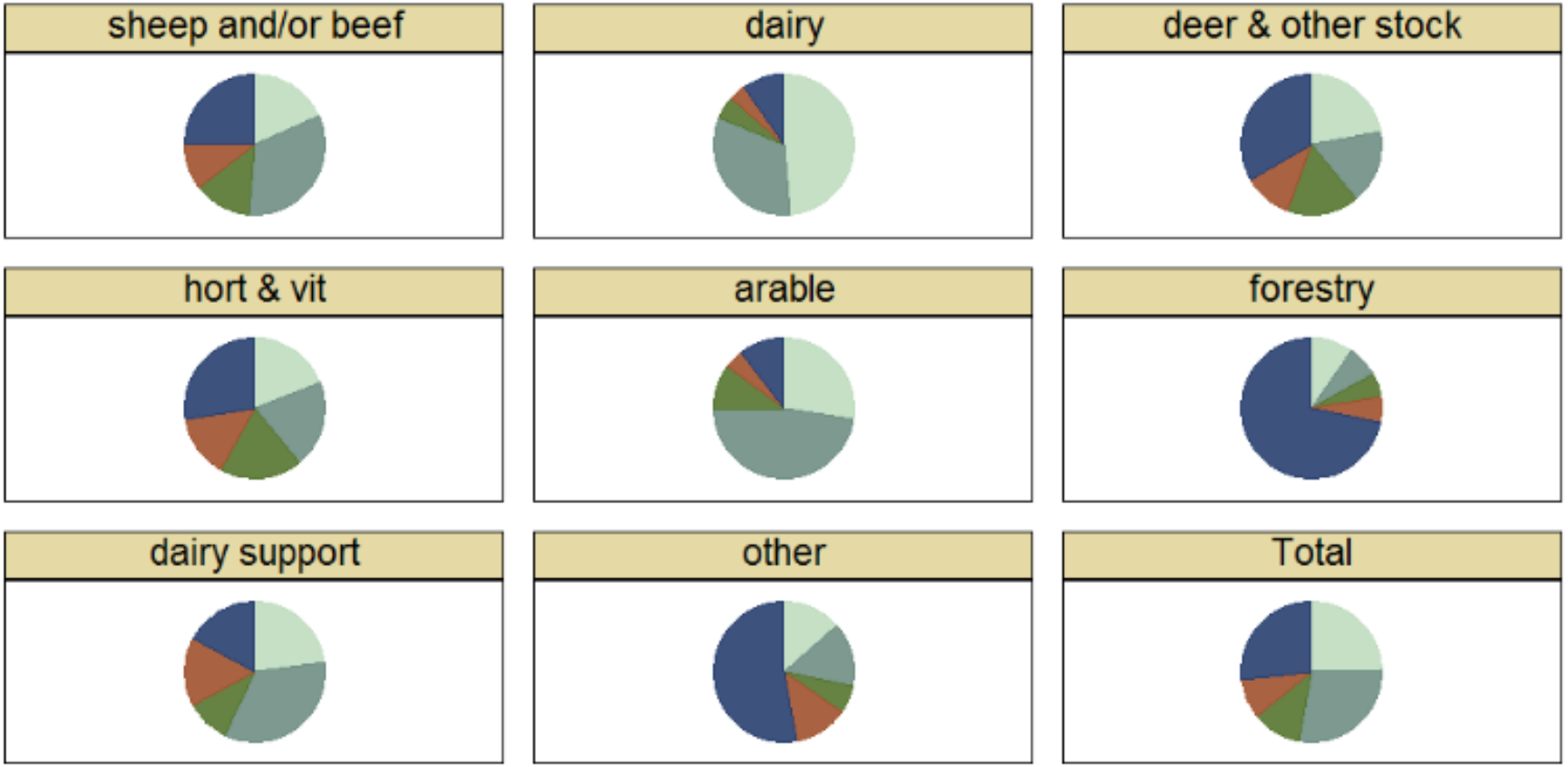
mean=1.7

Generally how profitable is this operation?



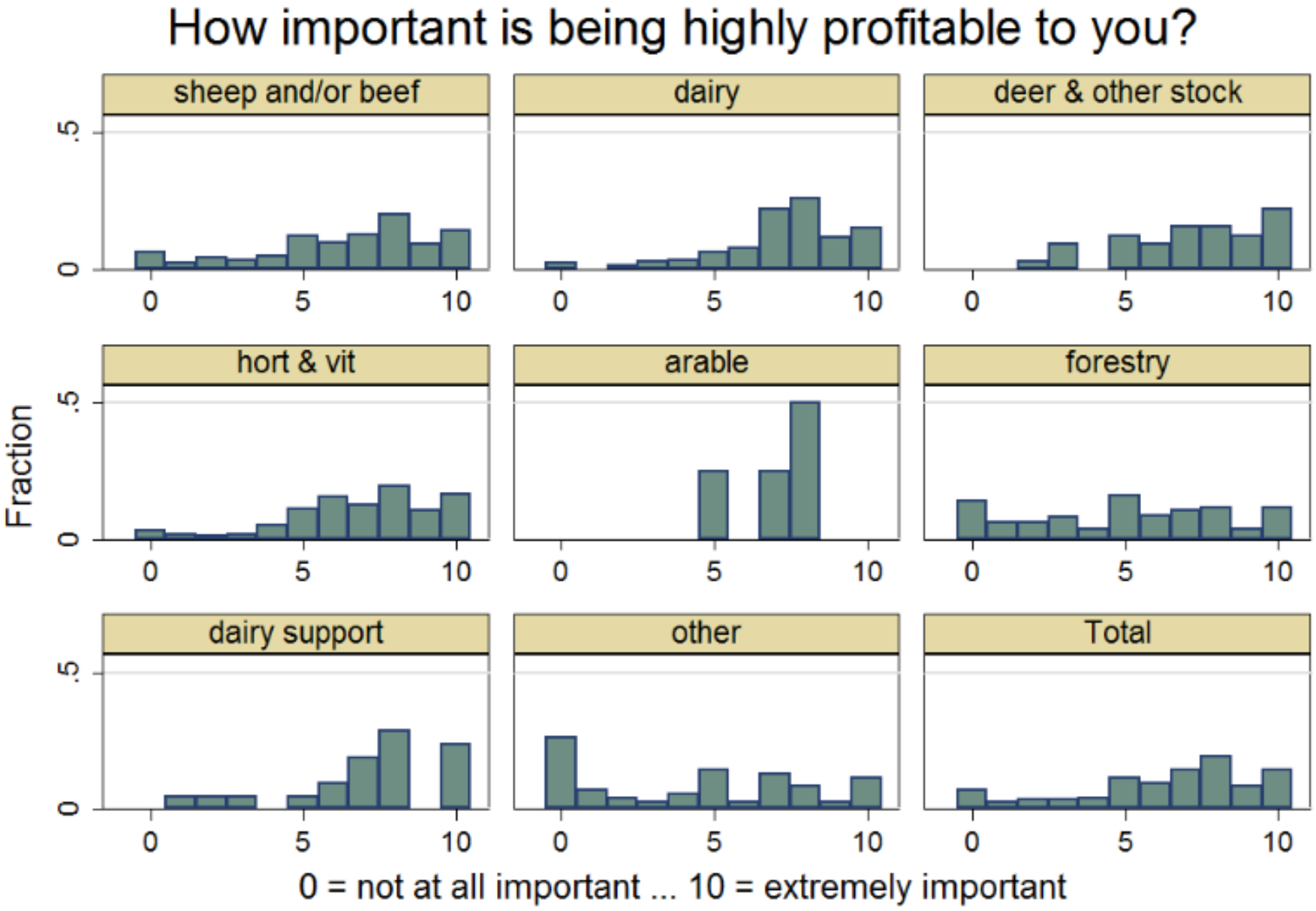
Total shows the unweighted distribution.

What share of income comes from other sources?



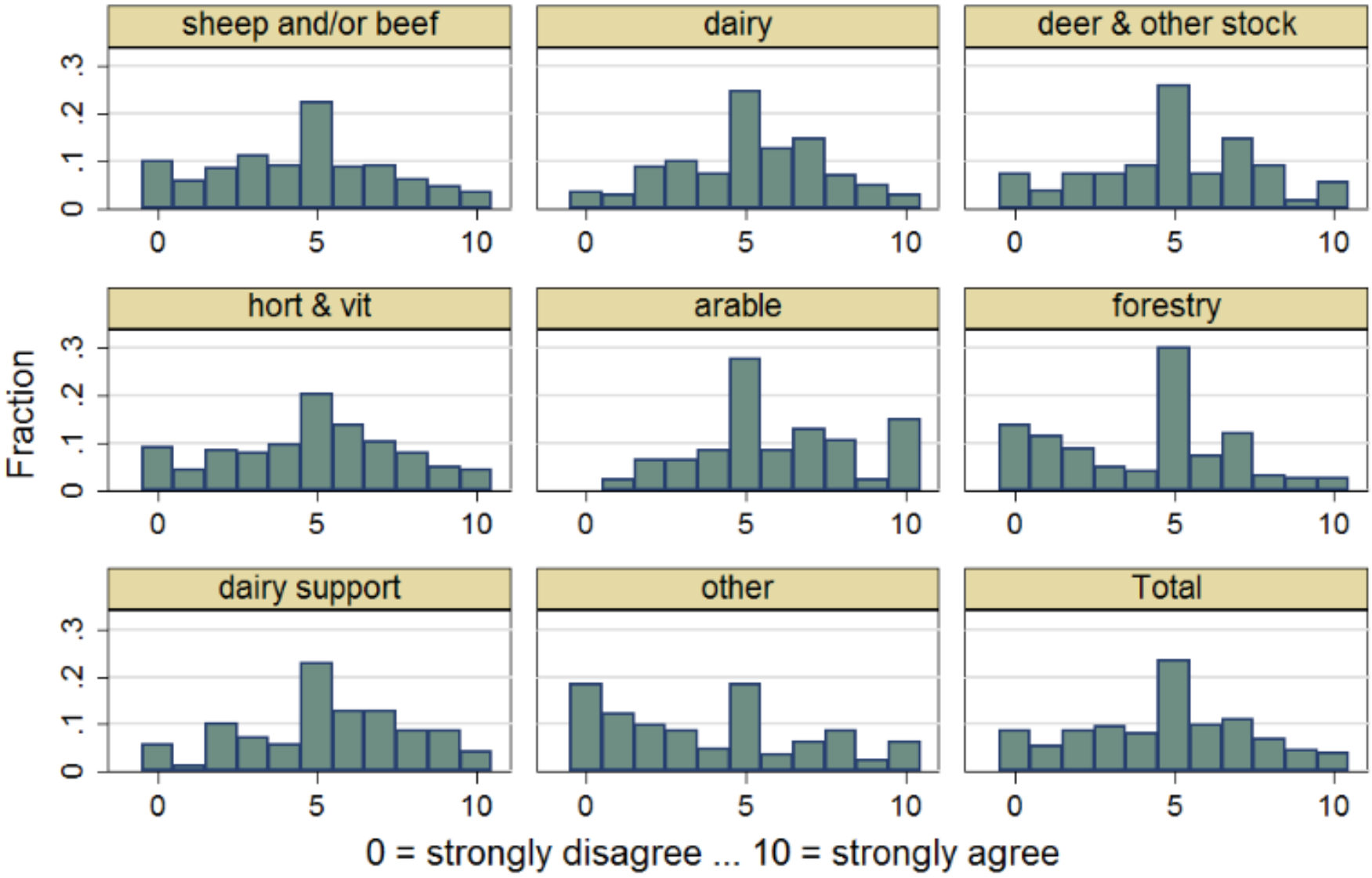
Total shows the unweighted distribution.

new type of question



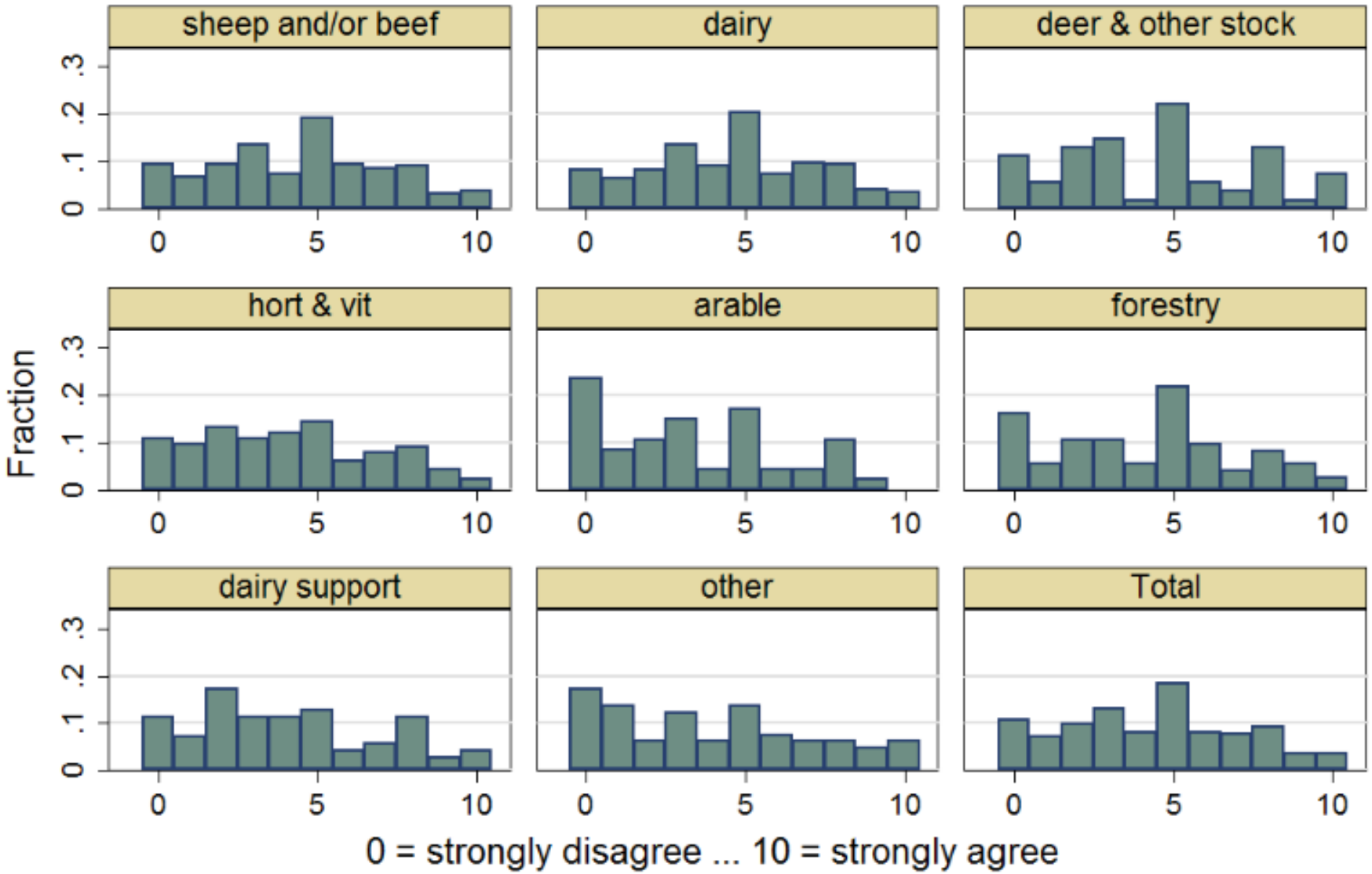
mean=6.4

I am always one of the first to try something new



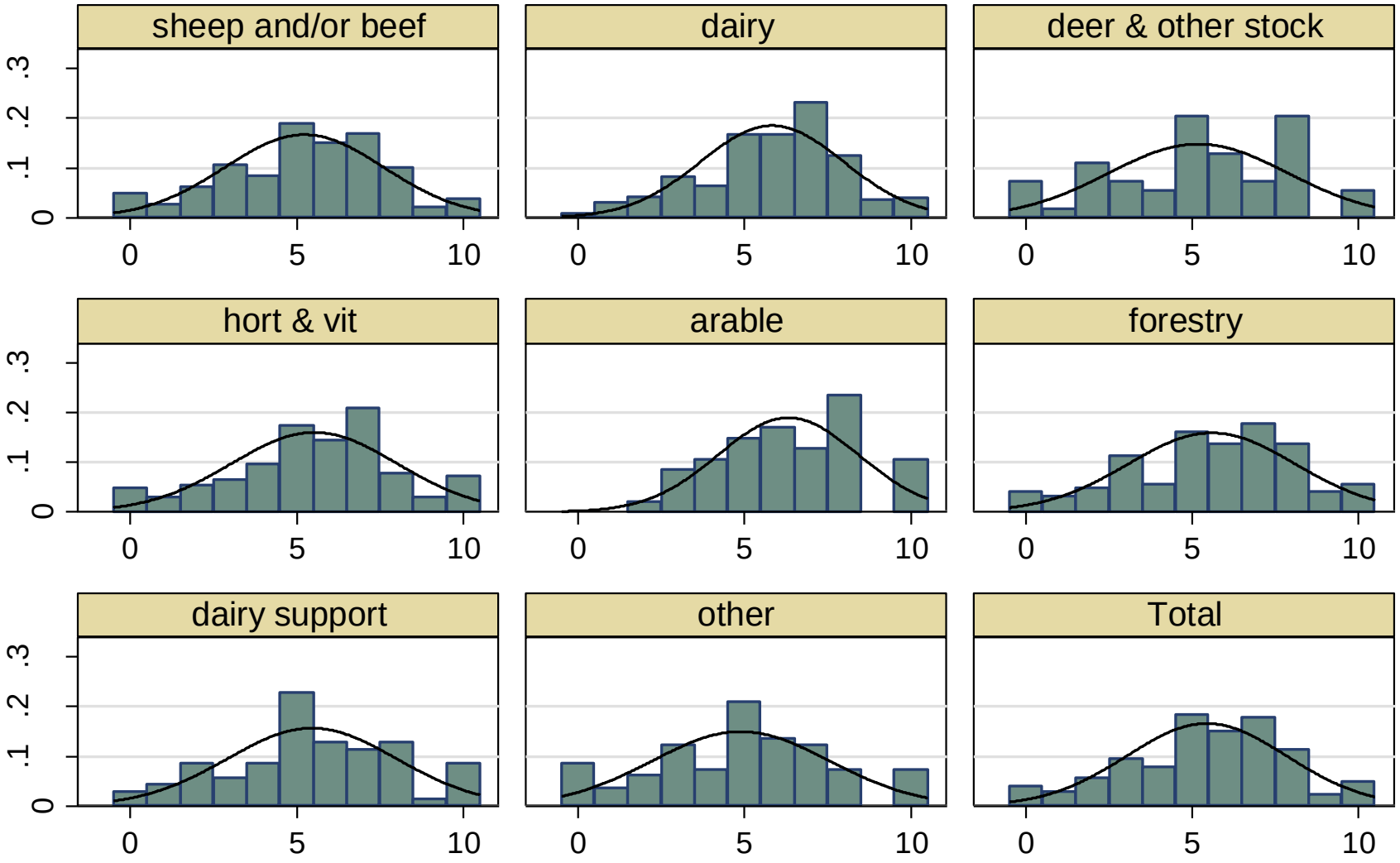
Total shows the unweighted distribution.

I prefer to leave experimenting with new ideas to others



Total shows the unweighted distribution.

Are you generally prepared to take risks?



0 = don't like to take risks ... 10 = fully prepared to take risks

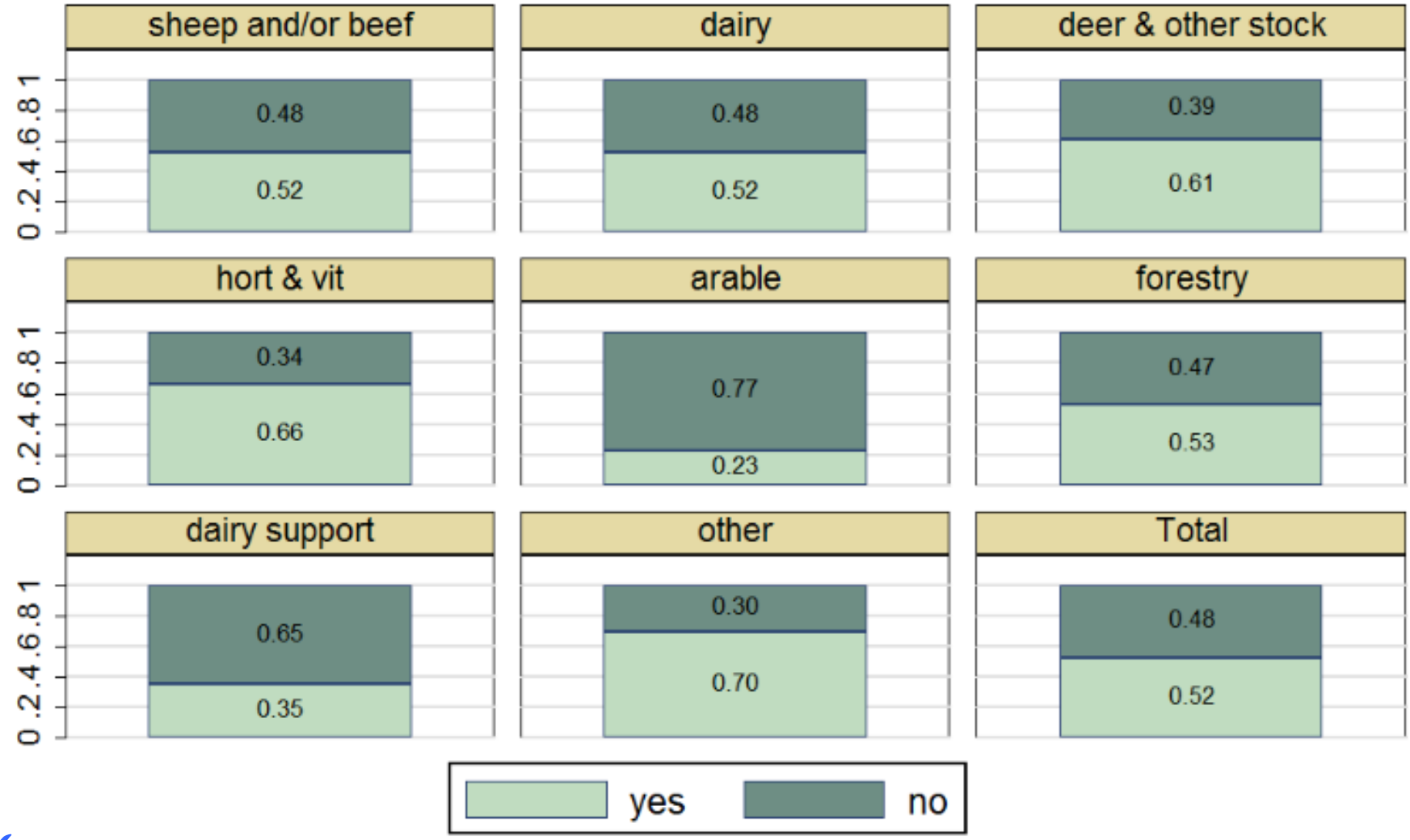
Total shows the unweighted distribution.

PROFITABILITY IS IMPORTANT TO PEOPLE.
MOST PEOPLE ARE RELUCTANT TO TAKE RISKS.
HOW DO THEY MANAGE THEIR LAND?

* Reducing stocking rates
* Reducing N-based fertiliser
* Wintering off stock
* Applying DCDs
* Having a nutrient management plan
* Adding or upgrading a water irrigation system
* Constructing a feed pad
* Upgrading the effluent system
* Fencing streams
* Constructing wetlands and/or sedimentation traps
* Planting native bush or trees
* Planting riparian buffers
* Changing primary crops or changing crop rotation
* Practices to reduce pugging
* Practices to reduce soil erosion
* Improving N efficiency through precision placement or timing
* Reducing P-based fertiliser
* Improving P efficiency through precision
* Avoiding waterways when applying fertiliser
* Adopting biological fertilisers
* Reducing tillage and/or controlling trafficking
* Use frost fans, freeze cloth, and other frost protection

Reducing N-based fertiliser

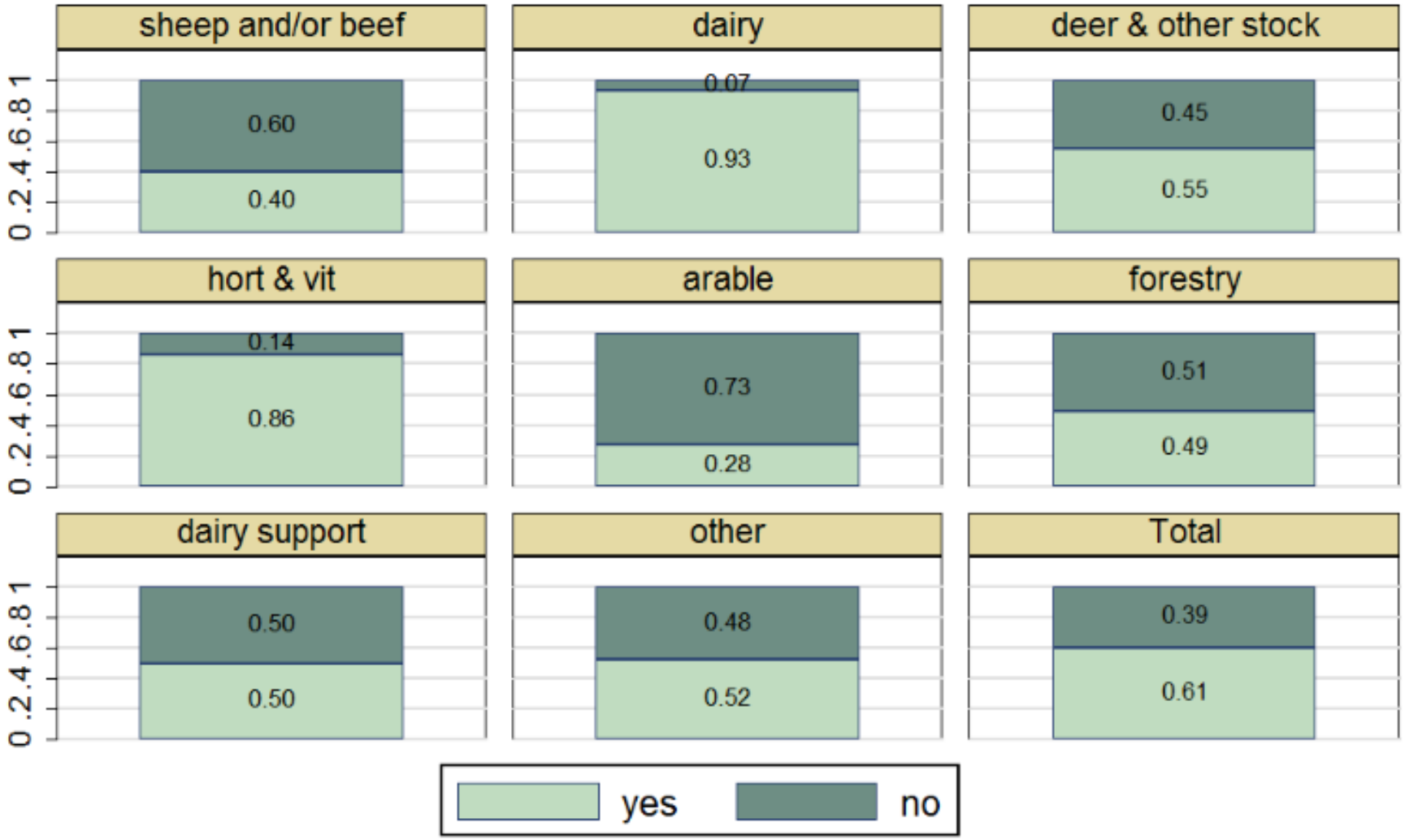
Have you already adopted this management practice?



✓Respondents chose yes, no, or N/A (omitted). Total shows the unweighted distribution.

Having a nutrient management plan

Have you already adopted this management practice?



Respondents chose yes, no, or N/A (omitted). Total shows the unweighted distribution.

Having a nutrient management plan

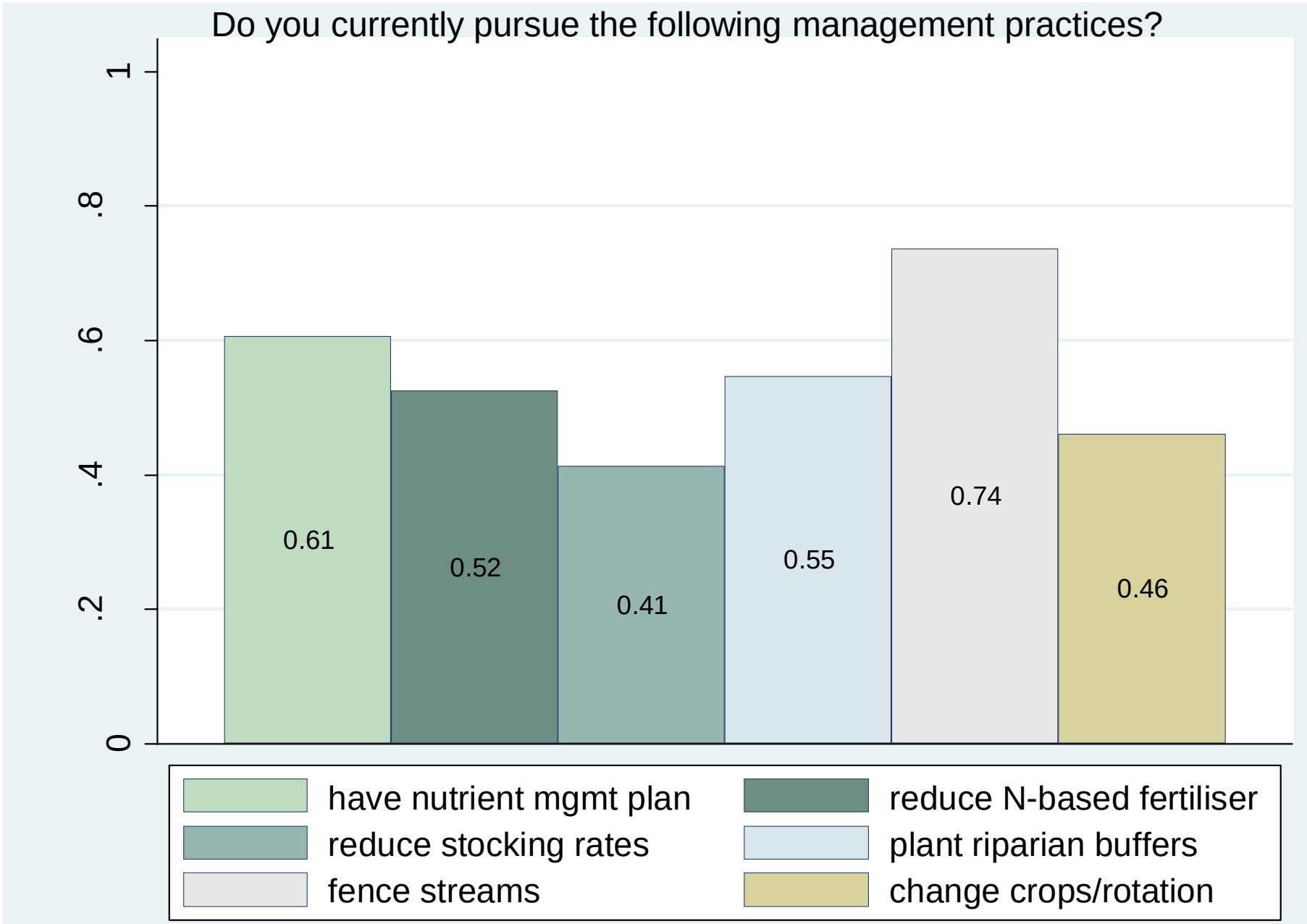
Have you already adopted this management practice?

Respondents chose yes, no, or N/A (omitted). Total shows the unweighted distribution.

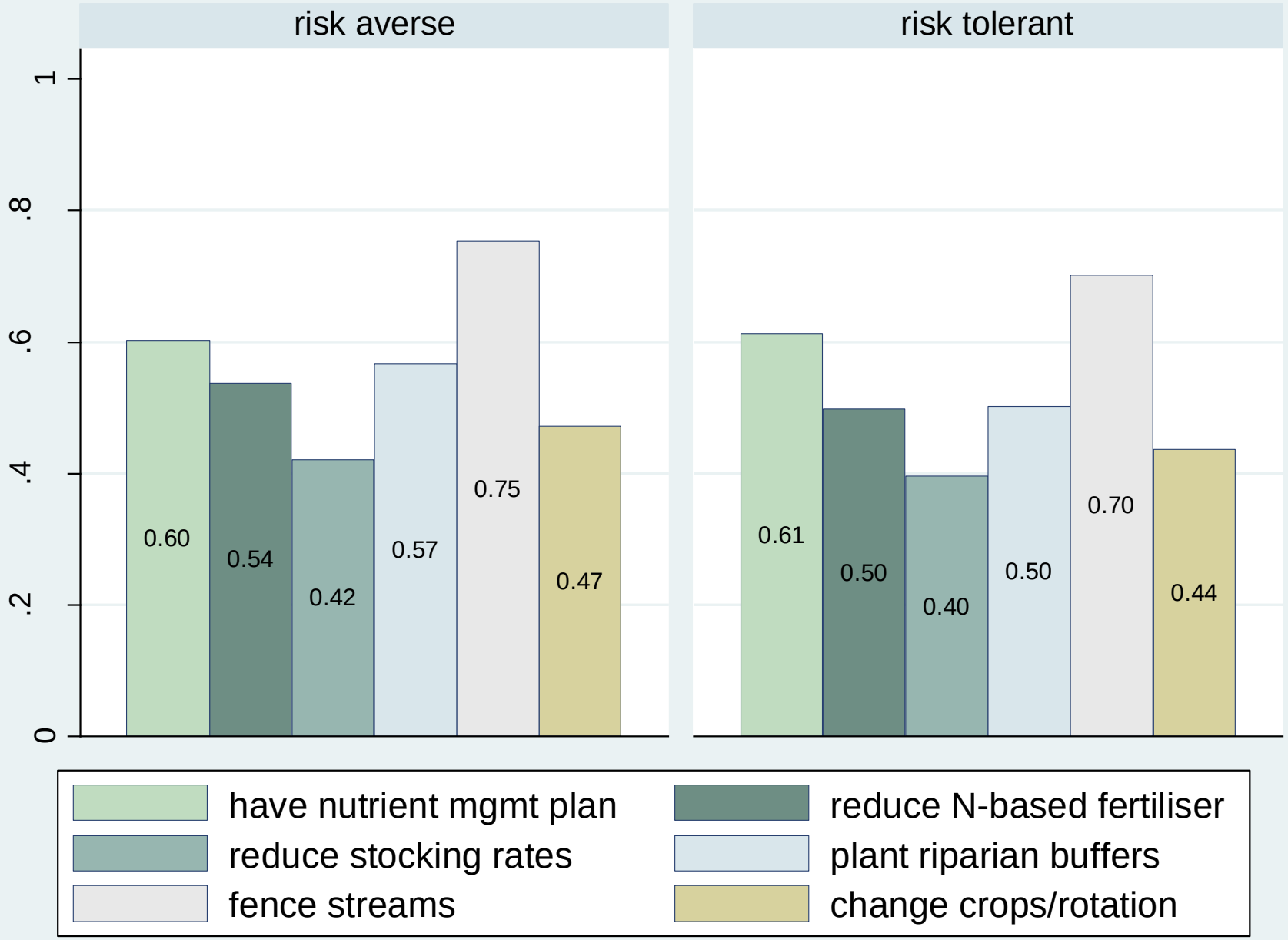
Fencing streams

Have you already adopted this management practice?

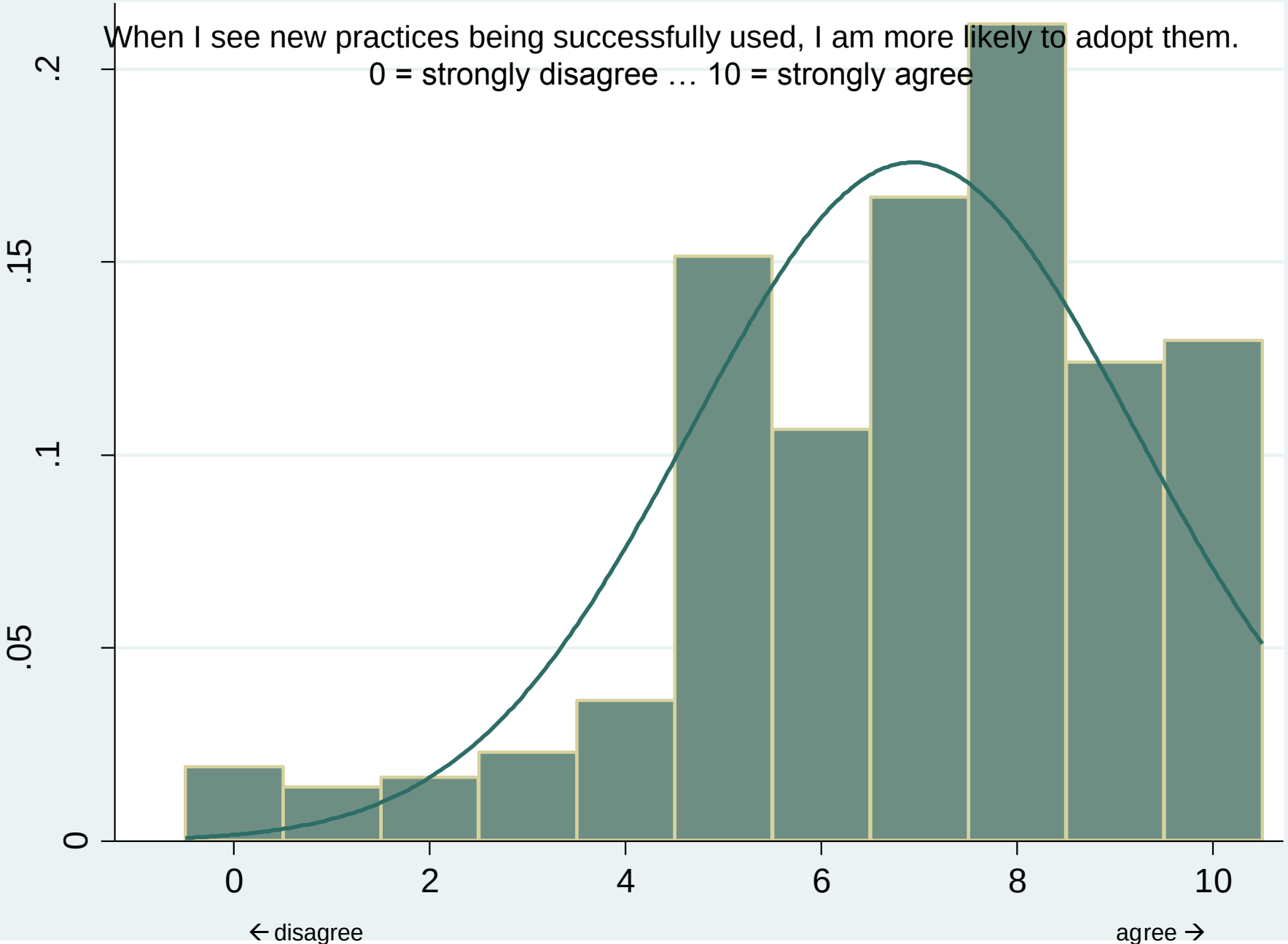
Respondents chose yes, no, or N/A (omitted). Total shows the unweighted distribution.


Do you currently pursue the following management practices?
0
.2
.4
.6
.8
1
0.61
0.52
0.41
0.55
0.74
0.46
have nutrient mgmt plan
reduce N-based fertiliser
reduce stocking rates
plant riparian buffers
fence streams
change crops/rotation

RISK TOLERANCE DOES NOT EXPLAIN ADOPTION.



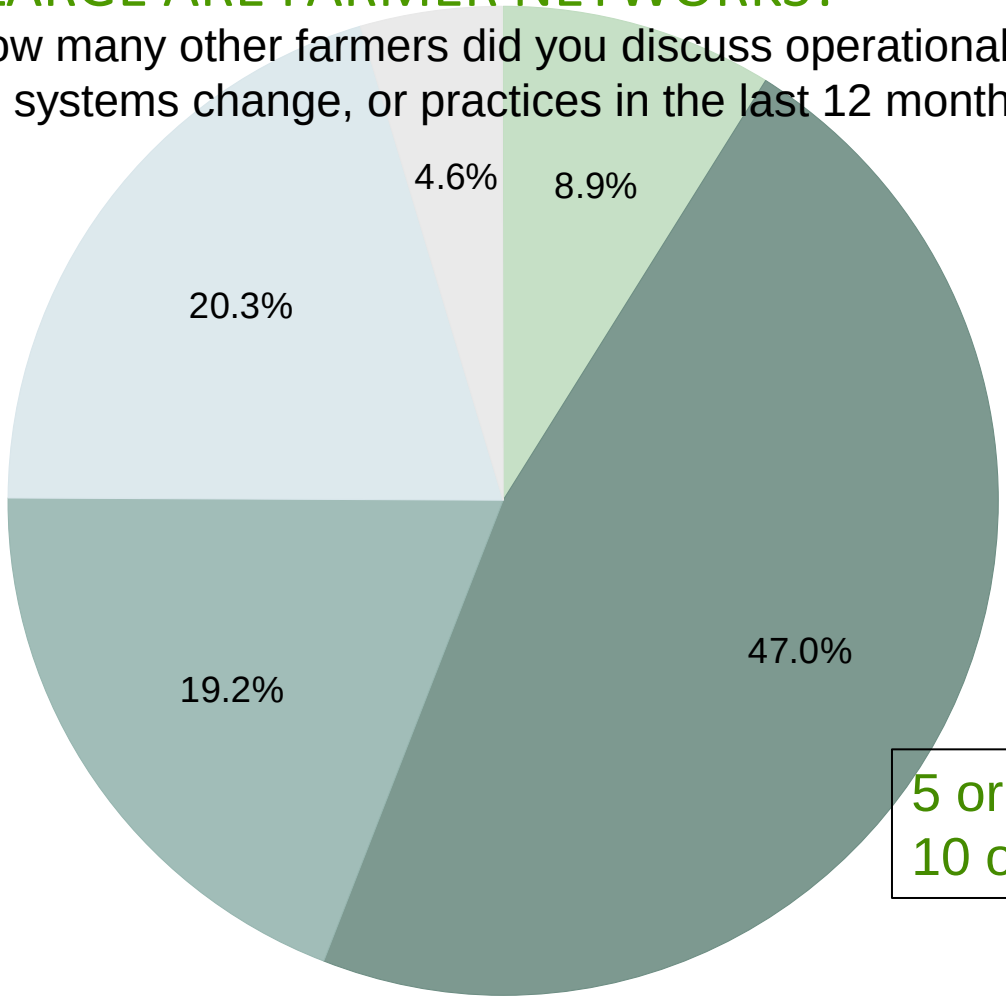
MOST PEOPLE ARE MORE LIKELY TO ADOPT NEW PRACTICES AFTER SEEING THEM DEMONSTRATED.



DEMONSTRATION MATTERS.

SO, HOW LARGE ARE FARMER NETWORKS?

With how many other farmers did you discuss operational practices, systems change, or practices in the last 12 months?



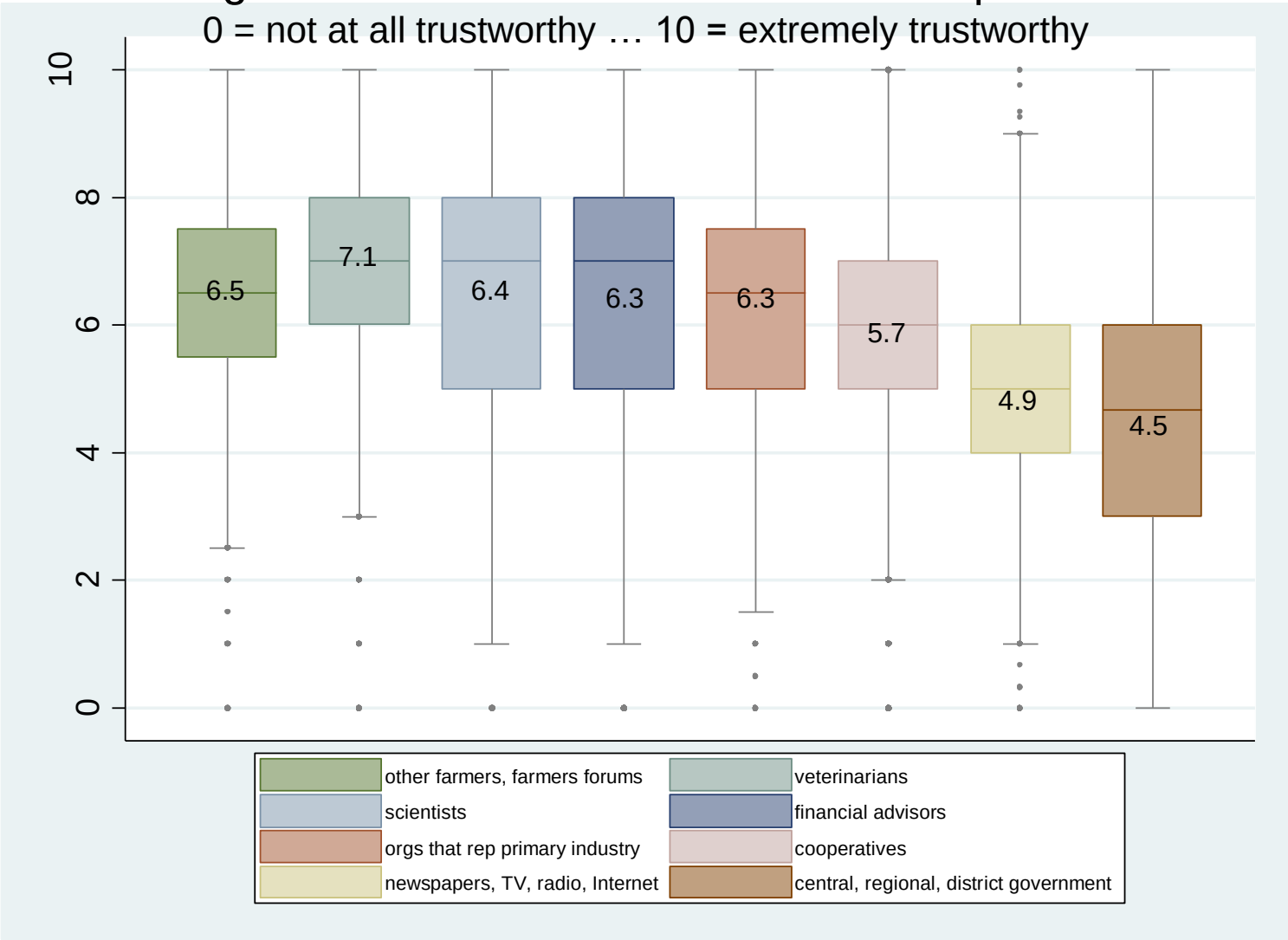
5 or fewer: 56%
10 or fewer: 75%

PEOPLE LIKE TO SEE DEMONSTRATION BEFORE ADOPTION, BUT FARMER NETWORKS ARE SMALL. WHO ELSE IS TRUSTED?

	Bay of Plenty	Marlborough	Wellington	Overall
Newspaper	4.74 (14)	5.09 (14)	5.02 (15)	**5.05 (14)**
Television	4.06 (18)	4.01 (18)	4.14 (18)	**4.14 (18)**
National radio	4.82 (13)	5.75 (11)	5.48 (12)	**5.25 (13)**
Internet	5.35 (12)	5.54 (12)	5.52 (11)	**5.36 (12)**
Fed Farmers etc.	6.57 (5)	6.36 (6)	6.21 (7)	**6.30 (6)**
Industry	6.65 (3)	6.55 (4)	6.14 (9)	**6.34 (5)**
Cooperatives	6.65 (3)	5.29 (13)	5.36 (13)	**5.73 (11)**
Central gov't	4.70 (16)	4.63 (17)	4.75 (16)	**4.60 (15)**
Regional councils	4.71 (15)	4.76 (16)	5.14 (14)	**4.54 (16)**
District councils	4.43 (17)	4.87 (15)	4.23 (17)	**4.48 (17)**
Accountants	6.21 (9)	5.98 (9)	5.79 (10)	**6.34 (4)**
Farm consultants	6.30 (8)	6.18 (8)	6.30 (6)	**6.21 (9)**
Farmers forums	6.48 (6)	6.34 (7)	6.43 (4)	**6.29 (7)**
Other farmers	6.79 (2)	6.64 (3)	6.84 (2)	**6.71 (2)**
Scientists	6.44 (7)	6.75 (2)	6.61 (3)	**6.37 (3)**
Vets	7.12 (1)	7.04 (1)	6.95 (1)	**7.13 (1)**
Rural retailers	5.77 (10)	5.80 (10)	6.18 (8)	**5.89 (10)**
Universities	5.70 (11)	6.39 (5)	6.38 (5)	**6.22 (8)**

PEOPLE LIKE TO SEE DEMONSTRATION BEFORE ADOPTION, BUT FARMER NETWORKS ARE SMALL. WHO ELSE IS TRUSTED?

How trustworthy do you consider the following sources of information for making decisions related to environmental performance?



Survey of Rural Decision Makers: Challenges & Future Opportunities

- Cross-sectional survey:
  How do we know if policy is effective?
- Sampling:
  Can we do better?
- Survey fatigue:
  Can we work together to elicit better information?

brownp@landcareresearch.co.nz