



ADOPT
PREDICT. INFORM. ENGAGE.

The adoption and diffusion outcome prediction tool

Adoption report for:
RESAS sheep industry_DNA parentage

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For more information about ADOPT contact adopt@csiro.au



Project Details

MODEL

Standard agriculture

YOUR INNOVATION

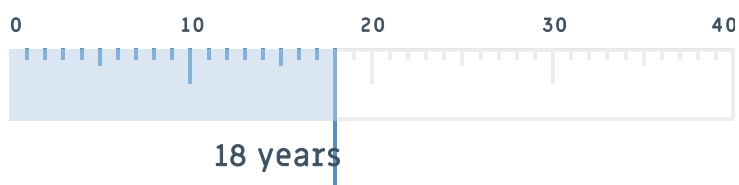
DNA parentage - ear sample and DNA of progeny

YOUR POPULATION

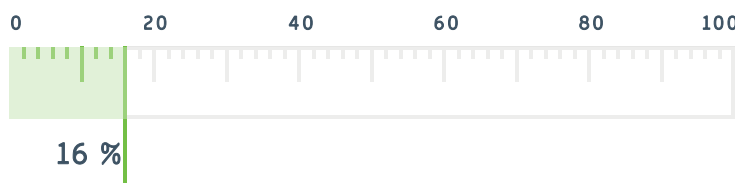
Scottish sheep farmers

Adoption Level

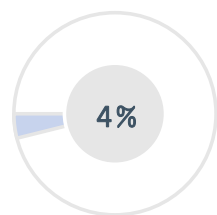
TIME TO NEAR-PEAK
ADOPTION LEVEL
(years)



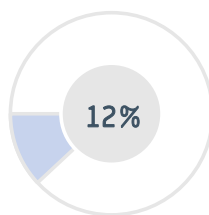
PEAK ADOPTION LEVEL
(percent %)



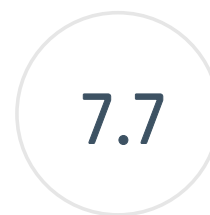
Predicted adoption levels



IN 5 YEARS FROM START



IN 10 YEARS FROM START

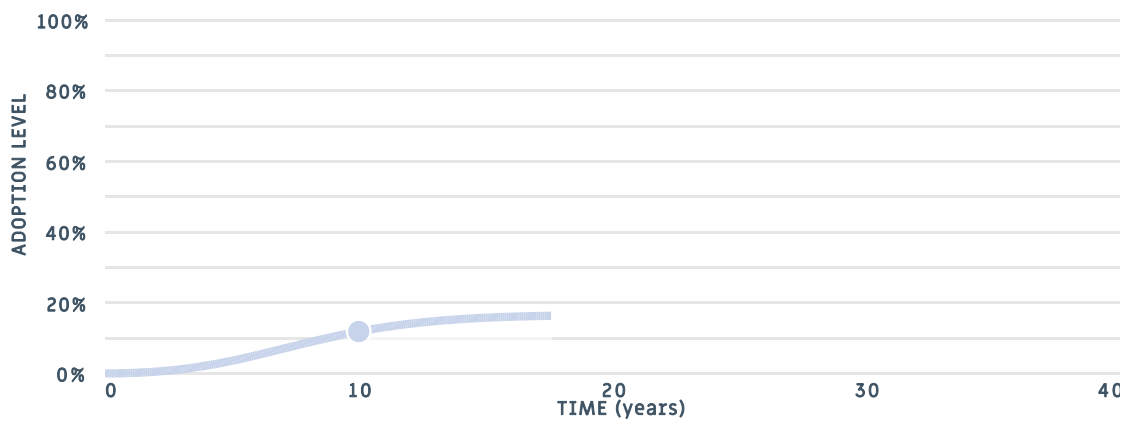


TIME TO 50% OF PEAK ADOPTION
(years)

NOTES: The predictions of Peak Adoption Level and Time to Peak Adoption Level are numeric outputs that are provided to assist with insight and understanding and like any forecasts should be used with caution. Time to Near Peak Adoption represents the time to 99% of the maximum predicted adoption level.

Adoption level S-Curve

The following chart shows how the level of adoption in the relevant population of farmers changes over time.



Yearly Adoption Levels

Year	Adoption %
1	0
2	0
3	1
4	2
5	4
6	5
7	7
8	9
9	10
10	12
11	13
12	14
13	15
14	15
15	16
16	16
17	16
18	16

(Peak Adoption)

Changing the adoption levels

Many of the factors can be changed by activities such as extension. Based on the data entered, the ADOPT model suggests that changing the following factors would have the biggest effect on adoption.

Changing the peak adoption level

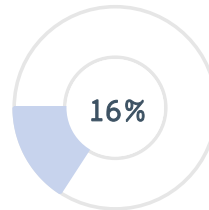
MOST SENSITIVE QUESTION

- 16 Profit benefit in years that it is used

To what extent is the use of the innovation likely to affect the profitability of the farm business in the years that it is used?

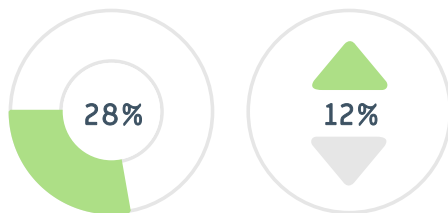
YOUR RESPONSE

Small profit advantage in years that it is used



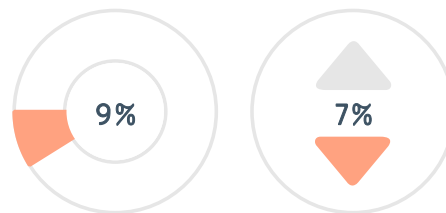
STEP UP RESPONSE

Moderate profit advantage in years that it is used



STEP DOWN RESPONSE

No profit advantage or disadvantage in years that it is used



Changing the time to peak adoption level

MOST SENSITIVE QUESTION

- 12 Relevant existing skills & knowledge

What proportion of the target population will need to develop substantial new skills and knowledge to use the innovation?

YOUR RESPONSE

A majority will need new skills and knowledge



STEP UP RESPONSE

About half will need new skills and knowledge



STEP DOWN RESPONSE

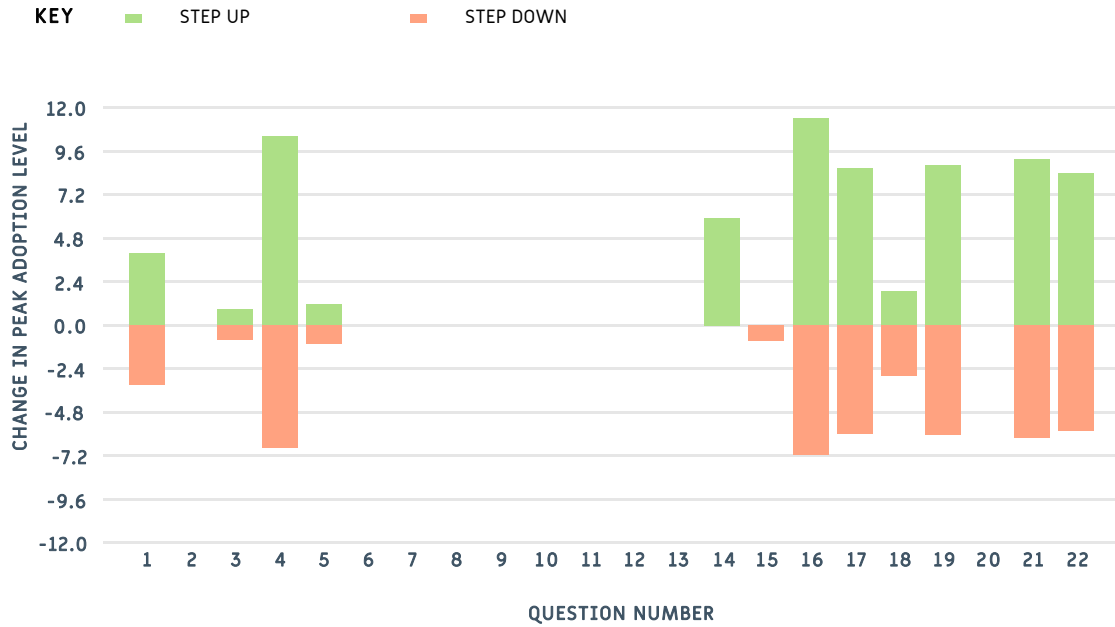
Almost all need new skills and knowledge



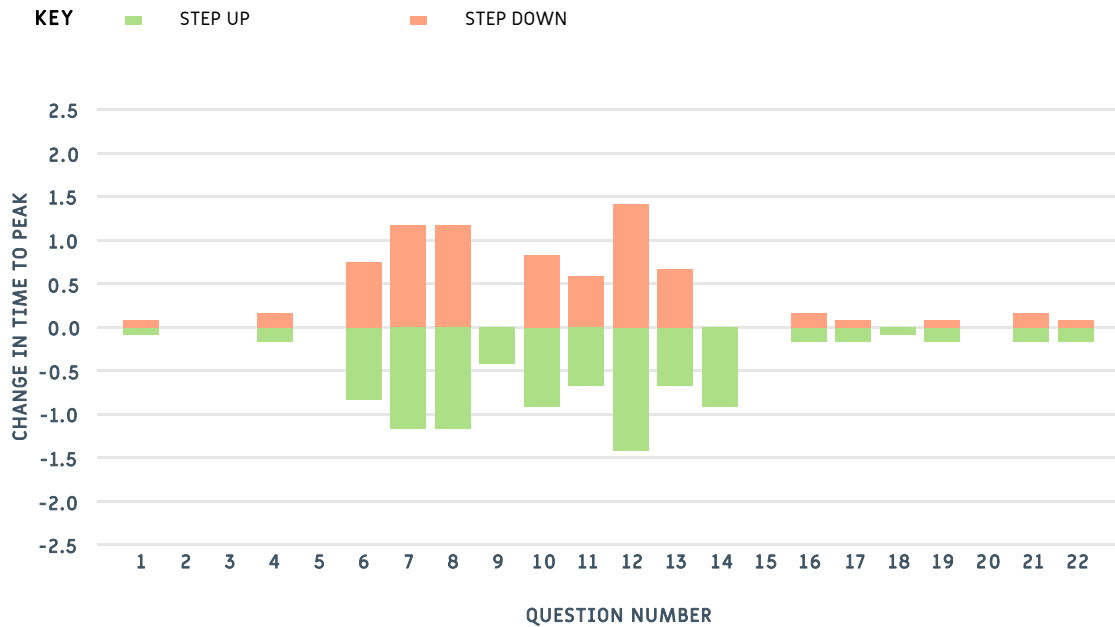
Sensitivity Analysis

The following charts show the effects on Peak Adoption Level and Time to Peak Adoption of single step changes up and down for all questions.

Peak level, sensitivity analysis

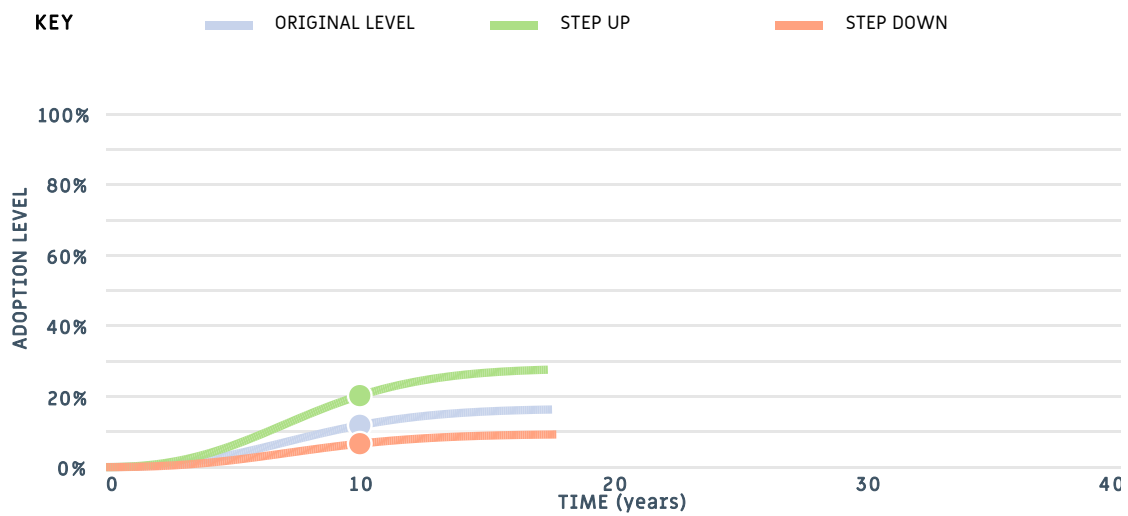


Time to peak, sensitivity analysis

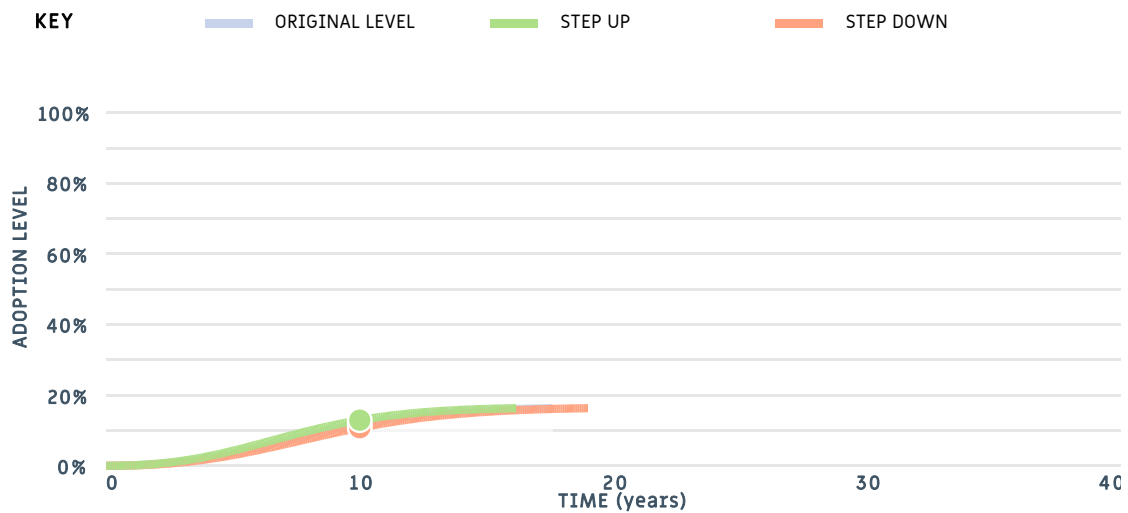


S-Curve Sensitivity

The following chart shows how the S-Curve is predicted to change when a single step change is made to the most sensitive question(s) with respect to Peak Adoption Level



The following chart shows how the S-Curve is predicted to change when a single step change is made to the most sensitive question(s) with respect to Time to Near Peak Adoption.



Responses

Question	Response	Reasoning
Relative Advantage for the Population		
1. Profit orientation	A majority have maximising profit as a strong motivation	
2. Environmental orientation	About half have protection of the environment as a strong motivation	
3. Risk orientation	A majority have risk minimisation as a strong motivation	
4. Enterprise scale	A minority of the target farms have a major enterprise that could benefit	
5. Management horizon	About half have a long-term management horizon	
6. Short term constraints	A minority currently have a severe short-term financial constraint	
Learnability Characteristics of the Innovation		
7. Trialable	Moderately trialable	
8. Innovation complexity	Difficult to evaluate effects of use due to complexity	
9. Observability	Not observable at all	
Learnability of Population		
10. Advisory support	A minority use a relevant advisor	
11. Group involvement	About half are involved with a group that discusses farming	
12. Relevant existing skills & knowledge	A majority will need new skills and knowledge	
13. Innovation awareness	About half are aware that it has been used or trialed in their district	

Relative Advantage of the Innovation

14. Relative upfront cost of the project	Very large initial investment
15. Reversibility of the innovation	Very easily reversed
16. Profit benefit in years that it is used	Small profit advantage in years that it is used
17. Future profit benefit	Moderate profit advantage in the future
18. Time until any future profit benefits are likely to be realised	3 - 5 years
19. Environmental costs & benefits	No net environmental effects
20. Time to environmental benefit	3 - 5 years
21. Risk exposure	Small reduction in risk
22. Ease and convenience	Small increase in ease and convenience

ADOPT can be cited as: Kuehne G, Llewellyn R, Pannell D, Wilkinson R, Dolling P, Ouzman J, Ewing M (2017) Predicting farmer uptake of new agricultural practices: A tool for research, extension and policy, *Agricultural Systems* 156:115-125
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