



ADOPT  
PREDICT. INFORM. ENGAGE.

# The adoption and diffusion outcome prediction tool

Adoption report for:  
3D imagin

Report Authors:  
Lise Griva

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For more information about ADOPT contact [adopt@csiro.au](mailto:adopt@csiro.au)



## Project Details

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### MODEL

Standard agriculture

### YOUR INNOVATION

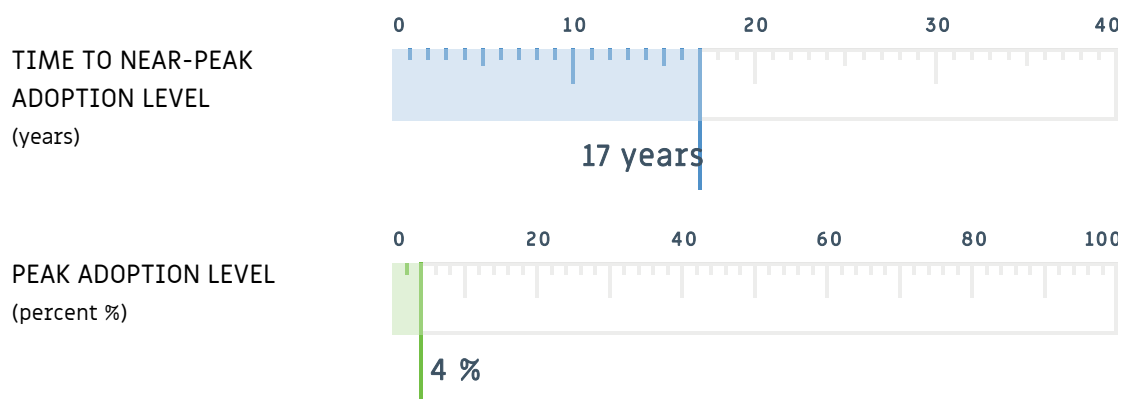
3D imagin

### YOUR POPULATION

automatic registration of body condition score

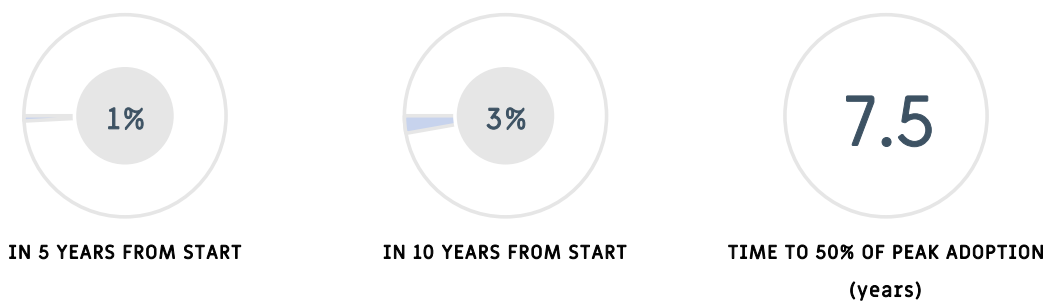
## Adoption Level

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## Predicted adoption levels

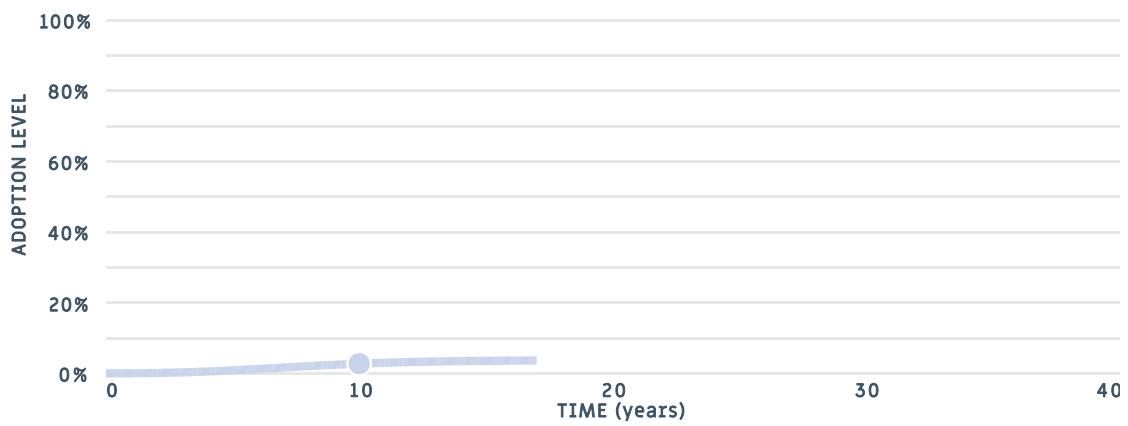
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**NOTES:** The predictions of Peak Adoption Level and Time to Peak Adoption Level are numeric outputs that are provided to assist with insight and understanding and like any forecasts should be used with caution. Time to Near Peak Adoption represents 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	0
4	1
5	1
6	1
7	2
8	2
9	2
10	3
11	3
12	3
13	3
14	3
15	4
16	4
17	4

(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

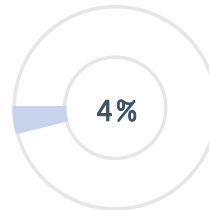
### MOST SENSITIVE QUESTION

- 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?

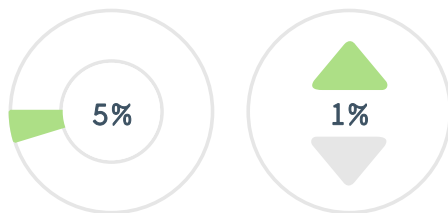
### YOUR RESPONSE

Moderate profit advantage in years that it is used



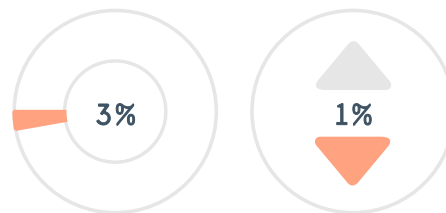
### STEP UP RESPONSE

Large profit advantage in years that it is used



### STEP DOWN RESPONSE

Small profit advantage 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

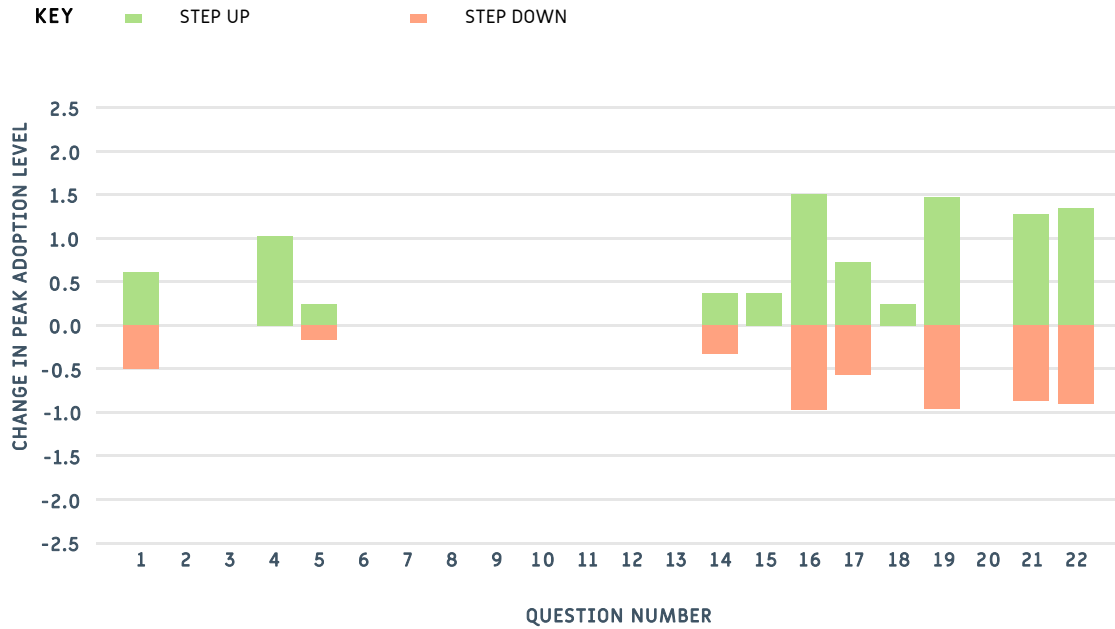
Almost all need new skills and knowledge



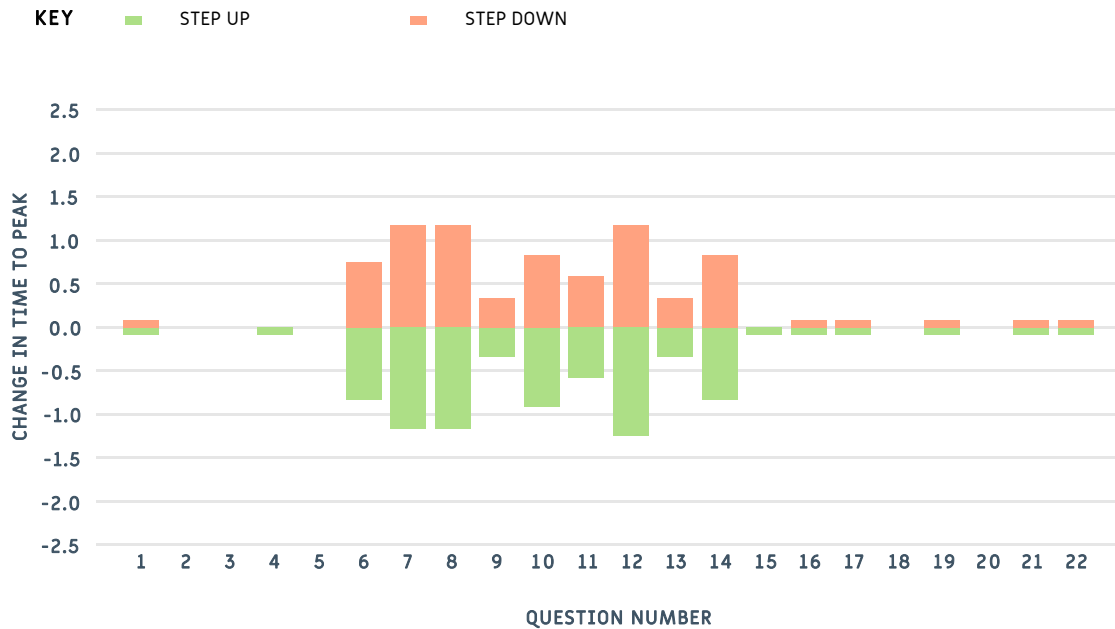
# Sensitivity Analysis

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

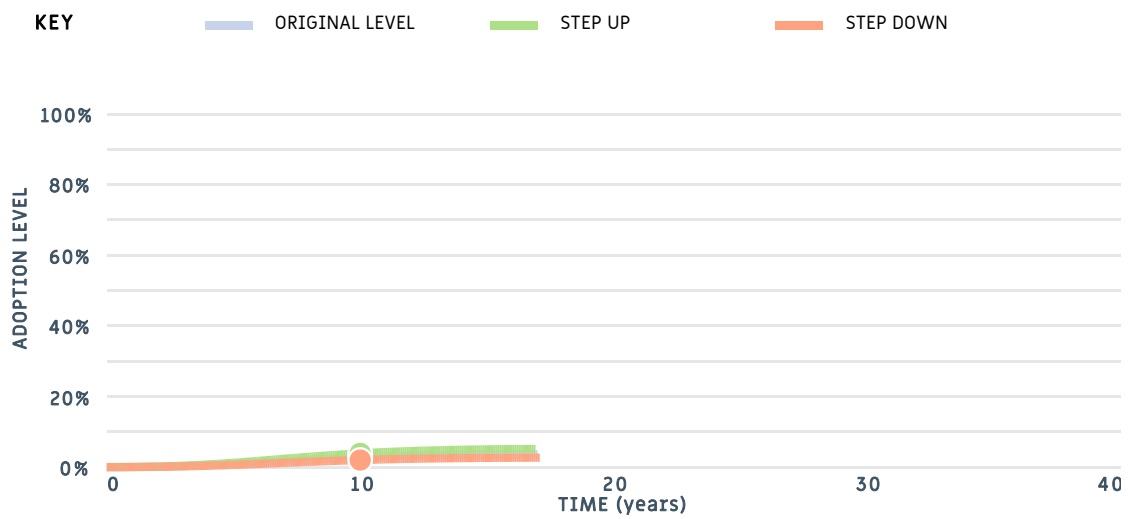


## Time to peak, sensitivity analysis

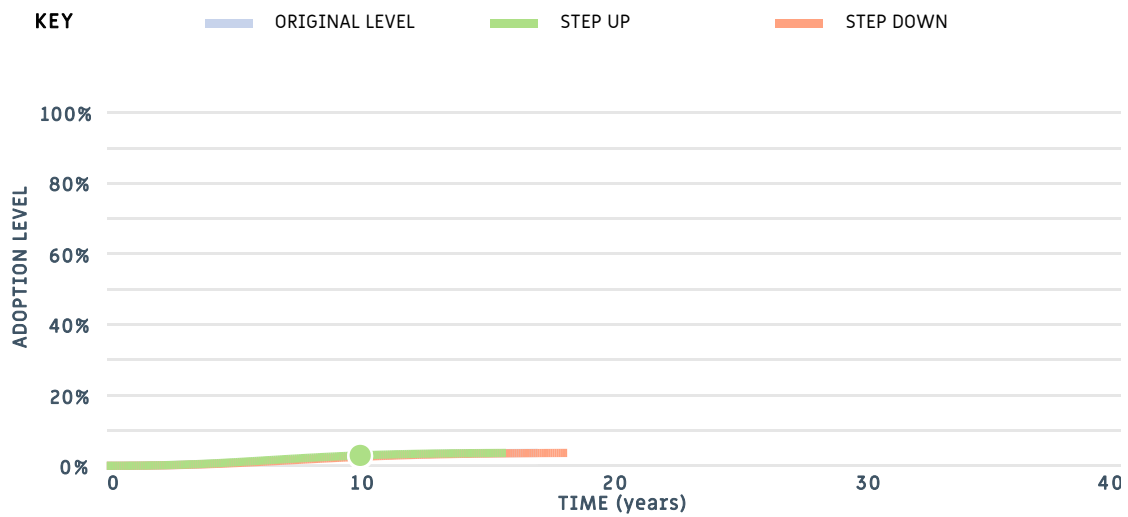


# S-Curve Sensitivity

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
<b>Relative Advantage for the Population</b>		
1. Profit orientation	About half have maximising profit as a strong motivation	3D imagining: We already have the weight scale and this solves the problem already. BCS is important but we have few animals and weight can solve it. Also, farmer should have knowledge to see/feel this trait. Maybe if you have a large flock - more than 1000 lambs - then picking for slaughter could be good. this is not the case in Norway.
2. Environmental orientation	A minority have protection of the environment as a strong motivation	
3. Risk orientation	About half have risk minimisation as a strong motivation	
4. Enterprise scale	Almost none of the target farms have a major enterprise that could benefit	
5. Management horizon	A majority have a long-term management horizon	
6. Short term constraints	About half currently have a severe short-term financial constraint	Hope it is so. But worried that it is actually a majority with current severe constraints. ...
<b>Learnability Characteristics of the Innovation</b>		
7. Trialable	Difficult to trial	
8. Innovation complexity	Difficult to evaluate effects of use due to complexity	Impossible to say as long as we do not know how the innovation will appear.
9. Observability	Easily observable	

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**Learnability of Population**

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10. Advisory support	A minority use a relevant advisor	
11. Group involvement	A majority are involved with a group that discusses farming	
12. Relevant existing skills & knowledge	A majority will need new skills and knowledge	Difficult to answer since we do not know the format and set up of innovation.
13. Innovation awareness	A majority are aware that it has been used or trialed in their district	

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**Relative Advantage of the Innovation**

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14. Relative upfront cost of the project	Large initial investment	Not relevant when price and work to run it is not available.
15. Reversibility of the innovation	Not reversible at all	Difficult to sell something if it does not work properly and /or you don't like it. ...
16. Profit benefit in years that it is used	Moderate profit advantage in years that it is used	
17. Future profit benefit	Small profit advantage in the future	No knowledge on price and running costs. ...
18. Time until any future profit benefits are likely to be realised	More than 10 years	Difficult to evaluate /to answer as we don't know costs.
19. Environmental costs & benefits	No net environmental effects	Demands lots of data, energy, storing capacity of data. Not good for environment ?
20. Time to environmental benefit	Not Applicable	
21. Risk exposure	No increase in risk	
22. Ease and convenience	No change in ease and convenience	Don't think the product will be good enough. BCS with wool on ?



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# ADOPT: Adoption and Diffusion Outcome Prediction Tool.

