

Agenda

Chair – Philippa Mansfield (Natural England)

15:10 – 15:25 : Presentation of farm surveys (Bill Bealey, UKCEH)

15:25 – 15:35 : Quick Questions (hand raise or chat window)

15:35 – 16:15 : Breakout Groups x4

- **England 1 (Philippa Mansfield)**
- **England 2 (Vera Barbosa - Environment Agency)**
- **Scotland (Jan Dick UKCEH)**
- **Wales (Bill Bealey)**
- **Northern Ireland (Sim Tang UKCEH)**

16:15 – 16:30 : Plenary: Rapporteur Feedback & Discussion (Jan Dick)



ART WORKSHOP “What motivates farmers to plant trees?”

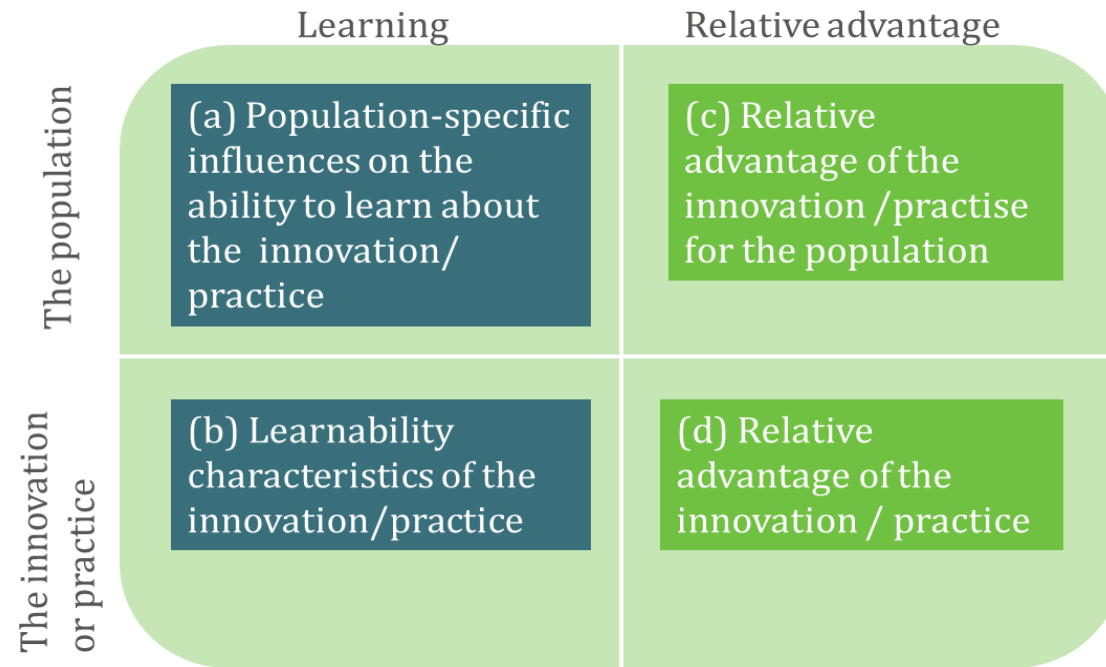
Farmer case study surveys and online survey

lakesfreerange.co.uk

Jan Dick and Bill Bealey UKCEH

January 14th, 2022

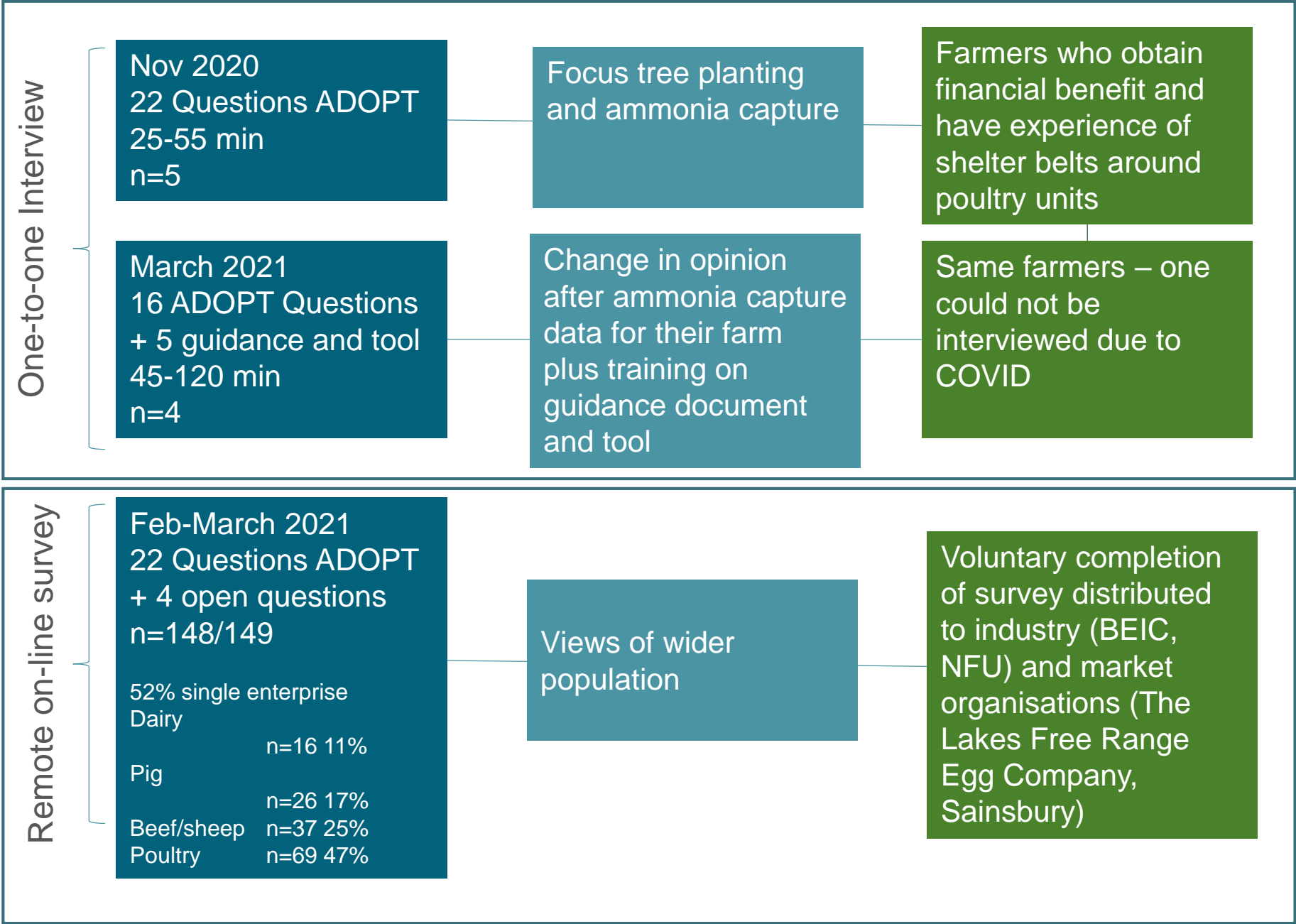
Farm Surveys - Interview and survey design



ADOPT - Kuehne et al 2017. Hosted by CSIRO in Australia
(<https://adopt.csiro.au/>).

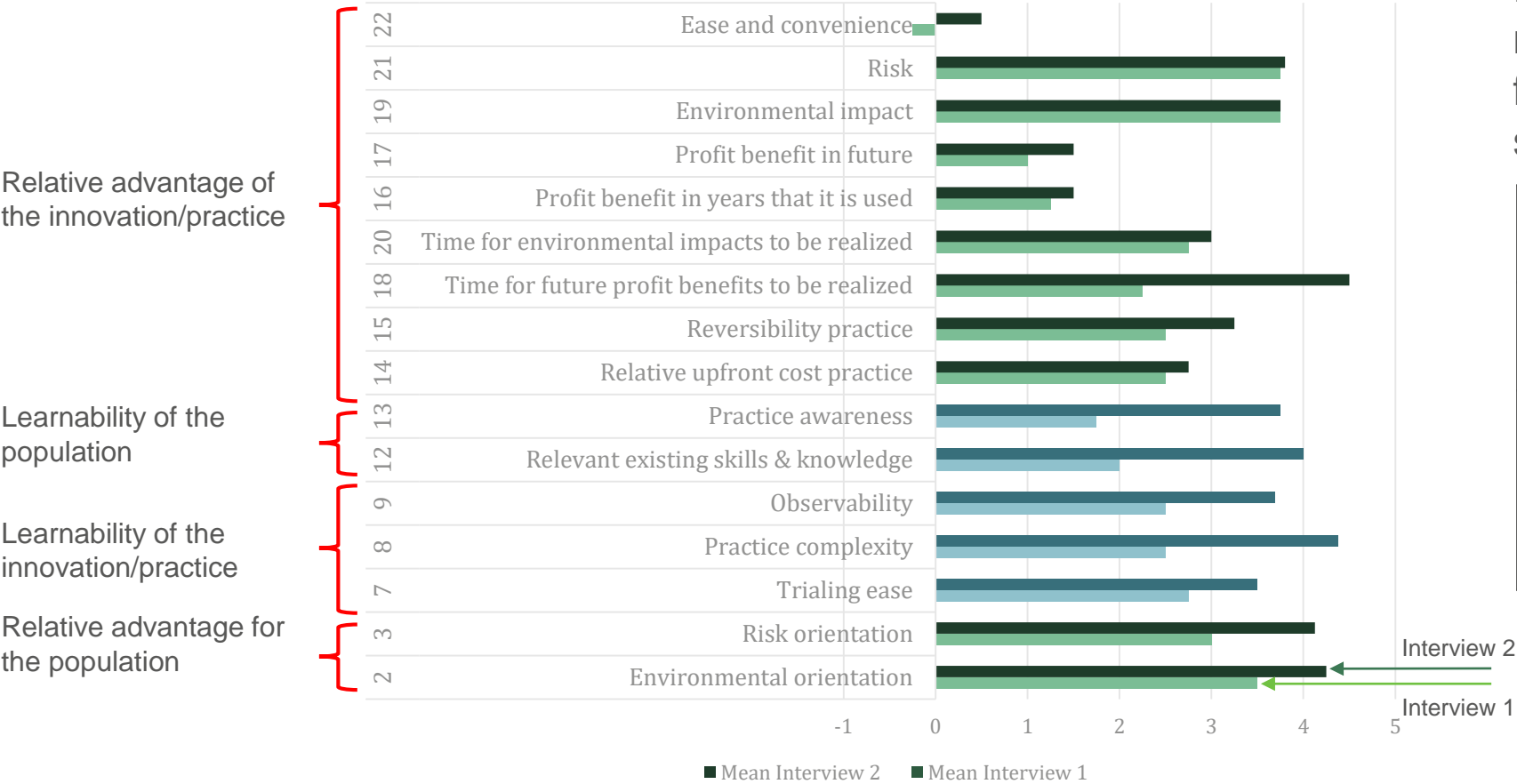
- A published predictive quantitative model of adoption was utilised
- ADOPT model (Adoption and Diffusion Outcome Prediction Tool)
- Addresses the motivation of farmers, relative advantages of a new innovation, the learning associated with the new innovation and provides the opportunity to model the likely uptake of the practice of planting woodland to capture ammonia.

Consultation with farmers 1:1 and online



Farmer's views on practicalities and farm business benefits of tree planting to capture ammonia from hen or dairy units

Average scores of questions repeated in interview 1 and 2



Parameterising the ADOPT model with estimates from the first and second interviews suggested:

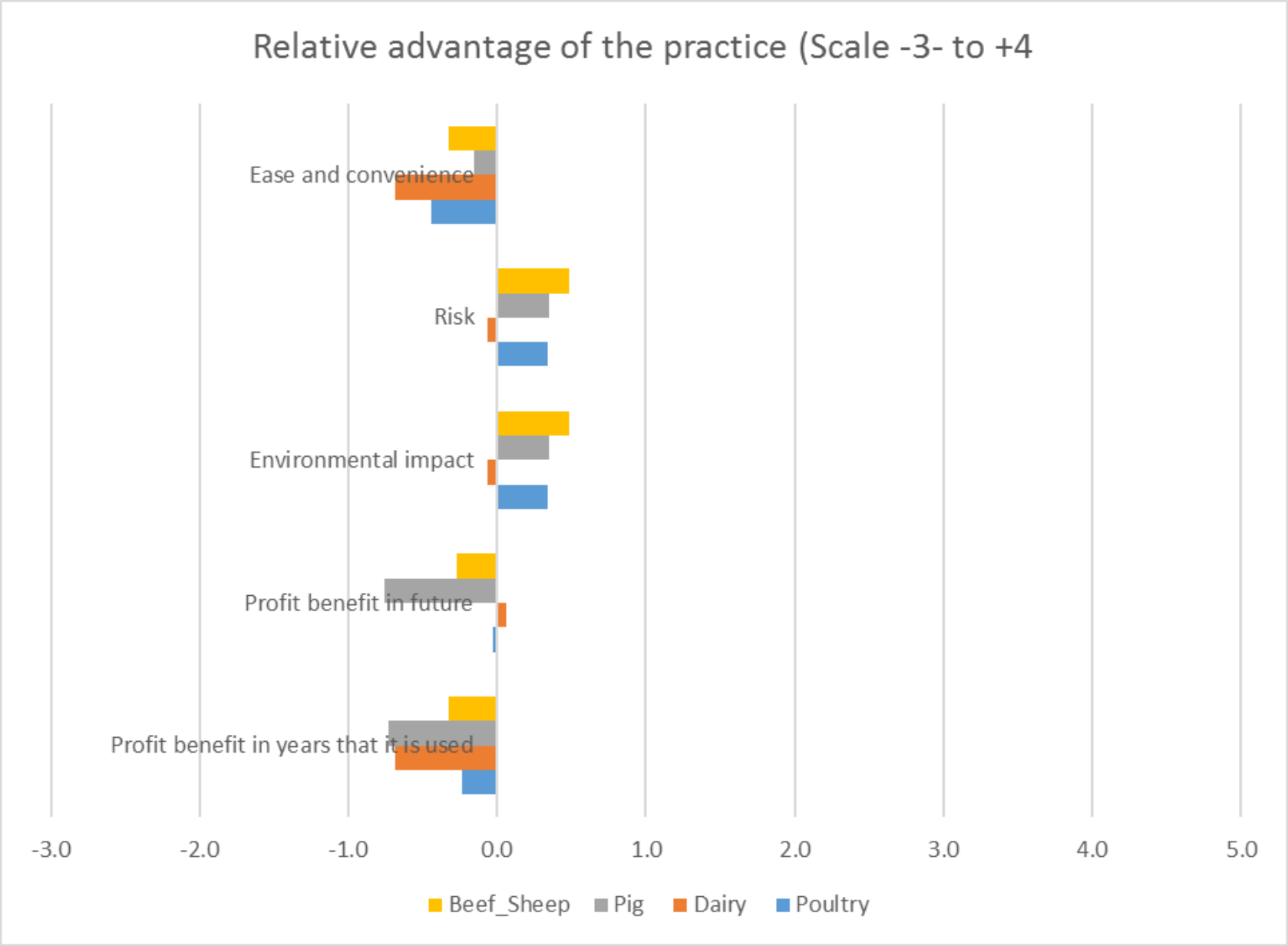
	1st Interview	2nd Interview
Uptake of practice	45%	85%
time to near-peak adoption levels	18 years	10 years

The average scores for all repeat questions was higher or very similar in the second interview after the farmers had access to data detailing the capture of ammonia on their farm, the ammonia calculator and the guidance document (n=4)

Results – online survey

Farm type	Number of respondents
Poultry	69
Beef/Sheep	37
Pig	26
Dairy	16
Unknown	1
Grand Total	149

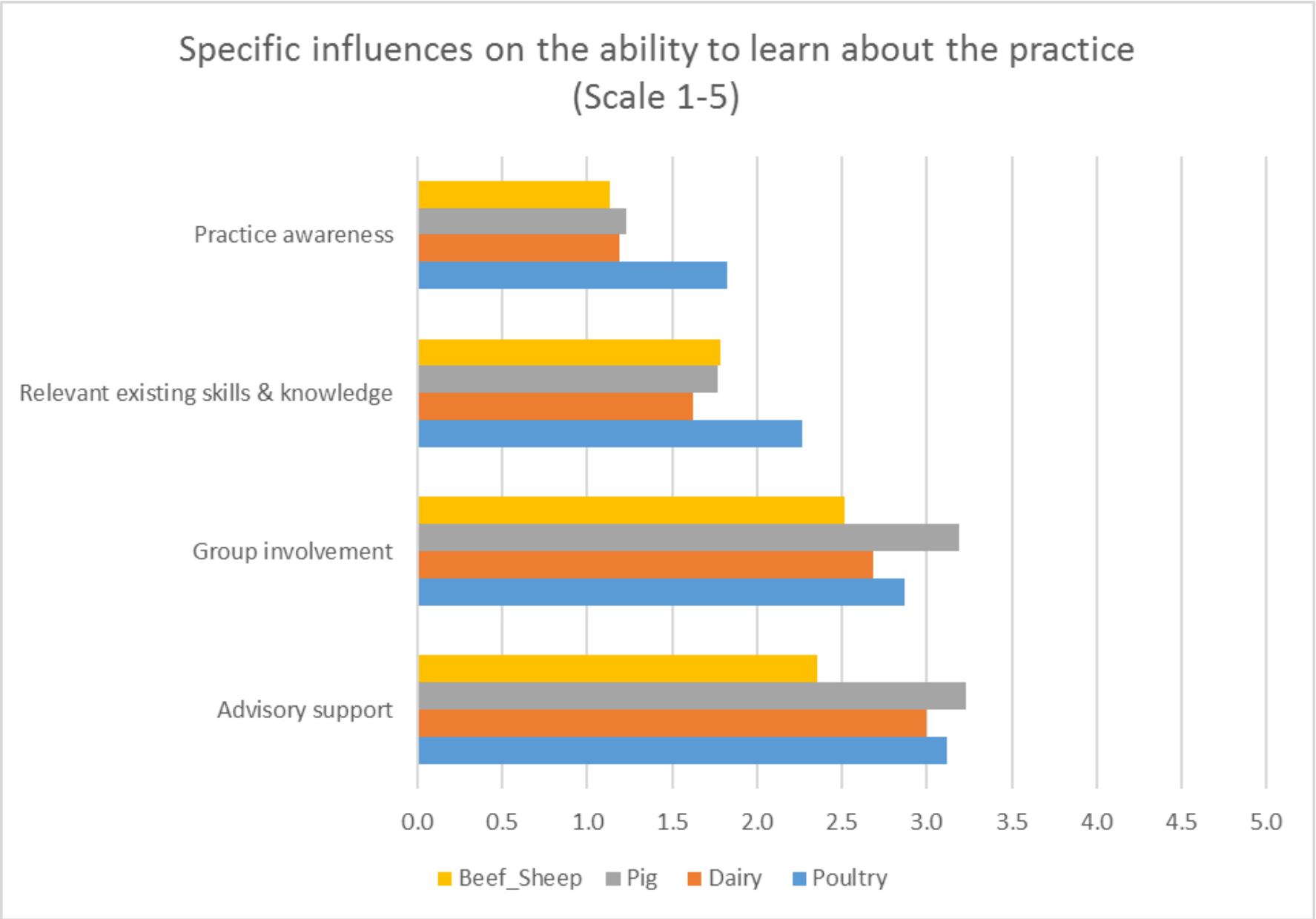
Results – online survey - The practice



Due to proportion of mixed farms need to be careful when interpreting data by sector

Generally all farm types similar and viewed tree planting to capture ammonia negatively in terms of profit and convenience and positively in terms of environment

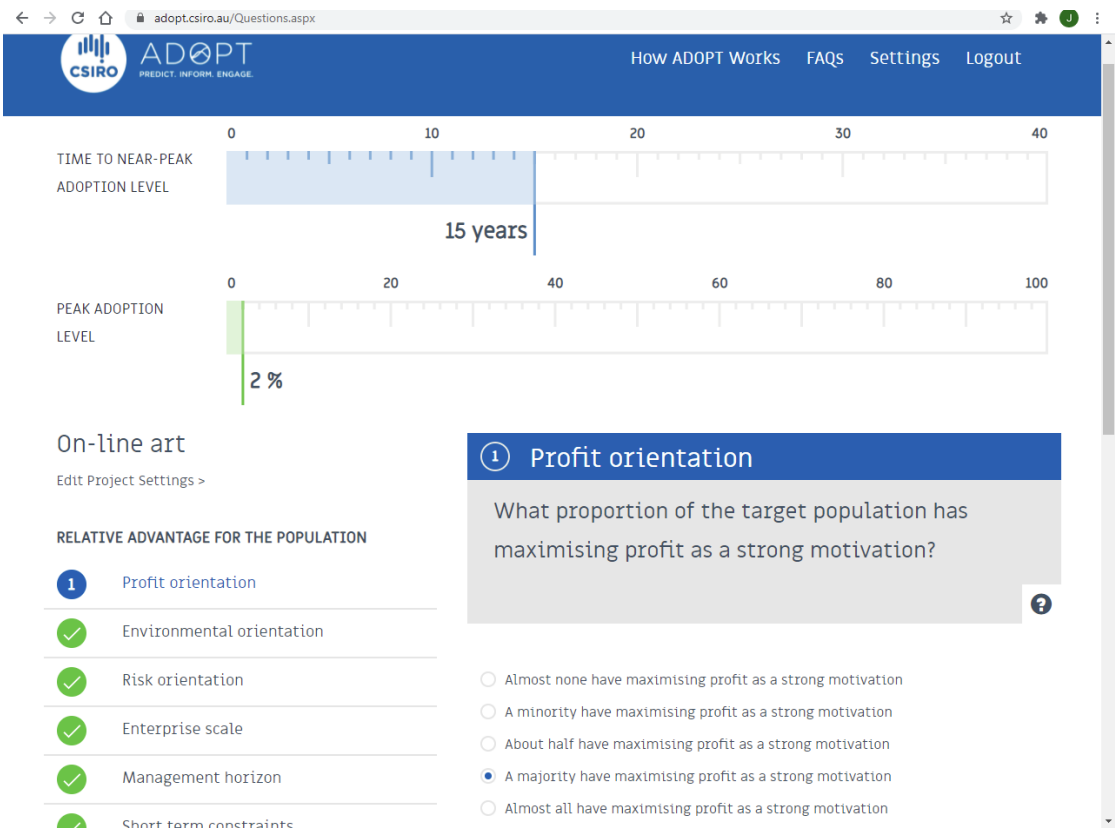
Results – online survey - Learnability



Generally poultry farmers scored their knowledge about the practice slightly higher than other farming sectors (need to be careful of sectorial interpretations) possibly because discussion of ammonia higher profile in this farming sector via emissions regulation.

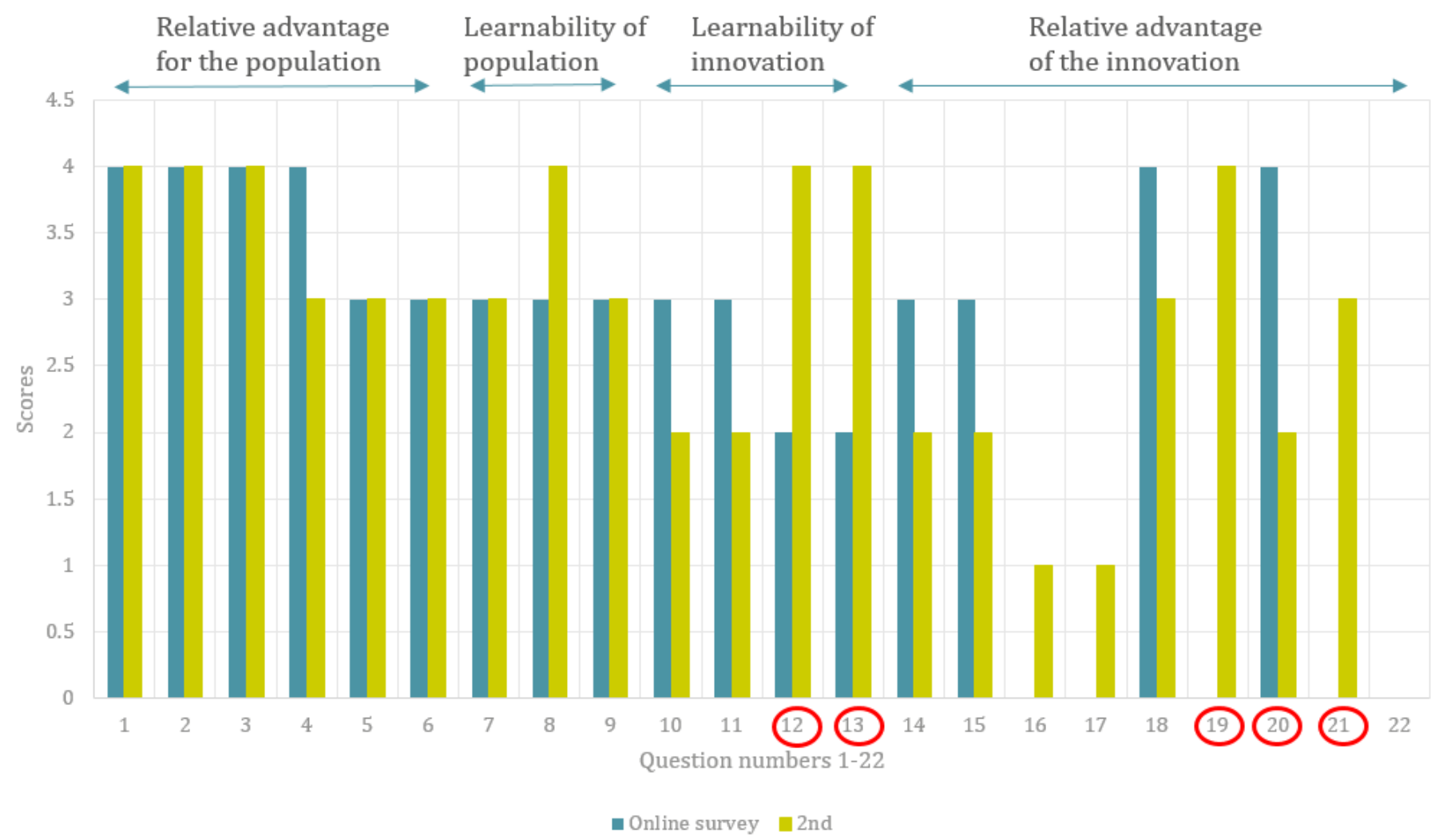
ADOPT Model predictions –survey

	Poultry	Dairy	Pig	Beef_Sheep
Time to near-peak adoption (years)	15	17	17	19
Peak adoption level (%)	2	2	2	2



Model predicts poultry farmers likely to adopt the practice slightly quicker but low adoption predicted for all sectors

Difference in ADOPT between second interview and on-line survey



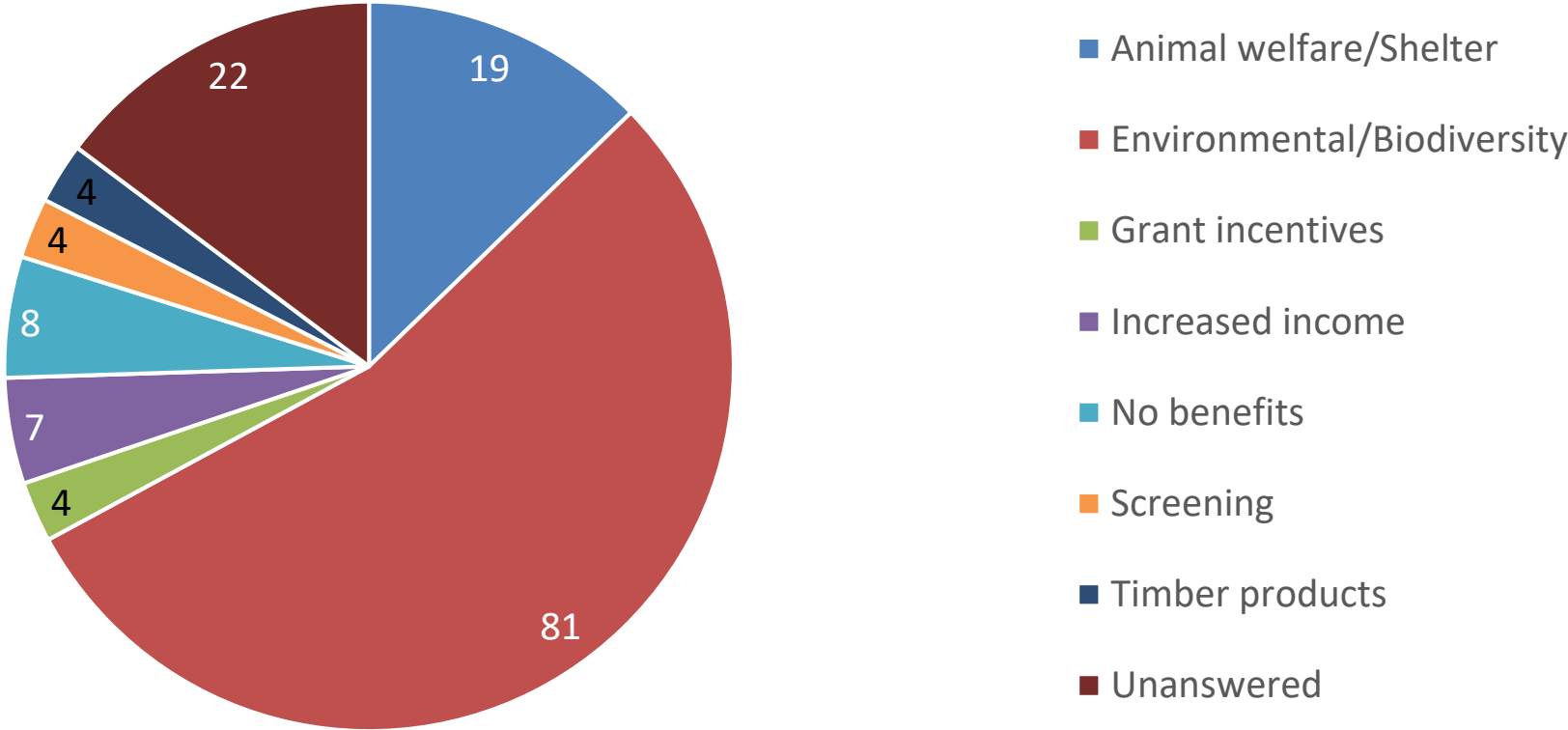
Questions with a score difference of 2 or greater
Q12 rate your knowledge how to design planting trees to capture ammonia
Q13 how common is tree planting to capture ammonia in your district
Q19 how large an environmental disadvantage (NB -3 to +5)

Q20 When do you expect the environmental impacts
Q21 How large an increase in risk do you consider planting trees to capture ammonia (NB -3 to +5)

Q25 'What benefits would you expect to see from planting trees on your farm?'

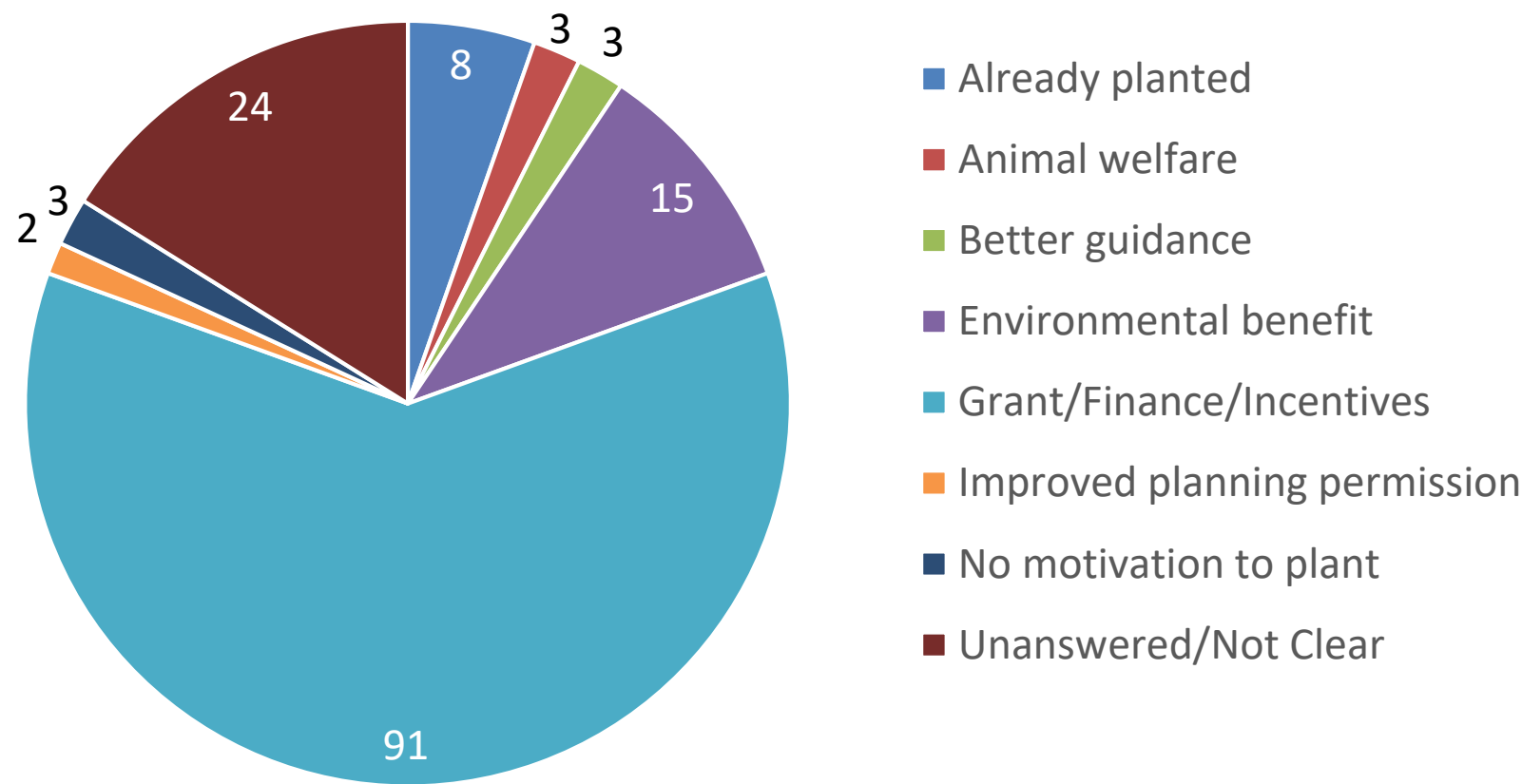
25. What benefits would you expect to see from planting trees on your farm?

n=149



Q26 'What would motivate you to plant a tree shelter belt or woodland on your farm?

Q26. What would motivate you to plant a tree shelter belt or woodland on your farm? n=149



‘What benefits would you expect to see from planting trees on your farm?’



**‘What would motivate
you to plant a tree
shelter belt or
woodland on your
farm?’**



Issues raised by farmers

Issue	Aspects
Financial Incentives	Capital costs Long-term maintenance payments
Financial Penalties	Regulation by government or industry Market penalties
Land availability	Trade-off with other uses Permission from landowner Reduction in land value
Management flexibility	Trees long-term so restricts future options (e.g. building expansion, siting of renewables projects such a wind and solar)
Increased work/risk	Tree roots and drains Damage to buildings and people Leaves in gutters Seeds in equipment
Desire for more knowledge	Do trees capture ammonia ? Which trees best ? What's best planting design to maximise benefits ?

Conclusions

- Lack of awareness of the ability of trees to capture ammonia, uncertainty in the market and hesitancy around future ammonia pollution policy options currently hinder the uptake of this practice in the UK
- Generally establishing woodland to capture ammonia was not seen as an easily observable or easy to trial activity, this changed following training and data delivered to participating farmers
- The results of this study indicate that the ammonia capture tool and shelter belt design guidance document useful to change perceptions of the practice
- Farmers were generally aware of multiple environmental benefits of trees on their farms commenting on the benefits for wildlife, livestock shelter (wind & sun), screening livestock housing, reduced soil erosion, reducing noise/odour pollution, and trees contribution to carbon capture.