DCAP3

CREATING ALTERNATE INCOME STREAMS TO INCREASE FARM PROFITABILITY AND BENEFIT THE ENVIRONMENT (UNISQ)

MILESTONE REPORT 3A

FARMER PERCEPTIONS OF ENVIRONMENTAL MARKET INCOME DIVERSIFICATION SCHEMES

Acknowledgements: *This project is funded by the Queensland Government's Drought and Climate Adaption Program (DCAP) that aims to improve drought preparedness and resilience for Queensland producers.*

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CONTENTS

Table of Figures

Background

This industry-led project aims to directly engage with producers to assess the application and potential benefits (and, importantly, the risks/trade-offs) of emerging opportunities aimed at building a more resilient and environmentally sustainable agricultural sector. These opportunities are expected to allow growers to diversify their income streams and smooth year-to-year income variability linked to climate-related risk by accessing markets that provide financial rewards for increasing vegetative and soil carbon sequestration, as well as other potential environmental credit options.

However, while there are a range of new income streams that aim to both deliver environmental benefit and help farmers adapt to climate change currently being developed and delivered in Australia, key information that farmers need to make informed decisions about these programs is lacking. This includes clear information about the trade-offs for farmers and, importantly, analysis of how climate variability and climate change risk could affect the timing and profitability of decisions to participate in such schemes.

With this in mind, the key objectives of this project are to:

- assess the potential benefits and trade-offs for farmers considering engaging in these financial mechanisms, particularly in areas where climate variability and climate change may pose a risk to the delivery of planned/contracted outcomes; and
- create resources for farmers (e.g., case studies, risk analysis and other decision support) that will allow them to make informed decisions that enhance profitability in the face of climate variability and risk.

By delivering on these objectives, the project will ensure that land managers interested in engaging in these programs are able to make informed and profitable decisions.

Survey purpose

The primary purpose of the survey was to gather information to help evaluate the drivers, motivations, barriers, and willingness of producers and rural land managers to participate in carbon/biodiversity income diversification schemes.

The survey sought the perceptions and experience of the survey participants on these schemes through a series of questions designed to collect data for the following themes:

- Demographics of respondents including roles, experience, and details of agricultural operations;
- Drivers, motivations and barriers around environmental markets;
- Enabling conditions and willingness to participate in environmental markets;
- Understanding and decision-making processes applied to environmental markets; and
- Examples of carbon and biodiversity schemes farmers are currently involved in.

Survey methodology

Survey questions (Appendix A) were prepared by UniSQ project team members in consultation with QFF and distributed through QFF's 10 Things to over 3000 stakeholders representing a range of industries including beef, sugarcane, grains, pork, poultry, dairy, sheep, horticulture, cotton and the nursery industry. The survey was also promoted through the QFF monthly member bulletins (in September and October 2023), QFF member communication officers and through the QFF/Natural Resource Management Queensland (NRMQ)-led Carbon Community of Practice and NRMQ newsletter. Information about the survey was also sent through the two Queensland-based FDF Drought & Innovation Hubs (SQNNSW and Northern Tropics) networks.

The survey was released on 18 September 2023 and closed on 30 November 2023.

Survey results

In total, 56 survey responses were received, including 54 from across Queensland and two interstate (Figure 1).

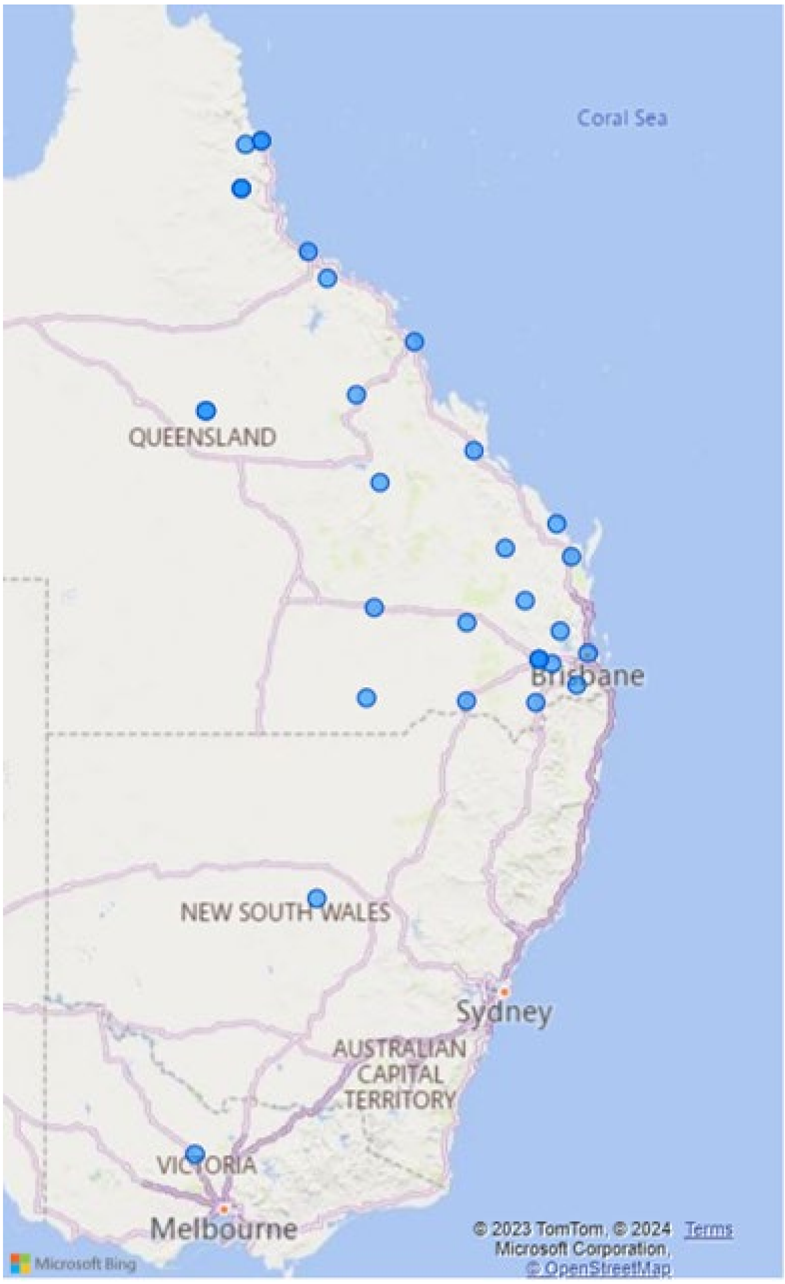

Figure 1. Survey respondent locations (n=56)

1. Demographics and decision-making role of respondents

Survey respondents were relatively balanced in terms of gender (Figure 2) and represented a range of ages (Figure 3) – the majority (46) born between 1950 and 1979 (i.e., aged 40-70) and seven in the 20-30 year age bracket. The majority of respondents (45) indicated that they were a key decision-maker for their farming enterprise (Figure 4); this included 87% of male respondents and 72% of females (Figure 5). Over 91% of respondents indicated that they were either owner-operators or partners in the family farming business (Figure 6); and over half of the respondents had been on their properties for over 25 years, while ~11% have been on their properties for less than 5 years (Figure 7).

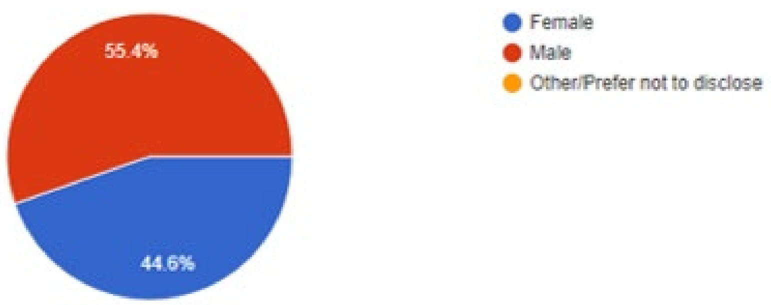

Figure 2. Gender of survey participants (n = 56)

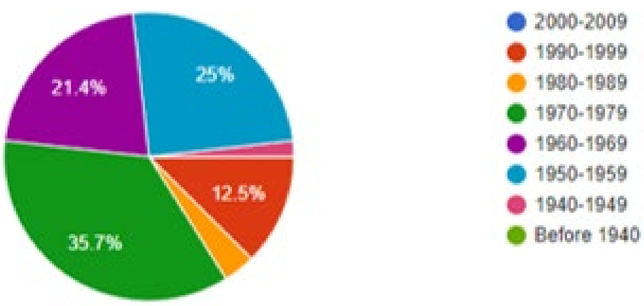

Figure 3. Age category of survey participants by decade of birth (n = 56)

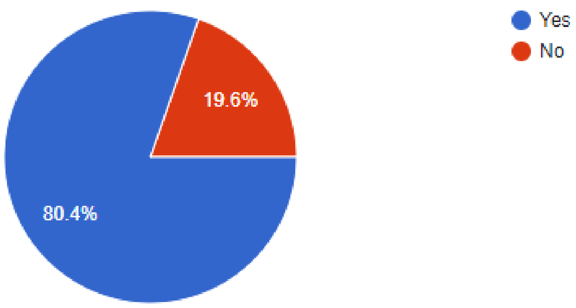

Figure 4. Survey participants as decision-makers (n = 56)

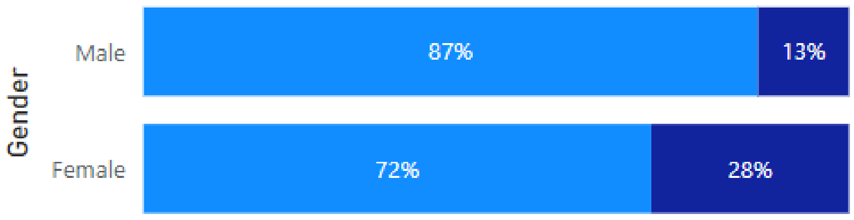

Figure 5. Breakdown of decision-maker responses by gender (light blue = key decision-maker; light blue = not a key decision-maker)

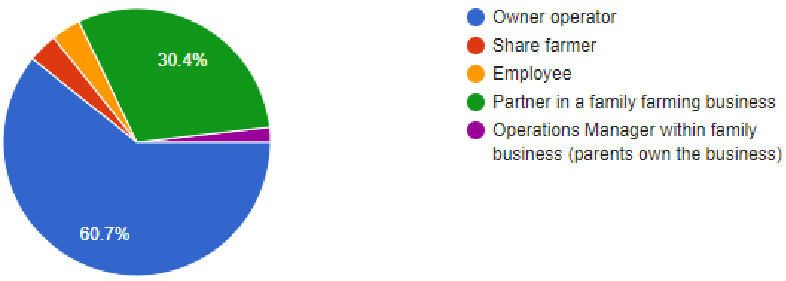

Figure 6. Survey participants reported roles in production enterprise (n = 56)

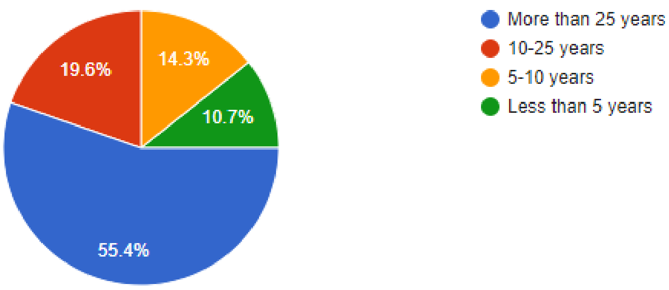

Figure 7. Survey participants reported length of time on property (n = 56)

2. Property tenure, production system type and membership of industry organisations

The majority of survey respondents (51 of 56) own or manage freehold property types (Figure 8), producing a range of agricultural commodities. The largest number of respondents were beef producers (31 of 56), followed by horticulture (15%), grains (13%) and sugarcane (12%) as indicated in Figure 9. Correspondingly, respondents were associated with industry bodies relevant to these production types (Figure 10).

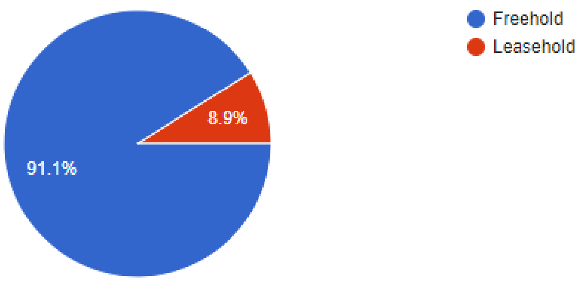

Figure 8. Land tenure of survey participant properties (n = 56)

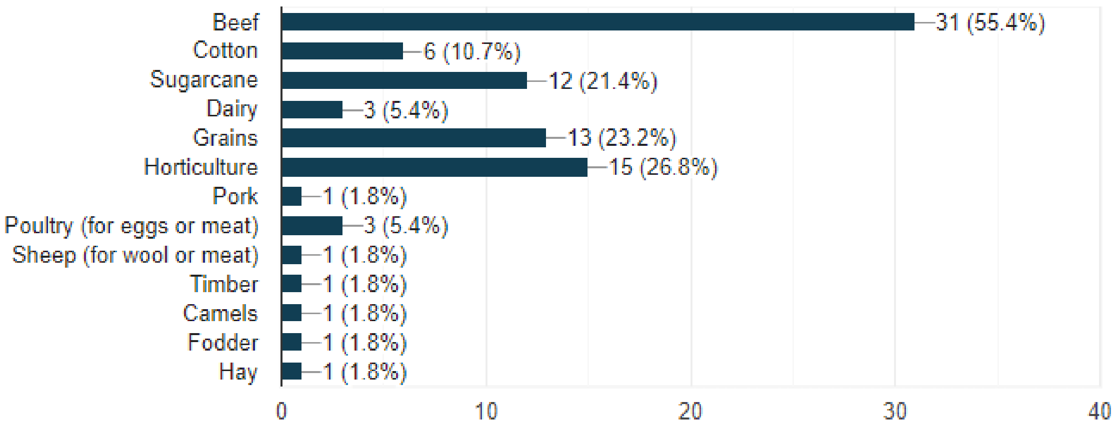

Figure 7. Enterprise production types reported by survey participants. Values are number (and %) of respondents (n = 56); total may exceed 100% (respondents could indicate more than one commodity produced per enterprise).

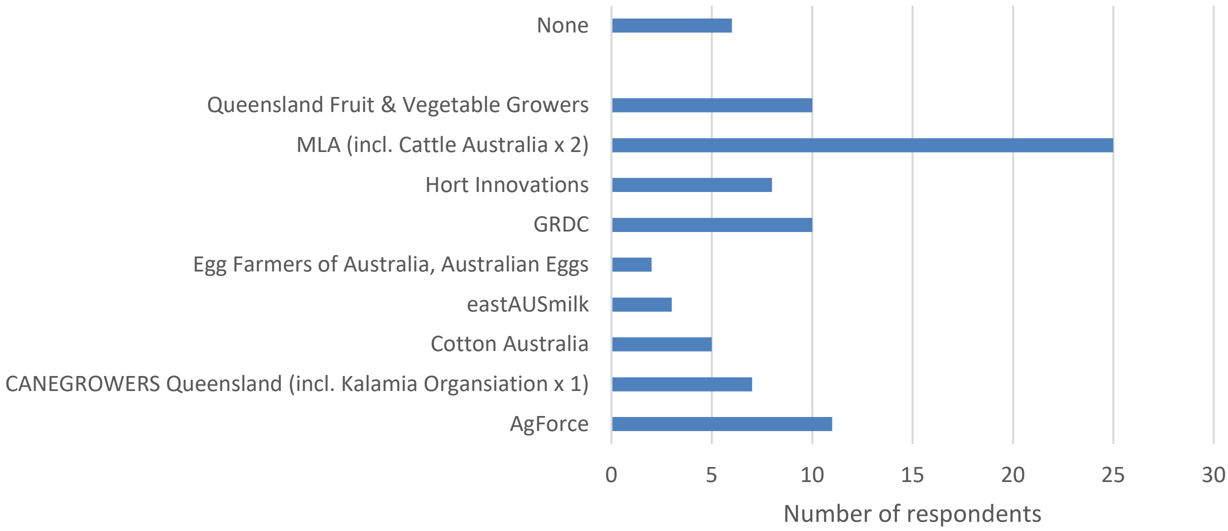

Figure 8. Membership of industry organisations reported by survey participants. Values are number of respondents (n = 56); cumulative total exceeds total number of respondents (respondents could indicate membership of more than one industry body/association).

3. Perceptions, motivations and involvement in Carbon farming programs

Of the 56 survey respondents, almost 90% indicated that they were aware of the carbon farming programs (Figure 11), with 75% scoring their understanding of these programs as fair (a score of 3) to very good (5) and 25% indicating that they had limited understanding of the programs, as shown in Figure 12. The most reported sources of information about carbon farming credit programs were communications from the agricultural industry bodies, neighbours, government information about programs (e.g., ERF, LRF), carbon consultants and NRM regional organisations, and the preferred formats were webinars and agricultural shows and field days (Figure 13).

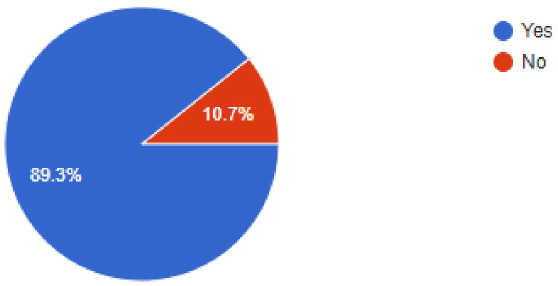

Figure 9. Survey participants' reported awareness of C-farming programs (n = 56)

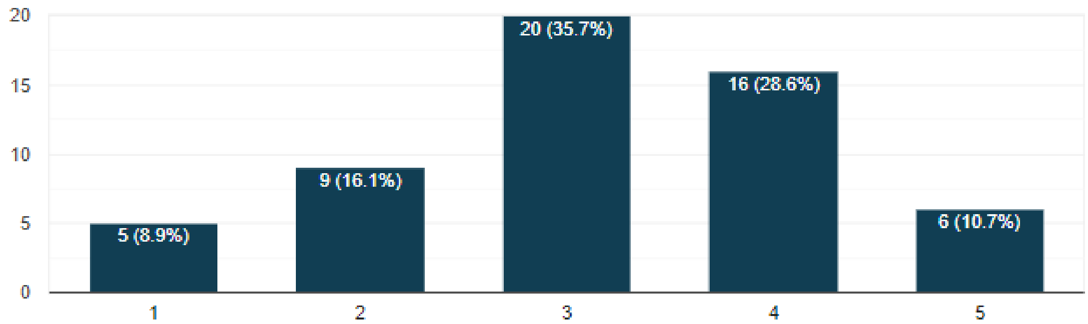

Figure 10. Survey participants' self-evaluated understanding of carbon farming programs and carbon markets. Scale (1-5) indicates level of awareness and understanding, where 1 = poor and 5 = good; values are numbers (and %) of respondents (n = 56).

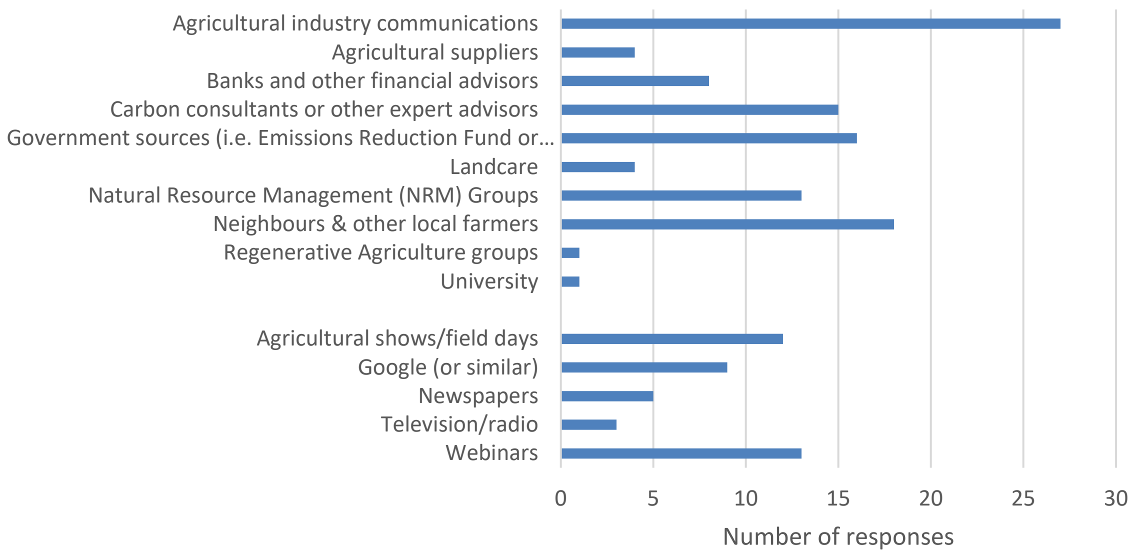

Figure 11. Survey participants' sources of information regarding carbon farming credit programs. Values are numbers of respondents (n = 56); cumulative total exceeds total number of respondents (more than one response allowed).

While most respondents trusted the information and advice provided (Figure 14), the majority (~70%) had not yet sought specific advice for their individual enterprise (Figure 15) and most (61.5%) indicated that they were not interested in further investigating or undertaking such an option (Figure 16), citing a range of reasons (Figure 17).

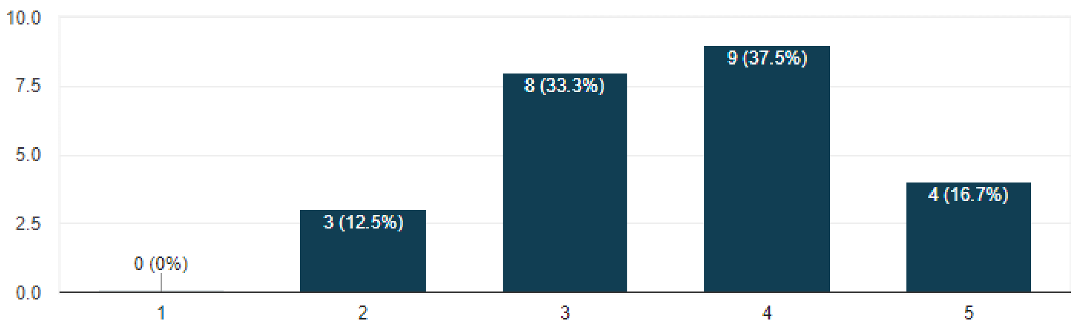

Figure 12. Survey participants' level of satisfaction with advice provided about carbon farming credit programs (n = 24). Values are numbers (and %) of respondents.

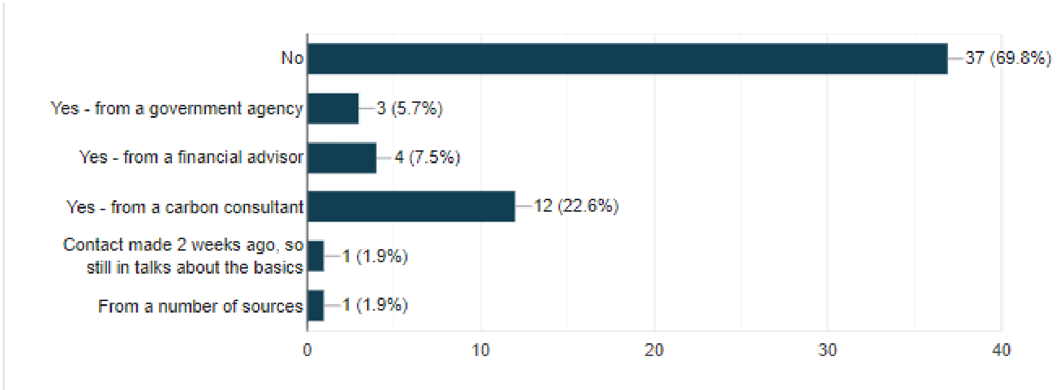

Figure 13. Sources of specific advice sought by respondents regarding the benefit of carbon credit schemes to their farming enterprise/property (n = 53). Values are numbers (and %) of respondents; cumulative total exceeds total number of respondents (more than one response allowed).

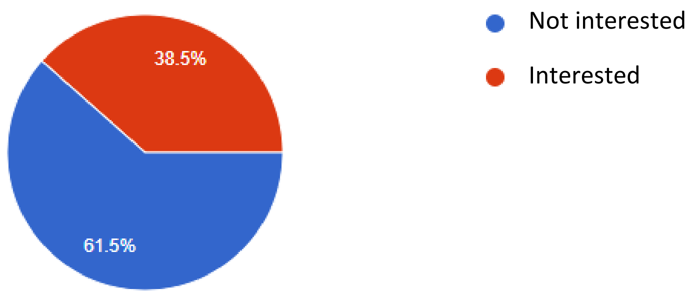

Figure 14. Percentage of respondents interested in undertaking a registered carbon farming project (n = 52)

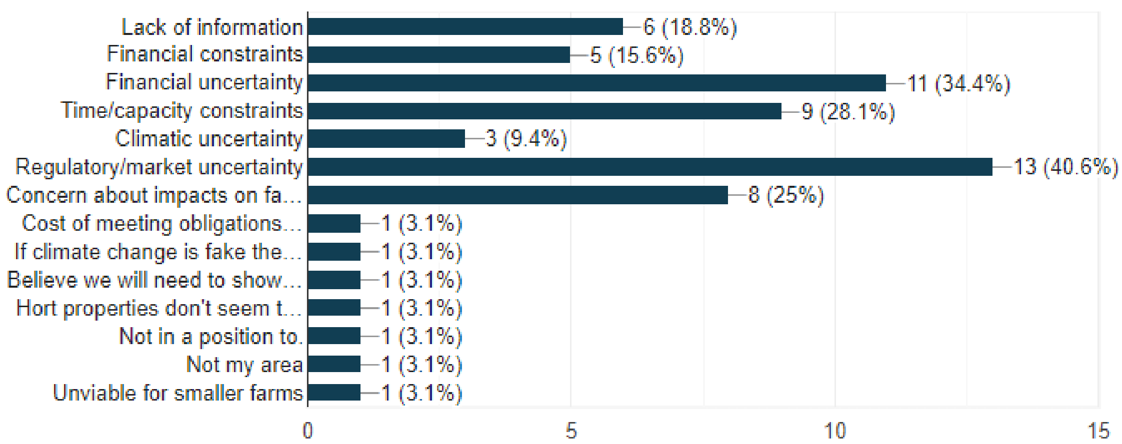

Figure 15. Reported reasons for survey participant response of ‘not interested’ in undertaking a registered carbon farming project (n = 32). Values are numbers (and %) of respondents per category; cumulative total exceeds total number of respondents (more than one response allowed).

Of the almost 40% of respondents who said they were interested in undertaking a registered carbon farming project (Figure 16), most respondents felt that such a project would be of benefit to their individual enterprise – providing income diversity and on-farm production and ecosystem benefits (84%, 56% and 52%, respectively); 48% also felt that they would be contributing to global sustainability (Figure 18). However, many remain hesitant to commit, citing regulatory/market (68% of responses) and financial (52%) uncertainty; climatic uncertainty was mentioned by just five of the 25 respondents (Figure 19).

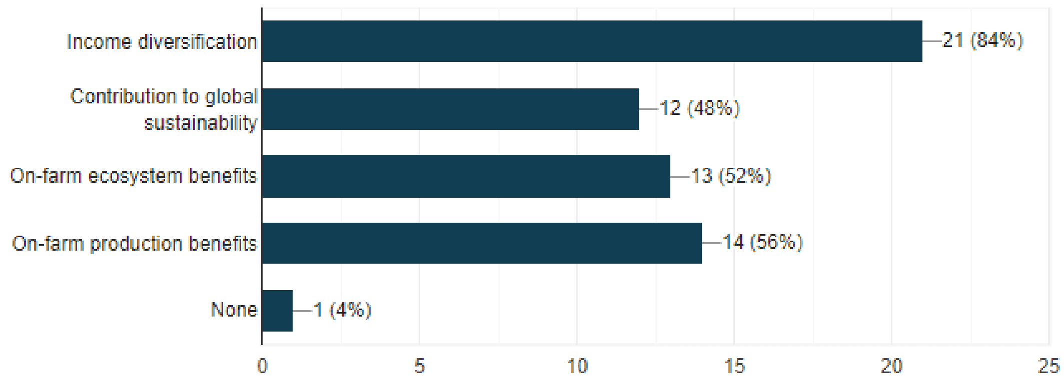

Figure 18. Of those who answered 'interested' – main reasons (n = 25). Values are numbers (and %) of respondents per category; cumulative total exceeds total number of respondents (more than one response allowed).

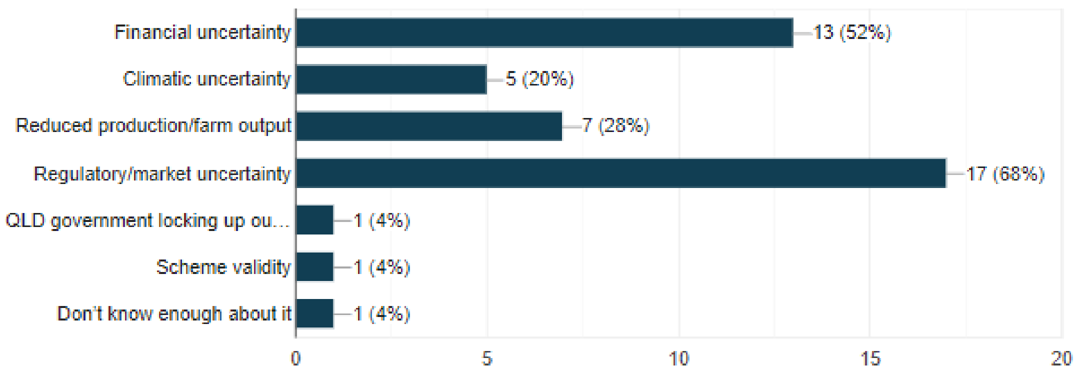

Figure 16. Of those who answered 'interested' – perceptions of risk (n = 25). Values are numbers (and %) of respondents per category; cumulative total exceeds total number of respondents (more than one response allowed).

Of the 56 survey respondents, just four (7%) reported being currently involved in a registered carbon farming credit program (Figure 20). Programs in which they are involved include soil carbon biodiversity offsets; a 25 year ‘Soil carbon’ project (signed on in 2022); and a 25 year ‘Building soil carbon through changed stocking practices (rotational grazing)’ project (signed on in 2021). Reasons for entering into these agreements were similar to those cited above in Figure 18, with the additional benefit of increasing/future proofing market access (Figure 21); all reported positive financial and sustainability outcomes over their period of involvement (Figure 22).

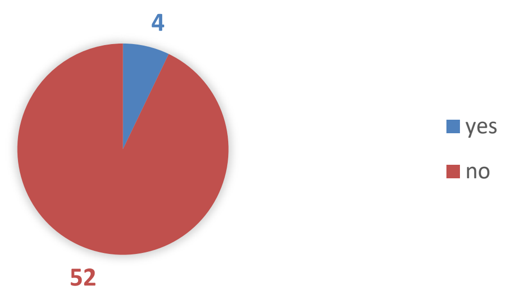

Figure 17. Percentage of respondents who are currently participating in a carbon farming credit program; i.e., whose farming business has a registered project earning ACCUs (n = 56).

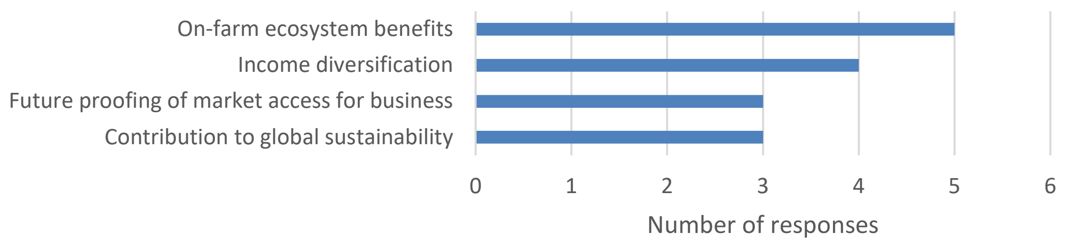

Figure 18. Respondent reasons for signing up (n = 4); Cumulative total exceeds total number of respondents (more than one response allowed).

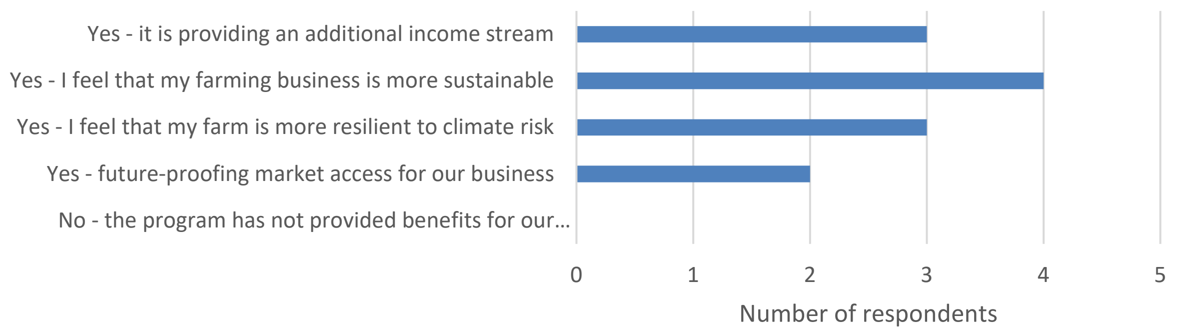

Figure 19. Respondents’ perceptions of program benefits to their business (n = 4). Cumulative total exceeds total number of respondents (more than one response allowed).

4. Perceptions, motivations and involvement in biodiversity benefit, environmental stewardship or similar programs

Of the 56 survey respondents, 55.4% indicated that they were aware of biodiversity benefit, environmental stewardship or similar programs (Figure 24), with just 16% scoring their understanding of these programs as good (a score of 4) to very good (5) and 84% indicating that they had limited (fair to poor) understanding of the programs, as shown in Figure 25. Reported sources of information (Figure 26) were similar to those for carbon farming credit programs (Figure 13) and may reflect a more general engagement with these.

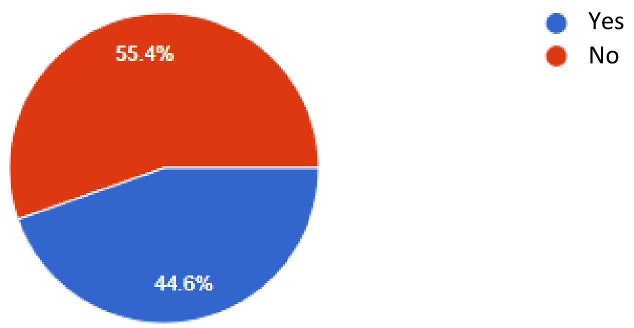

Figure 24. Awareness of Biodiversity or Environmental Stewardship payment/credit programs (n = 56)

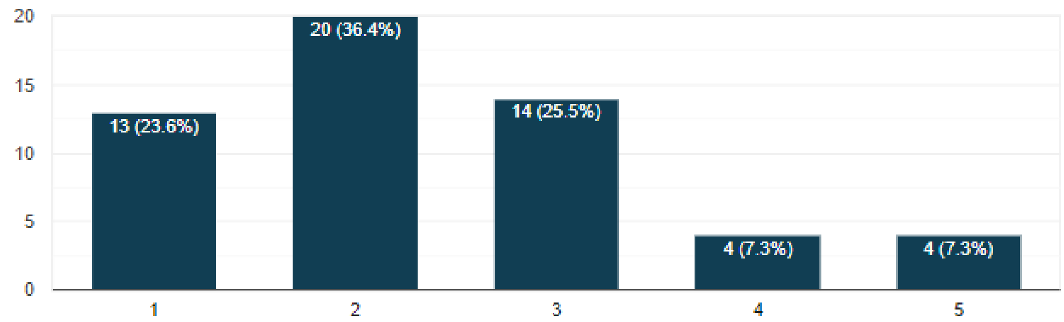

Figure 25. Self-evaluated awareness and understanding of biodiversity or environmental stewardship credit programs (n = 55). Scale (1-5) indicates level of awareness and understanding, where 1 = poor and 5 = good; values are numbers (and %) of respondents.

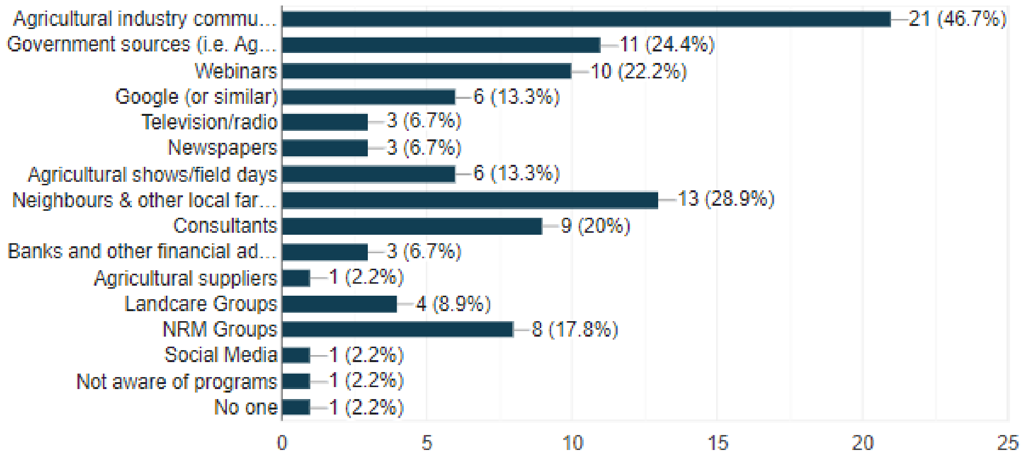

Figure 26. Sources of information about biodiversity or environmental stewardship credit programs (n = 45). Values are numbers (and %) of respondents (n = 45); cumulative total exceeds total number of respondents (respondents could indicate membership of more than one source of information).

None of the 56 survey respondents reported being currently involved in a registered biodiversity benefit, environmental stewardship or similar program, although a number (18 – around one third) reported interest in doing so (Figure 27) and several had sought further information about such programs (Figure 28). However, a majority cited lack of information as the major reason for their lack of engagement/interest in such programs (Figure 29).

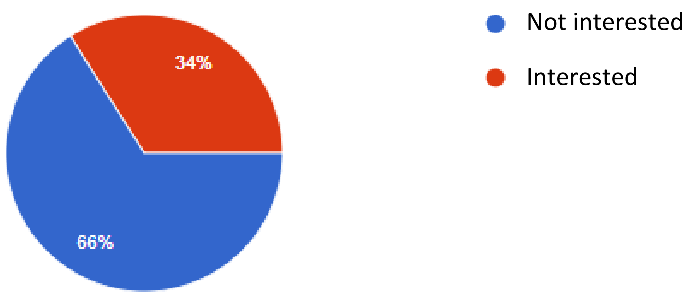

Figure 27. Percentage of respondents interested in becoming involved in a biodiversity or environmental stewardship credit program or similar (n = 53).

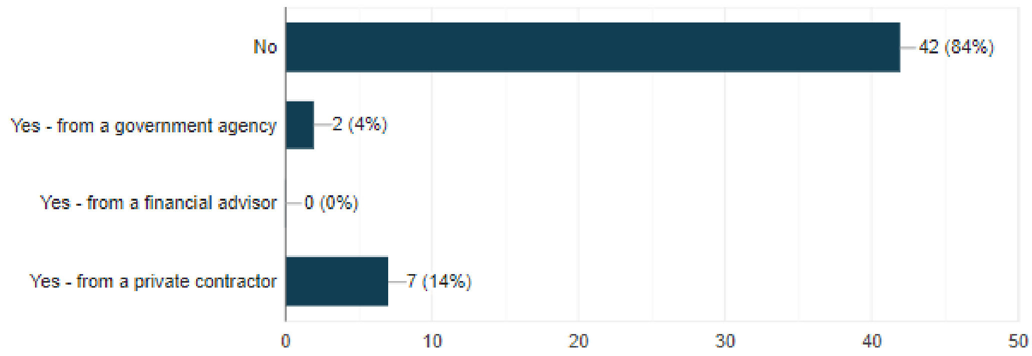

Figure 28. Sources of specific advice sought by respondents regarding the benefit of a biodiversity or environmental stewardship credit program or similar to their farming enterprise/property (n = 50). Values are numbers (and %) of respondents per category; cumulative total exceeds total number of respondents (more than one response allowed).

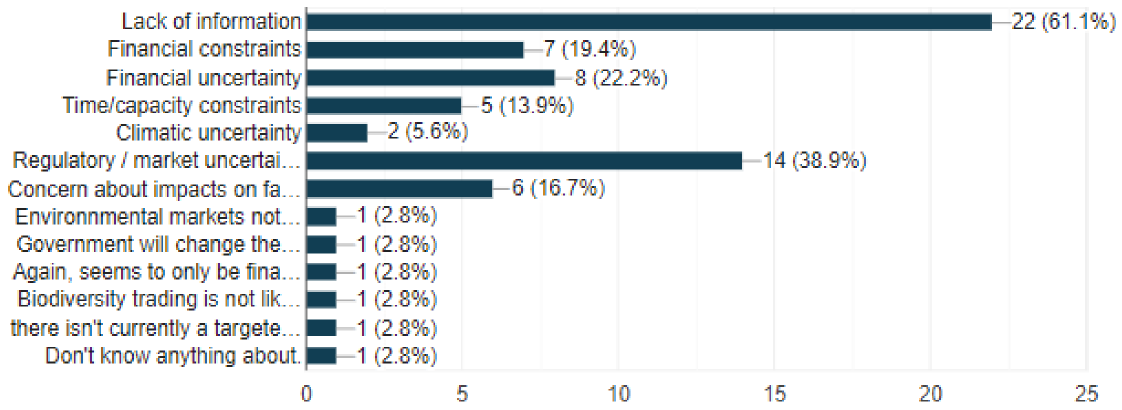

Figure 29. Of those who answered 'not interested' – main reasons (n = 36). Values are numbers (and %) of respondents per category; cumulative total exceeds total number of respondents (more than one response allowed).

Of the 18 survey respondents who said they were interested in potentially being involved in a registered biodiversity benefit, environmental stewardship or similar program, most considered such a program would provide substantial on-farm financial and environmental benefit (Figure 30); their concerns mostly centred around perceived risk/uncertainty associated with the regulatory mechanisms and possible impacts on production, hence enterprise finances. Climatic uncertainty as a risk was mentioned by just three respondents (Figure 31)

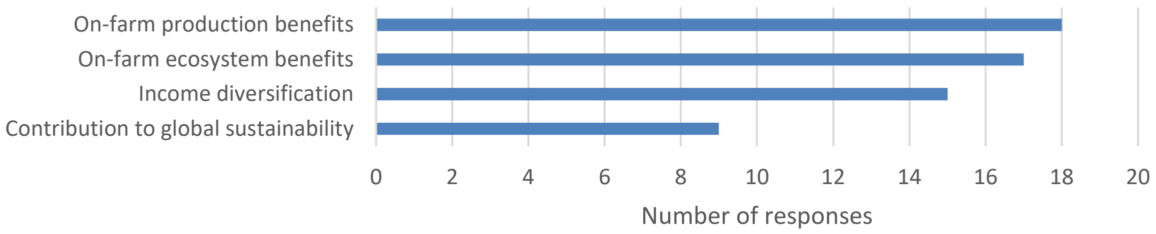

Figure 30. Of those who answered 'interested' – main reasons (n = 18). Cumulative total exceeds total number of respondents (more than one response allowed).

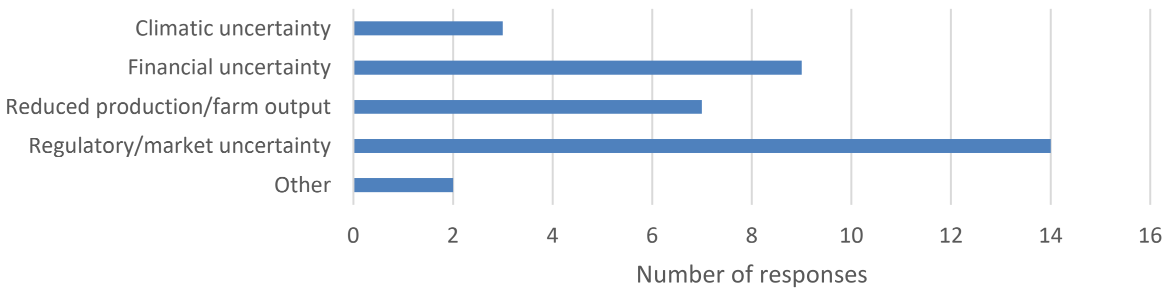

Figure 31. Of those who answered 'interested' – perceptions of risk (n = 18). Cumulative total exceeds total number of respondents (more than one response allowed).

Key points

Overall, the survey results indicate the following:

- Very few respondents are currently participating in either the carbon or biodiversity markets
- While respondents expressed considerable interest in engaging in carbon farming projects – and potentially also biodiversity benefit schemes – there was also a level of concern about possible risks
- Reported awareness and understanding of carbon farming schemes was higher than for biodiversity benefit programs
- Many of those who have sought information about carbon farming schemes were satisfied with the information they received; this was less evident for biodiversity benefit programs.
- Lack of information cited as a particular barrier for participant interest in engaging in biodiversity benefit schemes
- Perceptions of potential benefits, risks and sources of information were similar for both carbon and biodiversity markets
- Climate was considered by only a few respondents as a potential risk when engaging in carbon or biodiversity markets

Next steps

Information from the survey will be used in future components of the project, including developing targeted decision-support (MS7, MS9b), interview questions for the case studies (MS9a) and stakeholder engagement (MS12).

Appendix A: Survey Questions

DCAP3 project - Survey Questions

Locality:		LGA:
River basin:		Regional NRM group:
Demographics & farming background		
1.	Gender	☐ Male ☐ Female ☐ Other/prefer not to disclose
2.	Are you a key decision-maker for this property/enterprise?	☐ No ☐ Yes
3.	In which decade were you born?	☐ 2000-2009 ☐ 1990-1999 ☐ 1980-1989 ☐ 1970-1979 ☐ 1960-1969 ☐ 1950-1959 ☐ 1940-1949 ☐ Before 1940
4.	What is the land tenure of your property?	☐ Freehold ☐ Leasehold
5.	How would you describe yourself in relation to your agricultural enterprise?	☐ Owner operator ☐ Share farmer ☐ Employee ☐ Partner in a family farming business ☐ Other (Please specify: ______________________________)
6.	How long have you been farming your current property?	☐ More than 25 years ☐ 10-25 years ☐ 5-10 years ☐ Less than 5 years

7.	How long have you been involved in agriculture as a producer?	☐ More than 25 years ☐ 10-25 years ☐ 5-10 years ☐ Less than 5 years
8.	What commodities do you farm? (Please tick any that apply)	☐ Beef ☐ Cotton ☐ Sugarcane ☐ Dairy ☐ Grains ☐ Horticulture (Please specify: ________________________) ☐ Pork ☐ Poultry (for eggs or meat) ☐ Sheep (for wool or meat) ☐ Other (Please specify: _____________________________)
9.	Which industry bodies are you associated with?	☐ Agforce ☐ GRDC ☐ MLA ☐ Hort Innovations ☐ QFF ☐ Cotton Australia ☐ Canegrowers Australia ☐ East Aus Milk ☐ Growcom NGIQ ☐ Australian Feed Lotters Assoc ☐ Other / local grower group (Please specify: _____________________________)
CARBON CREDIT SCHEMES		
10.	Are you aware of carbon farming programs?	☐ Yes – please continue to Question 11 ☐ No – if you would like to learn more, please see the information provided here [link] and continue to Question 23.
11.	How would you rate your awareness and understanding of carbon farming programs and/or carbon markets?	Use a 5-point Likert scale (1. 'Not well-informed' to 3. 'Moderately informed' to 5. 'Well-informed')

12.	What have been your sources of information about carbon farming credit programs? (Please tick any that apply)	☐ Agricultural industry communications ☐ Webinars ☐ Google (or similar) ☐ Television/radio ☐ Newspapers ☐ Agricultural shows/field days ☐ Neighbors & other local farmers ☐ Carbon consultants or other expert advisors ☐ Banks and other financial advisors ☐ Agricultural suppliers ☐ Landcare ☐ Other (Please specify: ______________________________)
13.	Is your business participating in a carbon farming credit program? (i.e., Does your farming business have a registered project earning ACCUs?)	☐ No – please continue to Question 14 ☐ Yes – please continue to Question 19
14a.	Have you sought specific advice for your property/enterprise about carbon farming credit schemes? (Please tick any that apply)	☐ No ☐ Yes – from a government agency ☐ Yes – from a financial advisor ☐ Yes – from a carbon consultant
14b.	If yes, how satisfied were you with this advice?	Use a 5-point Likert scale (1. 'Not satisfied' to 5. 'Satisfied') Comment: ____ ____ ____
15.	How interested are you in undertaking a registered carbon farming project?	☐ Not interested – please go to Question 16 ☐ Interested – please go to Question 17
16.	You answered 'not interested' in response to Question 15. Please indicate the main reasons for your response. (Please tick those that apply, then continue to Question 23)	☐ Lack of information ☐ Financial constraints ☐ Financial uncertainty ☐ Time/capacity constraints ☐ Climatic uncertainty ☐ Regulatory / market uncertainty ☐ Concern about impacts on farm production output ☐ Other (Please specify: ______________________________)
17.	You answered 'interested' in response to Question 15. Please indicate what you consider to be the potential benefits of entering into a carbon farming project (Please tick those that apply)	☐ Income diversification ☐ Contribution to global sustainability ☐ On-farm ecosystem benefits ☐ On-farm production benefits ☐ Other - please specify: ______________________________

18.	You answered ‘interested’ in response to Question 15. Please also indicate what you consider to be the potential risks of entering into a carbon farming payment program (Please tick those that apply, then continue to Question 23)	☐ Financial uncertainty ☐ Climatic uncertainty ☐ Reduced production/farm output ☐ Regulatory/market uncertainty ☐ Other - please specify: ______________________________ ____ ____
19.	You answered ‘yes’ to Question 13. Please indicate the carbon farming credit program you are involved in, the length of your contract and the date (or year) you entered into the contract.	Name of Program: _____________________________________ Length of contract (years): _______________________________ Signed up (date): _______________________________________
20.	Please indicate the reason(s) you signed up to the program. (Please tick those that apply)	☐ Income diversification ☐ Contribution to global sustainability ☐ On-farm ecosystem benefits ☐ On-farm production benefits ☐ Future proofing of market access for business ☐ Other (Please specify: ______________________________)
21.	In your view, has the program benefited your farming business? (Please tick those that apply)	☐ Yes – future-proofing market access for our business ☐ Yes – it is providing an additional income stream ☐ Yes – I feel that my farming business is more sustainable ☐ Yes – I feel that my farm is more resilient to climate risk ☐ Yes – other (Please specify): ________________________ ____ ____ ☐ No – the program has not provided financial benefit to my farming enterprise ☐ No – the program has not provided on ground benefit on my farm ☐ No – other (Please specify): ________________________ ____ ____
22.	Would you be interested in providing further information about your experience? (Please provide your contact details, then continue to Question 23)	Name: ____ Email: ____ Mobile: ____
BIODIVERSITY CREDIT AND ENVIRONMENTAL STEWARDSHIP MARKETS		
23.	Are you aware of biodiversity or environmental stewardship payment/credit programs?	☐ Yes – please continue to Question 24 ☐ No – if you would like to learn more, please see the information provided here [link]

24.	How would you rate your awareness and understanding of biodiversity or environmental stewardship credit programs?	☐ Use a 5-point Likert scale (1. 'Not well-informed' to 3. 'Moderately informed' to 5. 'Well-informed')
25.	What have been your sources of information about biodiversity or environmental stewardship credit programs? (Please tick any that apply)	☐ Agricultural industry communications ☐ Webinars ☐ Google (or similar) ☐ Television/radio ☐ Newspapers ☐ Agricultural shows/field days ☐ Neighbors & other local farmers ☐ Consultants ☐ Banks and other financial advisors ☐ Agricultural suppliers ☐ Landcare / NRM Groups ☐ Other (Please specify: ______________________________)
26.	Are you involved in a biodiversity or environmental stewardship credit program or similar?	☐ No – please continue to Question 27 ☐ Yes – please continue to Question 32
27.	Have you sought specific advice for your property/enterprise about biodiversity or environmental stewardship credit programs or similar? (Please tick any that apply)	☐ No ☐ Yes – from a government agency ☐ Yes – from a financial advisor ☐ Yes – from a private contractor ☐ Yes – other (Please specify): ________________________- ____ ____
28.	How interested are you in becoming involved in a biodiversity or environmental stewardship credit program or similar?	☐ Not interested – please go to Question 29 ☐ Interested – please go to Question 30
29.	You answered 'not interested' in response to Question 28. Please indicate the main reasons for your response. (Please tick those that apply and then continue to the end of the questionnaire)	☐ Lack of information ☐ Financial constraints ☐ Financial uncertainty ☐ Time/capacity constraints ☐ Climatic uncertainty ☐ Regulatory / market uncertainty ☐ Concern about impacts on farm production output ☐ Other – please specify: ______________________________ ____

30.	You answered 'interested' in response to Question 28. Please indicate what you consider to be the potential benefits of entering into a biodiversity or environmental stewardship payment contract (Please tick those that apply)	☐ Income diversification ☐ Contribution to global sustainability ☐ On-farm ecosystem benefits ☐ On-farm production benefits ☐ Other - please specify: ____________________ ______________________________ ______________________________
31.	You answered 'interested' in response to Question 28. Please also indicate what you consider to be the potential risks of entering into a biodiversity or environmental stewardship payment contract (Please tick those that apply and then continue to the end of the questionnaire)	☐ Financial uncertainty ☐ Climatic uncertainty ☐ Reduced production/farm output ☐ Regulatory/market uncertainty ☐ Other - please specify: ____________________ ______________________________ ______________________________
32.	You answered 'yes' to Question 26. Please indicate the biodiversity or environmental stewardship credit program you are involved in, the length of your contract and the date (or year) you entered into the contract.	Name of Program: ____________________ Length of contract (years): ____________________ Signed up (date): ____________________
33.	Please indicate the reason(s) you signed up to the program. (Please tick those that apply)	☐ Market access ☐ Income diversification ☐ Contribution to global sustainability ☐ On-farm ecosystem benefits ☐ On-farm production benefits ☐ Other (Please specify: ____________________)
34.	In your view, has the program benefited your farming business? (Please tick those that apply)	☐ Yes - future proofing market access for our business ☐ Yes – it is providing an additional income stream ☐ Yes – I feel that my farming business is more sustainable ☐ Yes – I feel that my farm is more resilient to climate risk ☐ Yes – other (Please specify): ____________________ ______________________________ ______________________________ ☐ No – the program has not provided financial benefit to my farming enterprise ☐ No – the program has not provided on ground benefit on my farm ☐ No – other (Please specify): ____________________ ______________________________ ______________________________
35.	Would you be interested in providing further information about your experience? (Please provide your contact details)	Name: ____________________ Email: ____________________ Mobile: ____________________