

*Carbon Storage and Trading  
through Farm Forestry:  
A Survey of Farmers in  
Tasmania*

**Executive Summary**

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# *Carbon Storage and Trading through Farm Forestry: A Survey of Farmers in Tasmania*

Rural Development Services exists to enhance individual and organisational capacity in rural and regional Australia.

We do this by partnering agriculture, aquaculture and fisheries organisations in research, development and training.

We specialise in industry development, industry research, rural social research, sustainable business development and people development.

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## Foreword

The survey and report was conducted by Rural Development Services for Private Forests Tasmania (PFT) as part of a project entitled “*Carbon Plantations – Extending R&D to best management practices for carbon sequestration, wood production and new investment opportunities on private land in Tasmania.*”

The results of the survey are illuminating. They will assist Private Forests Tasmania to develop an informed Tool Kit to assist farmers to better understand, engage with and make more informed decisions about the potential involvement of their farms and farm forestry in the new carbon economy.

The report reveals for the first time the level of understanding, attitudes and motivations of Tasmanian farmers regarding carbon storage and trading issues in relation to farm forestry. It presents important insights into the knowledge gaps that farmers are interested in addressing and the values that drive their interest in participating in the carbon economy – and these values are not always as financially oriented as one might assume.

The analysis in this report will assist policy makers to understand the needs and perspectives of farmers about how they see the complex world of carbon production and storage.

This report will enable farmers to understand what their peers are saying about carbon issues and to know that they are not alone – whatever their involvement, interest or knowledge about carbon farming.

With all new enterprises or endeavours there is always inside shop talk, jargon and hype - and the new world of carbon accounting, storage and trading is replete with it. This report shows that farmers seek a pathway through the hype. They want clear information and a consistent national framework so they can make informed choices.

The subsequent carbon plantations materials produced for farmers will be targeted, clear and useful; a calm voice that does not add to the hawking and hollering that is so prevalent in carbon circles at the moment.

The carbon economy is a brave new world. International and national policies and regulations are emerging, changing and being revised on a daily basis. This report will ‘serve as a mark in time’ when the carbon economy was still ‘new’ and few people, institutions or government really knew its potential or how farmers can take advantage of its emerging opportunities.

What we know is that greenhouse gas emissions, carbon sequestration and storage issues are real and that one way or another, farmers will play a key role in a carbon-based future. (As I write, the Australian Government is seeking comment on its new draft Carbon Farming Initiative that will lead to farmers creating tradable carbon credits.)

We are pleased this report and the project outcomes will assist Tasmanian farmers to take advantage of emerging opportunities in the carbon economy.

Arthur Lyons  
Project Manager  
Carbon Plantations Project  
Private Forests Tasmania



## Acknowledgements

This report is part of the project “*Carbon Plantations – Extending R&D to best management practices for carbon sequestration, wood production and new investment opportunities on private land in Tasmania.*”

Private Forests Tasmania, under the Australian Government’s Forest Industries Climate Change Research Fund, received a grant of \$255,671 to undertake this 12 month project.

The grant funds have been matched by \$129,684 from the project consortia which consists of AFG-TreeSmart, AK Consultants, CSIRO Sustainable Agriculture Flagship, Livingston Natural Resource Services, Private Forests Tasmania (PFT) and Rural Development Services.

A steering group was established for the project that includes all the project partners.

Rural Development Services has been responsible for the production of this report and we would like to thank Arthur Lyons from PFT for his scrutiny of the survey (in its formative stages) and his insightful comments on drafts of this report.

Thanks also to Donna Lucas at Rural Development Services and Peter Taylor at PFT, both of whom assisted in the initial formation of the survey questions. Morag Anderson and Ray Murphy both assisted in applying the survey to Survey Monkey and its accessibility on-line.

Morag Anderson played a key role in editing the final report and designing the tables and figures.

Thanks go especially, and most importantly, to the farmers who took the time to complete the survey (either by themselves on the web or through phone and face to face interviews) – without the support and interest of farmers, this project would not have been possible.

Promotion of the survey was also assisted by the Tasmanian media, Private Forests Tasmania, NRM Regional bodies, Tamar NRM, DPIPW’s FarmPoint, and by the Tasmanian Farmers & Graziers Association through their efficient TFGA FastNews email newsletter.

This project is supported by funding from the Australian Government Department of Agriculture, Fisheries and Forestry under its Forest Industries Climate Change Research Fund program.



# Executive Summary

## 1 What this report is about

This report presents the findings of a survey of Tasmanian farmers regarding their awareness levels and attitudes about carbon storage and trading issues as they relate to farm forestry on their properties. The case study region for the survey was north east Tasmania (however additional landowners from outside the region completed an on-line survey which was available to any farmer in Tasmania.)

The survey was designed to provide information to help identify how farmers can participate effectively in the emerging carbon economy. The survey is seen as a key step in understanding what farmers know and don't know about carbon issues, what motivates them about the issues, and the types of assistance they need to get more involved.

## 2 Who this report is targeted at

The report is targeted at Private Forests Tasmania, industry (including agriculture and farm forestry), farm advisors, government policy makers and farmers that may already be involved in or considering their participation in carbon storage and trading opportunities through farm forestry. (The definition of farm forestry used for this project includes plantations, plantings of native vegetation for biodiversity and/or production benefits, and retained areas of native bush.)

## 3 Background

This report and the survey it is based upon is part of a larger project (*Carbon Plantations – Extending R&D to best management practices for carbon sequestration, wood production and new investment opportunities on private land in Tasmania*), the overall goal of which is to develop products and services for landholders to help them make more informed decisions about participating in carbon storage activities on their farms and to help prepare them for potential carbon trading opportunities.

The overall project is focused on four farms with dairy, beef, sheep and cropping enterprises. Farm greenhouse gas emissions, carbon sequestration and wood production options under future climate and economic conditions have been modelled at each farm as part of the wider project. The wider project will also develop a Carbon Plantations Toolkit that will be released at four field days in autumn 2011.

This is the first project in Tasmania aimed at empowering farmers to make informed choices about managing their greenhouse gas emissions through growing more trees on their farms and/or managing existing trees. Farmers may also be able to *trade* carbon in their plantation trees and/or sell plantation-grown wood products.

The Carbon Plantations Project is funded by a grant of over \$255,000 from the Australian Government through its Forest Industries Climate Change Research Fund and supplemented by contributions from project partners including: AFG-TreeSmart, AK Consultants, CSIRO Sustainable Agriculture Flagship, Livingston Natural Resource Services, Private Forests Tasmania and Rural Development Services.



## 4 Methods Used

Both quantitative and qualitative social research methods were used to generate data for this report. (See Appendix I for copy of the survey questions.)

Sixty four landholders in Tasmania completed the survey, either through phone interviews (30), on-line self-completion (30) or through four in-depth semi-structured interviews which were conducted with key landholders whose farms were established as demonstration properties for the overall project.

The surveys were conducted between the 9<sup>th</sup> of August and the 8<sup>th</sup> October 2010.

A reference was established for the overall project and this group provided comments on the formation of the survey questions which were developed by Rural Development Services in consultation with Private Forests Tasmania.

## 5 Key Findings

### 1. Farmer Awareness

#### 1.1 Carbon Storage and Emission Issues

Farmers have a medium to low level awareness of carbon storage and greenhouse gas emissions issues on their farms. 81% of farmers rated their awareness level as medium to very low, with only 19% rating their understanding as high or very high.

Farmers have a good understanding of two major sources of greenhouse gas emissions on their farms (livestock and energy use) but have less awareness of the full range of the sources of greenhouse gas emissions on their properties (e.g. soils, fertiliser).

Farmers are divided about whether they believe they are net emitters or storers of greenhouse gas emissions on their farms:

- 34% of farmers surveyed believe they are a net emitter
- 26% believe their emissions are about neutral
- 16% believe they are a net storer
- 23% are unsure of their net emissions.

#### 1.2 Level of Engagement of Farmers in Carbon Farming

Only 36% of farmers stated that carbon storage and trading is a regular topic of discussion with their family, fellow farmers or farm business advisors.

While farmers are aware of carbon and greenhouse gas related issues in general, there has not been a deep level of engagement with the issues as yet. Farmers see the issue as a low farm management priority at the moment.

Uncertainties about future carbon markets and trading schemes and the low price of carbon, as well as the current financial challenges facing many commodity based farmers in Tasmania, were given as major contributing factors to the current low level of farmer engagement in the issue.



### **1.3 Level of Interest of Farmers**

Although the level of farmer engagement is low, there is a high level of interest from farmers in learning more about the carbon economy: 83% responded that they had a medium to very high interest in learning more about carbon farming.

Only 17% of respondents said they had a low or very low interest in learning more.

## **2. Attitudes and Motivations**

### **2.1 Greenhouse Gas Reduction Activities on Farm**

Nearly half (49%) of farmers surveyed have taken actions to reduce greenhouse gas emissions or store carbon on their farms.

Major actions taken in order of highest take-up include: establishment of shelterbelts (including riparian zone re-vegetation), soil management, and changed agricultural management practices.

### **2.2 Financial Motivations**

The major reasons why farmers have taken actions to reduce their greenhouse gas emissions or store carbon on their farms (in order of preference) include:

- financial gain
- social responsibility
- biodiversity benefits
- personal interest.

Financial gain was nominated by 88% as a key motivator for farmers to get involved in carbon storage and trading through farm forestry. However, it should be noted, that uptake of actions involving carbon or greenhouse gas emissions are only occurring when they align with perceived good farming management practices.

63% of farmers indicated they would participate because of the overall benefits to the environment and 50% said they would most likely participate in carbon storage and trading because of the overall benefits to society.

71% of farmers said they were likely to consider farm forestry as a means to offset their emissions in the future.

### **2.3 Social responsibility**

78% of farmers agreed that they have a social responsibility as landholders to take action on their farms to reduce greenhouse gas emissions.

Farmers communicated that while they feel a strong sense of social responsibility to reduce farm emissions, the wider community should assist them to do this and not penalise them for being productive farmers.

### **2.4 Disincentives**

Farmers indicated that cost (73%) and lack of financial gain (59%) were the main reasons they would *not* consider offsetting their greenhouse gas emissions in the future.



Some farmers noted that a disincentive to adopt farm forestry as a means to reduce greenhouse gas emissions was because they had high value agricultural land and they did not want to see this land go into plantations that would be less economically productive for them.

## **2.5 Brand Recognition**

Half of those surveyed (50%) agreed that there would be brand recognition or marketing advantages for them in the future through carbon storage activities.

Many of those who disagreed about the benefits of carbon branding commented that they believe Tasmanian farmers will not benefit because they sell into bulk commodity markets and that if there were any market advantages in the future it will only be the supermarkets that will gain any advantage.

## **2.6 Carbon Brokers**

Forty two per cent of farmers said employing a carbon broker was likely in the future; 25% said it was highly unlikely and 32% said they didn't know.

Those that did not want to employ a carbon broker gave reasons such as the need to understand carbon trading themselves before considering paying someone else; paying unnecessary fees; and a general scepticism of 'middle men' taking profits out of a 'tight' system.

## **2.7 Need for Emission Trading Scheme Rules**

Approximately two thirds of farmers (67%) agreed that there was no benefit for them in reducing or offsetting their farm greenhouse gas emissions through farm forestry until they knew the rules of an emissions trading scheme. Approximately one third (35%) strongly agreed with this statement and just under one third of farmers disagreed.

Farmers want to know the rules of a trading scheme and the current lack of rules was cited as a frustration and a major reason for them not participating in carbon storage through farm forestry.

Farmers are also concerned that whatever rules and frameworks are developed, they need to be practical, provide options and not penalise farmers.

## **2.8 Attitude and Motivation Analysis**

Farmers are strongly motivated by financial considerations; however they are also very strongly influenced by social and environmental motivations.

Financial considerations can be seen as a prime driver in farmer decision making, but these considerations are strongly influenced by social and environmental motivations as well.

# **3. Information and Training Needs**

## **3.1 Current Information**

54% responded that current information about carbon storing and trading for farmers is inadequate. Only 9% responded that current information is adequate. 36% replied that they did not know.

The main reasons given for the inadequacy of current information and materials is:



- current information is not geared to the needs of farmers
- current information is confusing and too complex
- the information farmers need is not available.

### 3.2 Training Needs

Farmers were asked through which means they would prefer to learn more about carbon trading and storage issues. First preference means were identified as:

- written information (67%)
- one on one advice (43%)
- newsletters (24%)
- field days (19%)
- DVD (16%)
- web (15%).

### 3.3 Current and Future Sources on Information

The top sources of information farmers currently use or would consider using in the future were all very closely ranked (receiving first preference from nearly 50% of respondents in each category). They are:

- newsletters
- media
- *Tasmanian Country* (a Tasmania-wide rural newspaper)
- farm advisors and consultants.

These first preferences were followed by the Tasmanian Farmers and Graziers Association (TFGA) (35%), web (33%), government (25%), industry (22%) and Private Forests Tasmania (18%).

### 3.4 Types of Information

When given a choice of four types of information that would assist them to participate in carbon storage and trading through farm forestry in the future, farmers indicated a first preference for financial advice (51%).

This was followed by information about greenhouse gas emission and storage calculators (43%); information about carbon brokers and offset schemes (27%); and farm forestry management advice (23%).

### 3.5 Level of Engagement of Farmers

Only 36% of farmers agreed that carbon storage and trading was a regular topic of discussion with their family, fellow farmers or farm business advisors.

While farmers were *aware* of carbon and greenhouse gas related issues in general, there has been not a deep level of engagement with the issues as yet. Farmers see the issue as a low farm management priority at the moment.



Uncertainties about future carbon markets and trading schemes and the low price of carbon, as well as the current financial challenges facing many commodity based farmers in Tasmania were given as major contributing factors to the current low level of farmer engagement in the issue.

### **3.6 Level of interest of Farmers in the Carbon Economy**

Although the level of farmer engagement is currently low, there is a *high* level of interest by farmers in learning more about the carbon economy, with 83% responding that they had a high, very high or medium interest in learning more about carbon farming.

Only 17% of respondents said they had a low or very low interest in learning more.

This section shows that farmers have not yet fully engaged in carbon economy, that it is not a regular topic of conversation between them, but they are eager to learn more.

## **4. Future Opportunities for Farmers**

### **4.1 Opportunities to Increase the Engagement of Farmers in the Carbon Economy**

Farmers believe the main opportunity government and industry have to best motivate them to get more involved in farm forestry carbon storage projects is for clearer economic benefits to be detailed to them. This was indicated by 79% of farmers.

Farmers want to know, clearly and simply, without hyperbole and salesmanship, what are the costs and economic benefits of participating in carbon storage and trading through farm forestry.

Farmers also want better information than is now available as current information is seen to be complex, incomplete, not geared to the needs of Tasmanian farmers and not scientifically based.

Tax incentives were noted by 43% of respondents as an effective way for government and industry to motivate farmers to get more involved in carbon storage and trading.

### **4.2 Future Intentions: for Established Farm Forestry Areas on Farm**

Shelter/windbreaks were nominated as the most likely use of their property's farm forestry areas in the future (by 55% of farmers). This was followed by biodiversity and wood production.

Significantly, carbon storage was only identified by 21% of respondents as the major future use of their existing farm forestry areas.

However nearly half (46%) of respondents said it was *likely* that they would establish farm forestry areas on their properties in the next five years for carbon storage and trading.

### **4.3 Future Intentions: Carbon Rights**

More than half of farmers (57%) said they would consider selling their carbon rights in the future. 20% of farmers said they would not sell their rights; nearly a quarter said they didn't know if they would or not.

Farmers commented that there is still a great deal of uncertainty about how future carbon trading systems will work, and this was preventing them from making a firm predication about the future intentions.



#### **4.4 Future Intentions: Plantations and Investments Sources**

Farmers are willing to use their own resources to invest in a carbon based future. 55% of landowners indicated that they would consider using their own financial resources to develop new plantations on their farms for carbon storage and trading; 29% did not think they would and 16% indicated that as yet they did not know their intentions.

#### **4.5 Future Intentions: Offering Land to External Investors**

When asked whether they would offer their land (e.g. lease) to external investors to develop new plantations on their farms for carbon storage and trading, only 31% agreed with this statement.

60% of farmers said they would not offer their land to external investors (including 22% who strongly stated they would not do this). 9% said they were unsure.

Discussion on this point revealed that many farmers were wary of external investors on their land, given the recent collapse of several major 'managed investment schemes' for plantations. Some farmers also commented that they felt there was more profit in the long term if they invested in and managed plantations with their own resources.

#### **4.6 Future Intentions: Farm Forestry for Carbon Storage and Trading**

Nearly half (46%) of respondents said it was likely that they would establish farm forestry areas on their properties in the next five years for carbon storage and trading. 37% said that did not think this was likely. 17% of farmers were unsure.

61% of those surveyed indicated that they would choose planting trees with their own resources as their first preference in the future.

The second first preference identified by farmers was to sell carbon rights from their existing forests (52%). Planting trees with external resources was a third first preference for 46% of farmers.

Making land available for others to establish and manage plantations was given the lowest preference, with only a third of farmers indicating this as a first preference.

### **5. Barriers and Risks**

#### **5.1 Barriers to participating in Carbon Storage and Trading**

The major barriers to farmers participating in carbon storage and trading highlighted by farmers include:

- lack of clear government policy or consistent framework (60%)
- financial return is too low or uncertain (58%)
- I don't have enough information about it (40%)
- lack of a carbon price (32%)
- I don't understand what it's all about (30%)

The lack of a clear government policy (including lack of a carbon price) and low or uncertain financial return are the main reasons given for farmers not getting involved in carbon storage and trading through farm forestry.



Lack of appropriate information and difficulty understanding current information is also a major barrier.

The issue of not being able to factor in carbon sequestered in native forests growing before 1990 (because of the Kyoto Protocol) was highlighted as a barrier to engagement and a disincentive for Tasmanian farmers to get involved in carbon storage and trading.

## 5.2 Risk Perception

The majority of farmers (53%) believe carbon storage and trading through farm forestry is a risky activity. 28% said it was not a risky activity and 19% said they didn't know.

Reasons given for the belief that it is risky activity mirror the major barriers noted in 5.1 above, especially the lack of a clear government policy and the fact that the financial return is currently too low or uncertain.

## 5.3 Emissions Rule Changes and Liabilities

70% of farmers indicated that one of the main reasons they have *not* got involved in carbon storage and trading through farm forestry is because they are concerned about future emission trading rule changes and the possibility that their offset operations could become a liability in the future.

Only 19% of farmers disagreed with the statement and the rest didn't know or thought the question was not applicable.

The level of uncertainty about future emission trading rule changes is a major risk-oriented barrier preventing farmers from fully engaging in the carbon economy.

Farmers do not want to invest in schemes where the rules are not yet fixed and the 'goal posts' appear to be changing on a regular basis.

# 6. Climate Change

## 6.1 Farmer Belief in Local Climate Change

60% of farmers surveyed believe that global climate change is affecting their local climate, 22% indicated they thought global climate change was not having an effect and 17% said they didn't know.

Two thirds of farmers believe 'climate variations' are affecting their property due to global climate change. Other effects identified by farmers include increased temperatures, changing management techniques and that climate change is 'creating unknowns' in how to manage their property.

19% of farmers said they did not know how climate change was affecting their property.

Observations on local climate change made by farmers were diverse: some commented that the changes were subtle and incremental; some made specific observations such as drier winters; some communicated that if there were local changes they were part of natural cycles; others were adamant that there were no local effects due to climate change on their properties.



## 6.2 Greenhouse Gas Emissions and Global Climate Change

66% of farmers believe 'greenhouse gas emissions due to human activity are responsible for global climate change.' Only 14% disagreed with this statement.

21% of farmers said they didn't know if greenhouse gas emissions due to human activity were responsible for global climate change.

78% of farmers said they believe that climate change is a serious problem. 15% disagreed with this statement and 7% said they didn't know.

When farmers were asked if they were happy with their understanding of climate change issues, 69% said they were happy, 29% said they were not and 2% were unsure.

## 6.3 Government and Industry Actions to Address Climate Change

71% of farmers believe that government is *not* doing enough to address climate change issues, only 22% believe government is doing enough, 7% say they don't know.

60% of farmers believe industry is *not* doing enough to address climate change issues, 26% believe industry is doing enough, 14% say they don't know.

A number of farmers are worried that future government action on carbon trading will not take into consideration farmer concerns and they strongly believe industry needs to be proactive to protect its interests. Farmers want encouragement and incentives to participate in carbon storage and trading - they do not want to be penalised or victimised.

## Recommendations

### 1. Increasing Awareness Level of Farmers

To increase the awareness level of farmers about carbon storage and trading opportunities through farm forestry, it is recommended that extension materials should be developed that include:

- clear and concise written information about the carbon economy as it relates to farmers in Tasmania, especially carbon storage and trading opportunities
- clear written information about the potential economic benefits and options for farmers
- independent one-on-one advice be available to farmers
- targeted newsletters on carbon storage and trading issues for farmers
- field days at key landholder sites

### 2. Understanding of Emissions and Storage Options on Farms

Learning materials should be developed for Tasmanian farmers that clearly explain the major sources of greenhouse gas emissions on farms and the options farmers have for storing carbon and reducing their emissions through farm forestry.

Farmer-friendly greenhouse gas emission and storage calculators (especially with regard to farm forestry) should be trialled with Tasmanian farmers so that they can quickly and easily get a general idea of their farm's net emissions and storage options.



### **3. Increasing the Engagement of Farmers**

To increase the engagement of farmers in the carbon economy, it is recommended that the economic benefits of participating in carbon and storage be highlighted clearly in extension materials.

Clear and concise cost benefit analysis information regarding farmer participation in carbon storage and trading activities through farm forestry should be developed so as to avoid creating unrealistic expectations about the financial benefits of the carbon economy.

### **4. Understanding Economic, Social and Environmental Motivations of Farmer**

To increase the uptake of carbon farming programs, policy makers should take into consideration that although farmers are highly motivated by financial considerations, they also have very strong social and environmental motivations that significantly influence their decision making.

Policy makers should not consider the financial aspects of policies and programs related to carbon trading and storage in isolation, but they should also consider the social and environmental consequences of any policies for farmers (including incentives and disincentives).

Farmers are more likely to participate in a program if there are integrated financial, environmental and social benefits. Their current uptake only occurs when it aligns with what they believe to be good farm management practice. For them, good farm management practice is directed towards sustainable production, as without this they will not have a profitable business, which in turn, has social implications for them, their families and their communities.

### **5. Carbon Branding**

'Carbon Branding' of farm forestry products associated with carbon storage and trading should be pursued with great care so as to ensure that farmers benefit from any such programs and that branding does not create unnecessary administration, auditing and regulatory burdens for them.

The net beneficiary of any carbon branding or codes of practice should be analysed as there is concern amongst farmers that any potential benefits of branding and marketing will not flow through to them but will be only realised by those above them in the value chain (e.g. supermarkets).

### **6. National Carbon Policy Framework**

The lack of government policy for a national carbon framework and price for carbon is a strong disincentive for farmers to get involved in carbon storage and trading through farm forestry.

A transparent and consistent national carbon trading and storage policy should be developed and farmers should have input into this framework to ensure greater uptake by their industry.

If a national price for carbon is established, it must be a competitive price or there will be limited uptake of farmers.



## 7. Carbon Incentives for Pre-1990 Vegetation

Farmers are concerned that they cannot get carbon credits or related incentives for areas of native vegetation on their properties that were established pre-1990 (as currently the Kyoto Protocol exempts these areas from carbon accounting practices).

Government and industry should jointly investigate how Tasmanian farmers can receive carbon credits or incentives for managing areas of native vegetation on their properties that were established prior to 1990.

## 8. Climate Change

To increase farmer understanding and engagement with climate change preparedness and mitigation, there should be clear information and advice provided by government **and** industry to Tasmanian farmers regarding global climate change issues, the possible local effects of climate change, mitigation options and ways farmers can prepare for different climate scenarios.

