



COMMUNITY FARM PRACTICE CHANGE TO MANAGE WIND EROSION IN THE AVON RIVER BASIN PROGRAM 2009-2011

KNOWLEDGE, SKILLS AND ENGAGEMENT REPORT 2010
SOIL CONSERVATION INCENTIVE PROGRAM (SCIP)
ROUNDS 1 AND 2, 2010

- ▶ BASELINE LAND MANAGER SURVEY
- ▶ FARM PRACTICE SURVEY
- ▶ ASSISTING FARMER DECISION MAKING

DAN FERGUSON, PROGRAM MANAGER, SUSTAINABLE AGRICULTURE, WHEATBELT NRM

MICHELLE KIDMAN, MONITORING AND EVALUATION COORINDATOR, WHEATBELT NRM

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Version 1.1

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1 PURPOSE OF THE REPORT

The purpose of this report is to record the outcomes of the social surveys conducted through Rounds 1 and 2 of the Soil Conservation Incentive Program (SCIP). The survey's included:

- Baseline Land Manager survey - which captured information about levels of knowledge, skills and current practices of land managers participating in Rounds 1 and 2 of SCIP.
- Farm Practices Survey – which capture information from land managers attending events organised by SCIP participants, to determine levels of voluntary adoption of recommended farm practices.
- Assisting Farmer Decision Making Event Evaluation – captured expectations, experiences and level of knowledge gained from project delivery staff who attended in the Farm Practice Change Model training session prior to commencement of the program. This has been included in Appendix 3.

2 SUMMARY OF FINDINGS

Thirty-five of 45 funding recipients through the Soil Conservation Incentives Program (SCIP) returned surveys outlining their current knowledge and skills in relation to wind erosion management. The key findings of these surveys include:

- Two thirds of farmers surveyed suffered noticeable soil loss from paddocks at least once a year.
- 71% of farmers surveyed considered wind erosion as a high priority for management while soil fertility (54%), secondary salinity (46%) and soil acidity (43%) were also high priority soil quality issues.
- 55% of projects supported through the SCIP are to establish alley farm systems.
- Cost and time were main barriers to previously adopting the practice without the support of the SCIP.
- The availability of funding and potential for improvements to the farming systems were most regularly cited as reasons why the practice is being adopted now.
- 43% of respondents considered themselves to be well informed with some experience prior to undertaking the project.

A key component of the program is the passing on of knowledge and skills from the funding recipient to the surrounding community to maximize voluntary adoption of recommended practices. Surveys undertaken at three of these events revealed that:

- 100% of participants gained knowledge by participating in the event.
- 78% intend to learn more about the farm practice.
- 50% of the respondents intend to implement the practice over the next 1-3 years.
- 33% of respondents would adopt the practice over 51-150 ha of their farm.

3 ASSISTING FARMER DECISION MAKING

Four Local Governments were contracted to deliver sub-regional coordination and support land managers participation in the program using the principles of the *Farm Practice Change Model*.

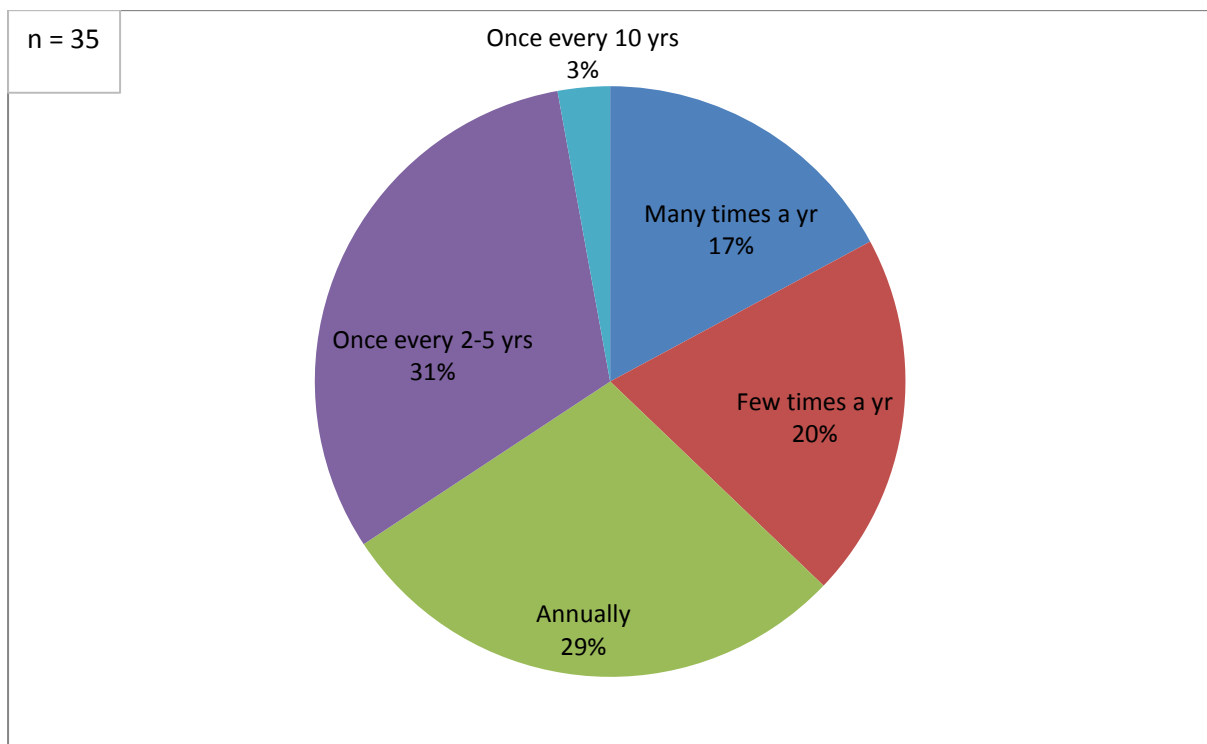
In preparation for the commencement of the Soil Conservation Incentive Program (SCIP), the Coordinators were provided with training to increase their levels of knowledge and skills in assisting farmer decision making. A training day was delivered to 20 participants on 18 and 19 November 2009, and 11 Event Evaluation Forms were returned. The results of the report are available in Appendix 4.

4 RESULTS OF THE BASELINE LAND MANAGER SURVEY

In 2009-10, 45 members of the Avon River Basin farming community were contracted to participate in Rounds 1 and 2 of SCIP, with 35(N) completing Baseline Land Manager Surveys returned during the Action Planning stage. Most surveys were completed with the assistance of Sub-regional Coordinators (NRMO's) although some farmers completed and submitted the survey unassisted. Survey questions are included in [Appendix 1](#). A map of the locations of the participating land managers is included in [Appendix 2](#).

4.1 FREQUENCY OF WIND EROSION

Figure 1: Frequency of Wind Erosion



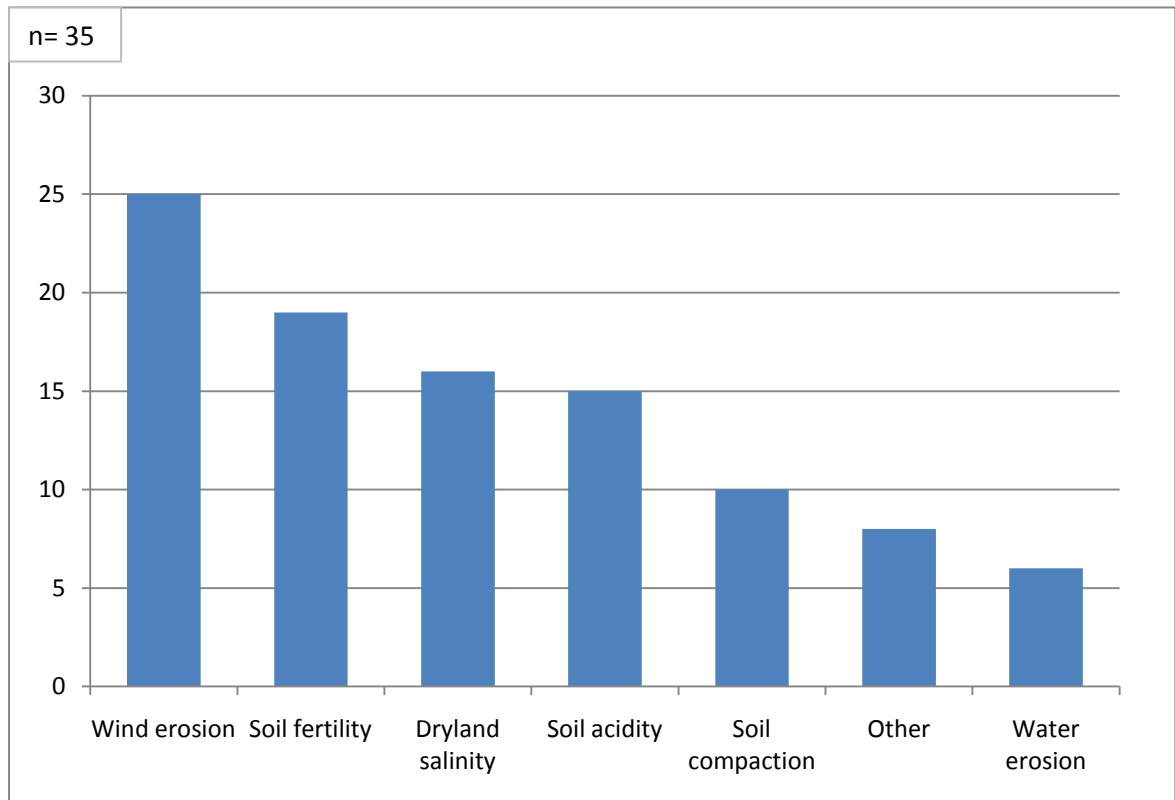
4.2 AREA (HA) AFFECTED

In total, respondents declared that 15 545 hectares of land is currently affected by soil loss through wind erosion. It should be noted that there was a 14% no response return rate to this question.

4.3 MANAGEMENT PRIORITIES

Land managers were asked to rate priorities for managing specified soil quality issues as either low, medium or high. The chart below identifies soil quality issues that were designated a high priority for management by survey respondents. The soil quality issues that farmers most regularly ranked as high priority were wind erosion (71%), soil fertility (54%), secondary salinity (46%) and soil acidity (43%).

Figure 2: Soil quality issues identified as high priority by survey respondents



Other priorities of land managers include:

- weed control
- non-wetting sands
- wind blowing sediment from salt lakes

4.4 MANAGEMENT PRACTICES

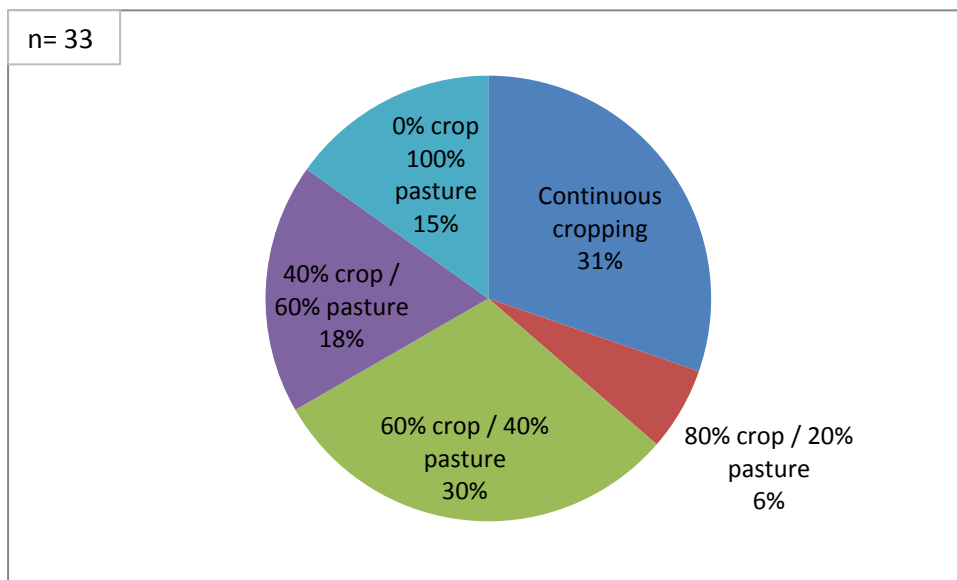
In total, 45 land managers are participating either individually or as groups in Rounds 1 and 2 of SCIP with on-ground works aimed at protecting a total area of 2 152 hectares from wind erosion. The projects undertaken fall into the following categories of current recommended practices to address wind erosion:

- Recommended cropping practices;
- Recommended grazing practices aimed at maintaining at least 40% groundcover;
- Integrating perennials, including trees into agricultural systems;
- Maintaining soil quality, soil amelioration and monitoring.

4.4.1 CURRENT PRACTICES

Respondents provided information on their project site history for the last five years. These were then categorized into the regularity of the cropping or grazing phase for the specified paddock. Continuous cropping was recorded as the farming practice for 31% of sites while a pasture phase occurred in at least one of the five years for 69% of sites.

Figure 3: Farm practice used at project site for the previous 5 years



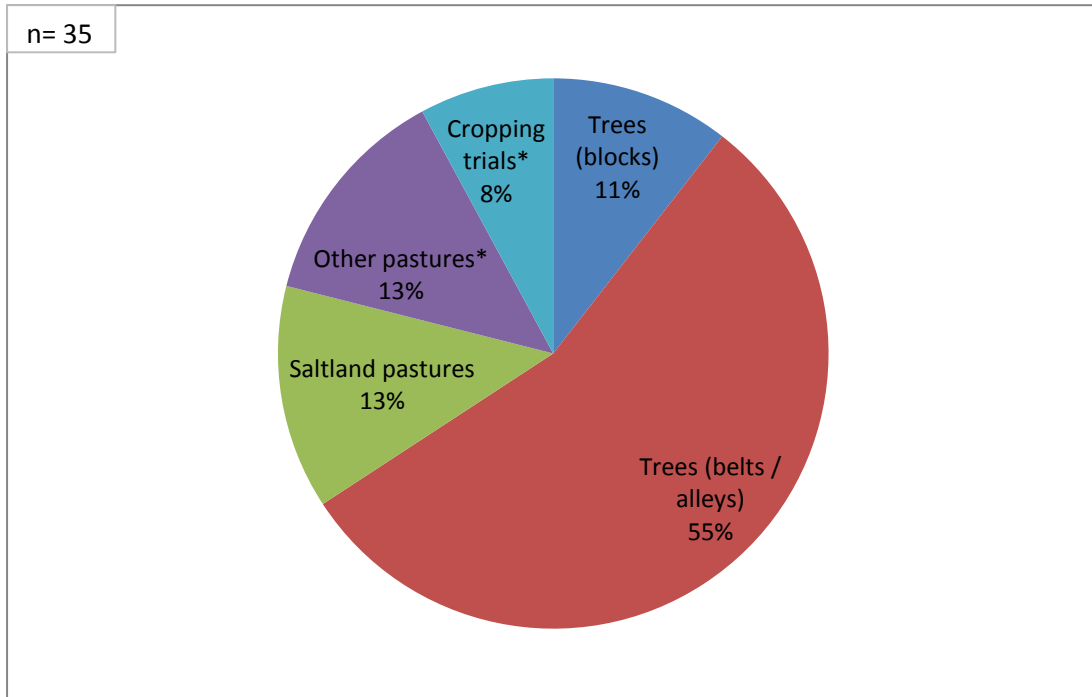
Information was gathered on specific cropping, grazing, perennials and soil treatments that farmers currently used at the site in order to assess change in practice as a result of participating in the Soil Conservation Incentive Program. Due to different interpretations of this question by surveyors many respondents provided information about practices that apply across their whole farm including those which don't relate to any anticipated change as a result of this program. While this information is of limited value in assessing change in farm practices as a result of this program it does provide a useful insight into farm practices including:

- All farmers surveyed practiced some form of no-till or minimum-till with stubble retention;
- Farmers with livestock predominately grazed stubbles and volunteer pastures with a variety of improved pastures including clovers, medics and serradella;
- Pastures stocking rates varied from 1.5 – 3 head / ha for unimproved systems up to 25 head / ha in shorter rotation, improved pastures systems;
- Lucerne, tagasaste and eucalypts were the most commonly identified perennials for managing wind erosion however numerous respondents had planted others on other less erodible soil types.

4.4.2 NEW PRACTICES

The program is working toward achieving increased adoption of recommended cropping practices, recommended grazing practices and the integration of perennials into farm systems that improve soil quality and minimize soil loss through wind erosion.

Figure 4: Project types being trialed or demonstrated as part of the Soil Conservation Incentives Program



*cropping trials include claying, disc seeding, brown manuring, cover cropping & weed management in stubble

*other grazing trials include establishment of rhagodia, seredellas and native perennial pastures

Respondents were also asked what they would like to implement in the future to help reduce wind erosion. While a large portion indicated that they would like to expand the project practice across a larger area of the farm, other responses included:

- reduce burning by capturing weed seed
- increased valley floor revegetation
- increased alley farming and belts
- reduce grazing pressure / improved grazing management and rotations
- increased conservation tillage to maximize cover
- more tagasaste
- increase soil organic carbon - improve soil structure
- planting east-west to shade weeds rather than N-S to decrease shading of crop
- spray topping
- tramline alley farming with no-till

4.5 BARRIERS TO ADOPTION

The majority of respondents identified the cost of implementing changes as the primary factor preventing them from not previously adopting the farm practice to be implemented through the SCIP. A lack of time was also identified as a major impediment.

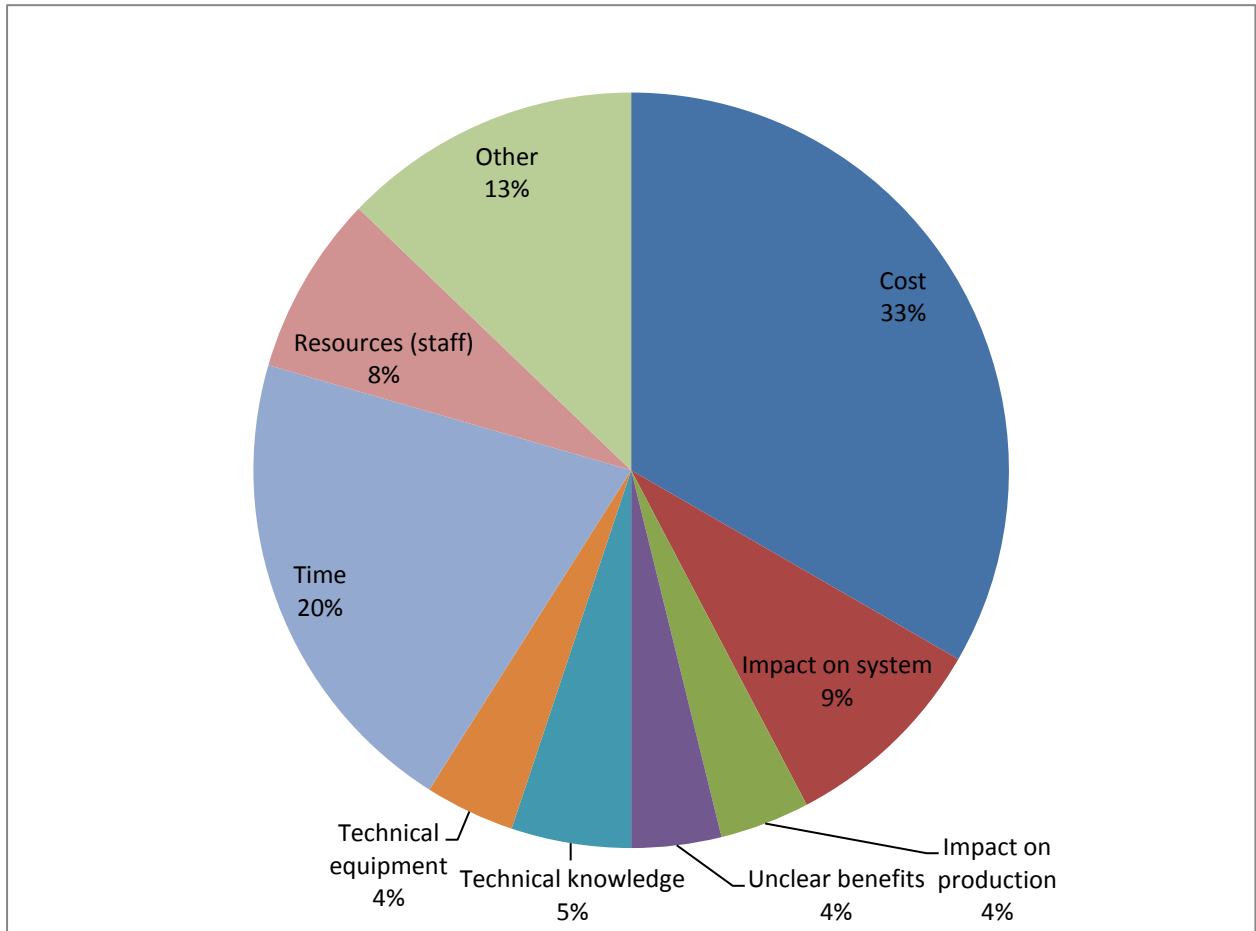


Figure 5: Percentage of responses for impediments to adopting new practices.

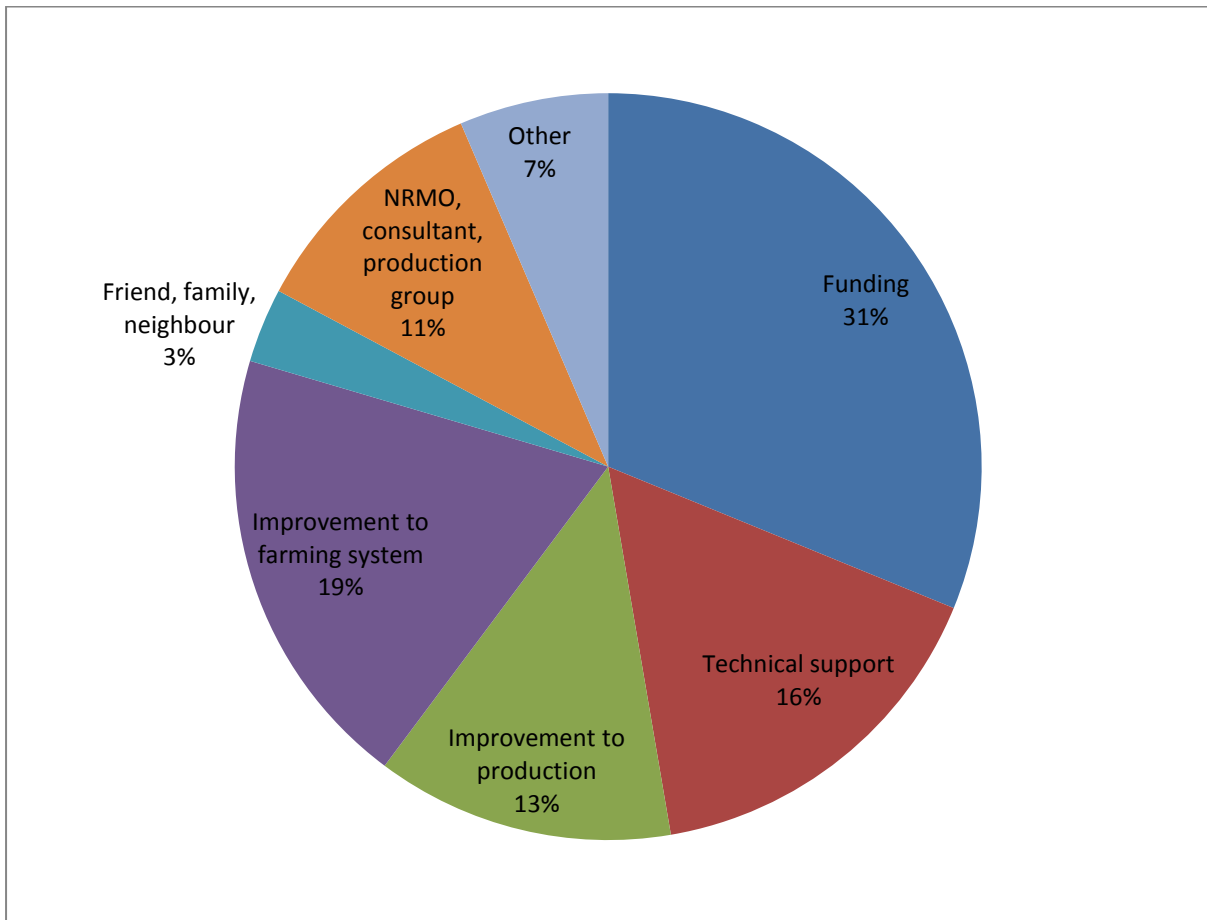
The third highest ranked reason was in the category of 'other', and respondents specified the following reasons:

- previous owner not interested
- pines & tag on previous farm - 28 parrots ringbarking
- family, social
- wanted fodder shrubs before, now doing creeklines
- rotation of farming practices
- Sheep in the past - had to fence sites
- Change over from research to working farm
- dry years
- Only recently acquired property

4.6 MOTIVATIONS

Over 30% of respondents indicated that the offer of funding was the primary motivator to become involved in trialing new practices through the SCIP program. Potential improvements to the farming system followed as the second major motivator, and the provision of technical support in implementing the new practices rated as the third top motivator. Only a small percentage of respondents identified that a neighbor, family member or friend was a contributing factor in motivating them to trial new practices.

Figure 2: Motivations to implement new practices at this time



Other reasons given for trailing new practices at this time included:

- General landcare reducing wind erosion
- Aesthetics
- Continuation of program started four years ago.
- Change of owner

4.7 KNOWLEDGE AND SKILLS

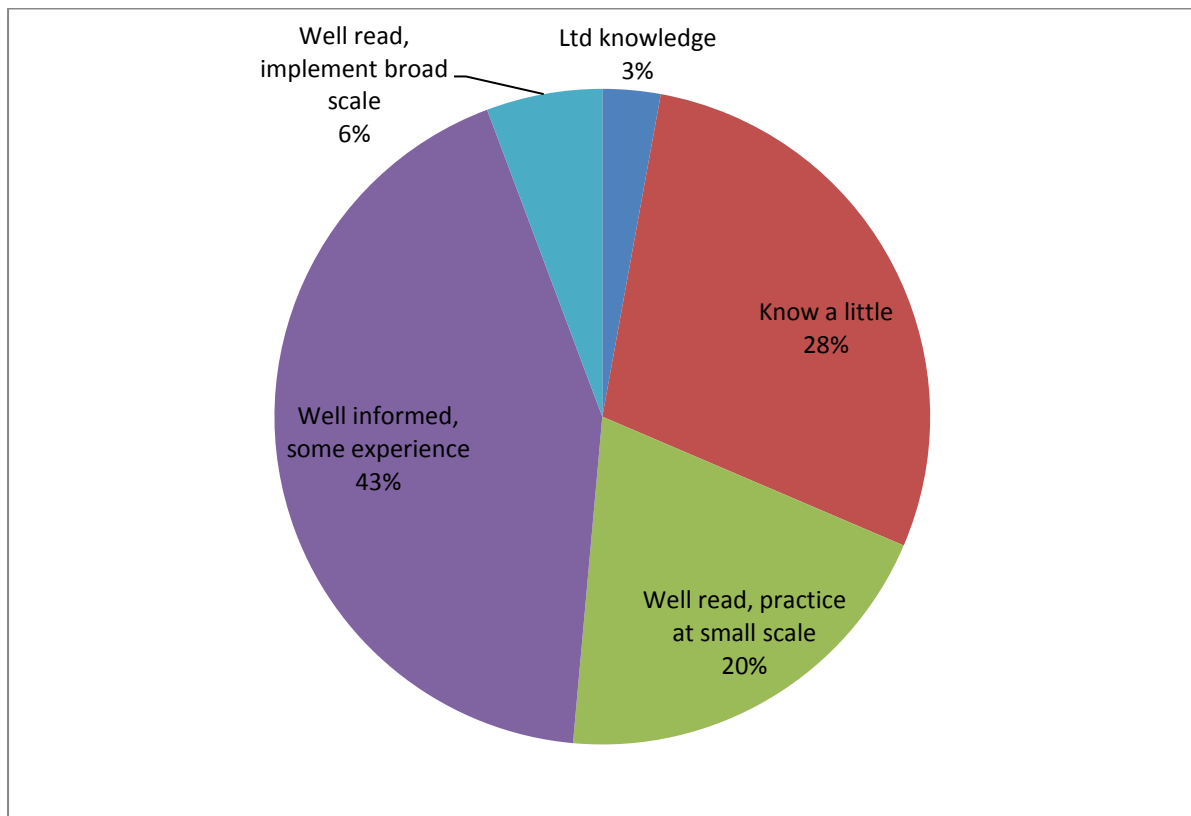
When asked how respondents would rate their current levels of knowledge and skills on the practices they were about to trial, over 40% held the belief that they were well informed and already had some experience in implementing new practices. In terms of the Farm Practice Change model, it could be concluded that these farmers have made the transition from the motivation phase to the adoption phase, and are likely to begin implementing new practices across a broader scale following assistance provided through SCIP. However, with funding and technical support as the major factor in motivating these farmers to participate in this project, it is unclear whether they would in fact voluntarily adopt these practices at a broader scale if funding and assistance were not offered to them in the future.

Almost 30% of respondents indicated that they currently had a limited amount of knowledge but are ready to learn more and to improve their skills in sustainable management practices. Participation in the SCIP program is designed to assist these land managers in making the transition from the 'exploration' phase to the 'adoption' phase.

Another 20% of respondents believed that they are well read on the subject they were about to trial, indicating good knowledge of the practices, and were ready to change their practices through participation of the project. These farmers too are making a firm transition to the adoption phase.

Figure 7 shows the response rate for all respondents' perceptions of their levels of knowledge and skills.

Figure 3: Rating of knowledge and skills

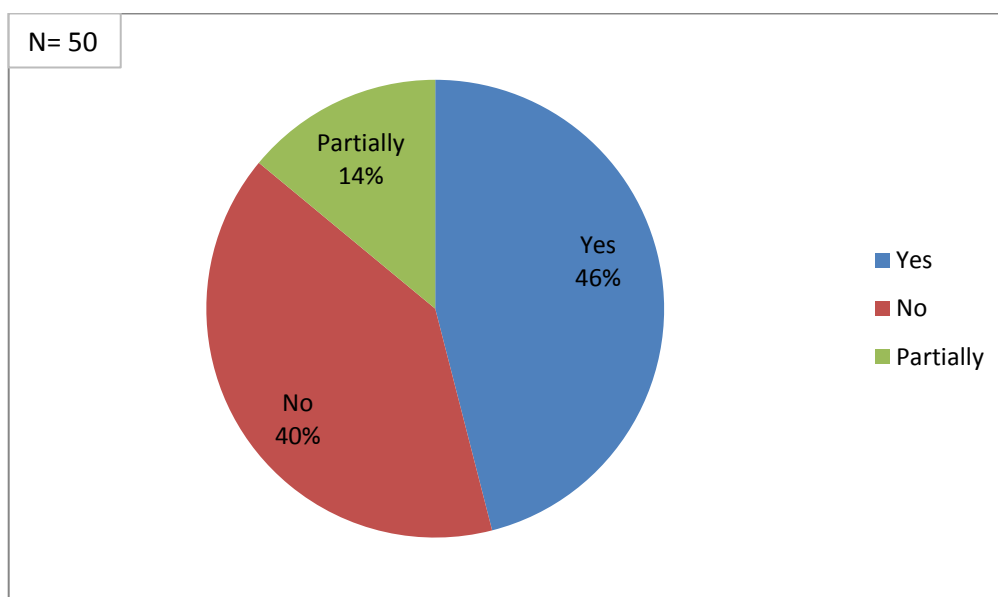


5 VOLUNTARY ADOPTION OF PRACTICES

Land Managers participating in the Soil Conservation Incentive Program (SCIP) are required to hold community engagement activities to inform the local and regional community about the methods, costs and benefits of adopting a new or alternative farm practice aimed at managing wind erosion. As part of the event attendees are surveyed to determine change in their knowledge and the potential for voluntary adoption of the practice being demonstrated. The survey consists of five short questions. To date six events have been conducted, however surveys were undertaken for only three of these. The bulk of events are due to be held in 2011.

Below are the combined results of three surveys completed in August 2010, one taken at the Haggerty's Field Day and one taken at the Syme's Claying Field Day and a Sandalwood Field Day at Bencubbin. 186 participants participated in the field days, and 50 (N) survey forms were returned.

1. Do you currently use the practice demonstrated at the workshop?



Respondent's comments about the reasons for their decision included:

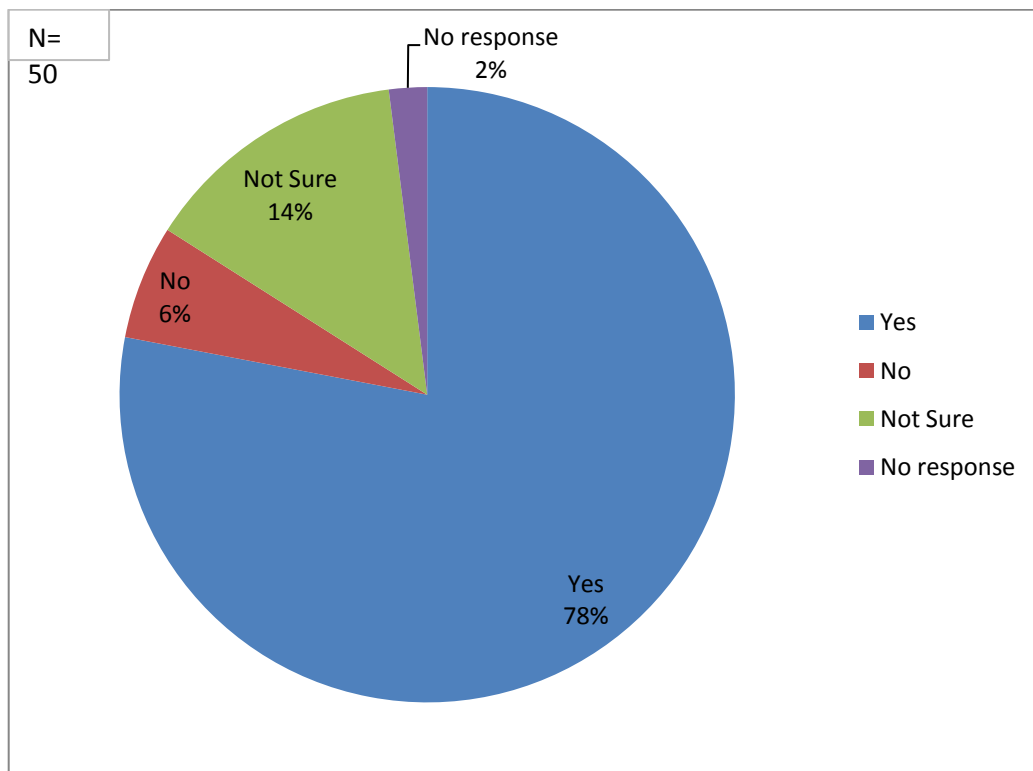
Yes	No	Partially
<ul style="list-style-type: none"> • Stop the sand blowing away also to supplement income have done for a few years • Good investment and carbon and opportunity grazing • Wind Erosion and salinity control • dad's 20 year dream • Oil mallee used in alley farming system. • For salt migration and fodder production • Gutless sand • Non wetting • To improve soil structure, yields and capital value • Contractor advice 	<ul style="list-style-type: none"> • Still investigating viability • Still learning the subject • No available land • Time and money constraints • Not yet but looking at them • We don't run stock. Most of our vulnerable soils have trees planted on them. • No information known • Expense • Don't have a non wetting problem 	<ul style="list-style-type: none"> • Still building up areas of hosts

2. Have you gained knowledge from today's field day?

100% of participants felt that they had gained knowledge by participating in the event. Comments on the reason for their decision included:

- In diversity of hosts, soil types
- Good value and info
- Very informative
- Geoff Woodall and Bob Huxley
- Yellow sands are good?
- Understanding that there is a difference between stable carbon and organic matter. The importance of perennials (C4) and the balance with annuals (C3).
- Value of a perennial system in broad scale cropping and increased use of mycorrhizal fungi.
- Nature of biological fertiliser.
- Extremely Informative
- Because the info is correct, relevant and important - It reinforced some points and learn lots of new stuff.
- Regarding perennial pastures.
- Very much
- Great. Christine gives me hope that we can farm profitably and sustainably.
- Very positive and diverse information. Fantastic seminar. We need to change the way we think!!
- Saw spading
- We have problem on our lease block
- Learnt a lot

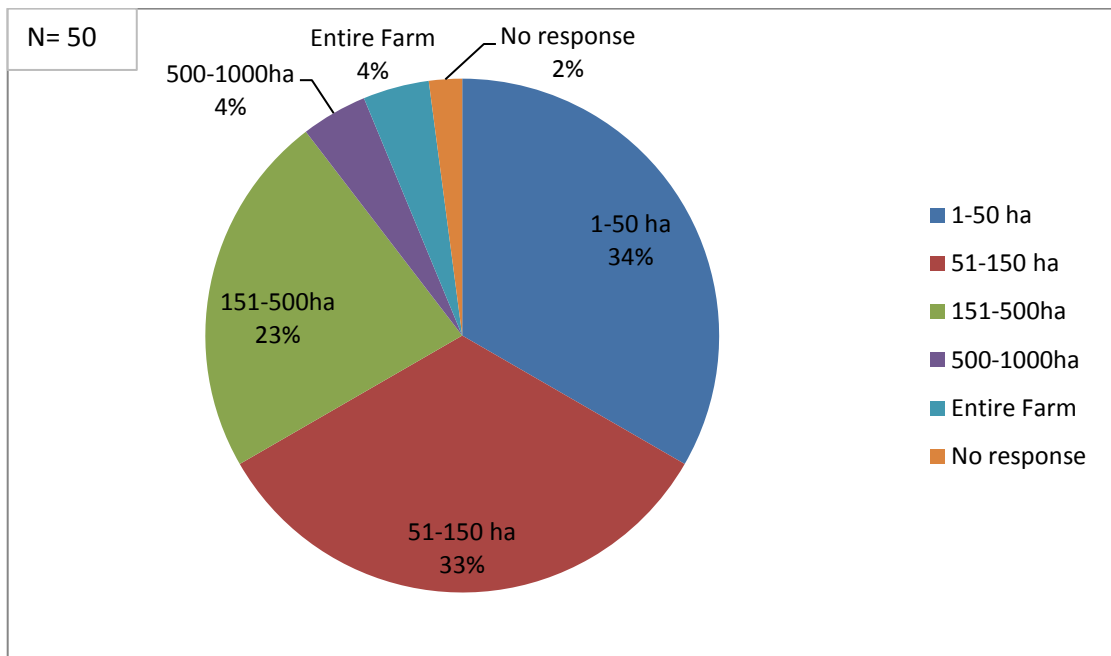
3. Do you intend to find out more about the practice?



Respondent's comments about the reasons for their decision included:

Yes	No	Not sure
<ul style="list-style-type: none"> • Can never learn too much • Always • Looks good for poor soil • Through Landcare officer • I will look at them in the next few months • I would like to plant some rhagodia. • I want lots more information on perennials and soil biology 	<ul style="list-style-type: none"> • Already have necessary information on oil mallees. 	<ul style="list-style-type: none"> • Not sure what the linkage is between trees and soil biology relevant to cereal crops. • May look at perennial grasses rather than these options • More interested in mouldboard as we have clay close to the surface underneath non wetting sand

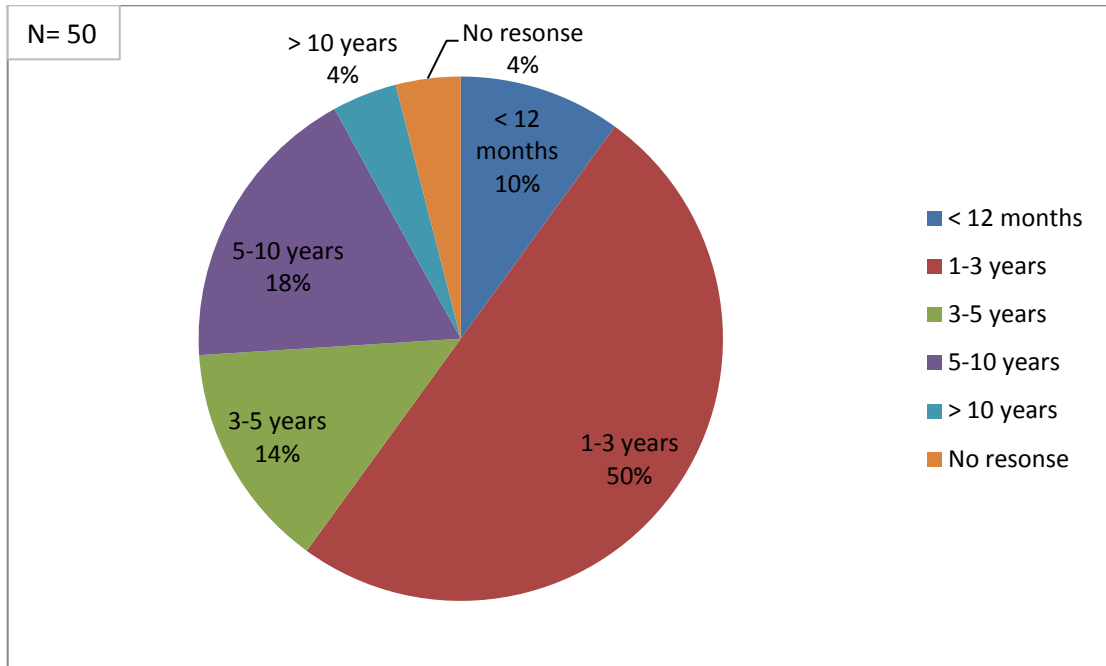
4. If you were to implement this practice what area would it cover?



Respondent's comments about the reasons for their decision included:

1-50ha	51-150ha	151-500ha	500-1000ha	Entire Farm
<ul style="list-style-type: none"> • Build up slowly • Small steps due to costs • Not too sure of area coverage. • Trial to start with 	<ul style="list-style-type: none"> • In strips on the contour • It's the area that needs it 	<ul style="list-style-type: none"> • Probably more and also in established host areas • Already established 20 ha. Want to increase. (Haggerty Field Day) • 370 ha (Haggerty Field Day) 	Unproductive cropping country (Sandalwood Field Day)	<ul style="list-style-type: none"> • Would like to do 20,000ha (Sandalwood Field Day) • Alleys (Haggerty Field Day)

5. Over what time frame would you implement this practice?



Respondent's comments about the reasons for their decision included:

< 12 months	1-3 years	3-5 years	5-10 years	>10 years
<ul style="list-style-type: none"> Interesting information to take home and discuss further. 	<ul style="list-style-type: none"> It would depend on funding for the trees. We would like to run these plants on the contours of our land and crop in between. Limited time on lease 	<ul style="list-style-type: none"> Too costly to do it quicker 	<ul style="list-style-type: none"> Will continue until time expires me Ongoing It would depend on funding for the trees. 	-

APPENDIX 1: BASELINE LAND MANAGER SURVEY 2010

1. How often do you experience significant wind erosion on your property? (noticeable soil loss from paddocks)
Tick one box only

- a. Many times a year
- b. A few times a year
- c. Annually
- d. Once every 2-5 years
- e. Once every 10 years

2. What is the estimated area (in hectares) of your property that is affected by these significant wind erosion events?

3. Rate the following in terms of priority for management on your property:

Rate each option either high, medium or low

- a. _____ Wind Erosion
- b. _____ Secondary salinity
- c. _____ Soil Acidity
- d. _____ Soil Compaction
- e. _____ Water Logging
- f. _____ Water Erosion
- g. _____ Soil Fertility
- h. _____ Other (please specify): _____

4. What management practice do you currently use on the project area?

a. **Paddock History for last 5 years: (e.g. permanent crop, grazed etc)**

Only complete areas related to your project trial

b. Cropping:

Describe current practices used for:

- i. Seeding: _____

- ii. Harvesting: _____

- iii. Between Harvest & Seeding: _____

c. Grazing:

- i. Describe current pasture species & management at site: _____

ii. Stock type, density & frequency of grazing: _____

d. Perennials:

i. Describe the current perennial system at site: _____

e. Soil Management:

i. Describe your current soil management techniques: _____

5. What new practices are you trialing in this project?

6. What new practices would you like to adopt across the whole farm to address wind erosion?

7. What has prevented you from implementing these new practices in the past?

Tick one or more boxes

- a. Cost of implementing change
- b. Impact on farming system
- c. Impact on production
- d. Unclear benefits to farming system
- e. Technical knowledge
- f. Technical equipment (machinery)
- g. Time
- h. Resources (staff)
- i. Other (*please specify*): _____

8. Why have you decided to implement this trial now?

Tick one or more boxes

- a. Funding offered
- b. Technical support offered
- c. Potential improvements to production
- d. Potential improvements to farming system
- e. Friend, Family member, Neighbour suggested it
- f. NRMO, Consultant, Production Group involvement
- g. Other (*please specify*): _____

9. How would you rate your knowledge and skills on the topic you are about to trial?

Tick one box only

- a. Limited knowledge, no experience implementing on ground
- b. Know a little but would like to find out more & learn how to implement new practices
- c. Well read and would like to try new practices at small scale in my farming system
- d. Well informed and some experience implementing new practices
- e. Well read and have sound experience, would like to implement broad scale

APPENDIX 2: FARM PRACTICES TO MANAGE WIND EROSION

(Farmer name) has received funding from Wheatbelt NRM to trial (farm practice) on his property. Wheatbelt NRM is funded by the Australian Government's *Caring for Our Country* program and is required to show that other farmers are interested in or willing to trial the (farm practices) demonstrated at today's (course/workshop/field day).

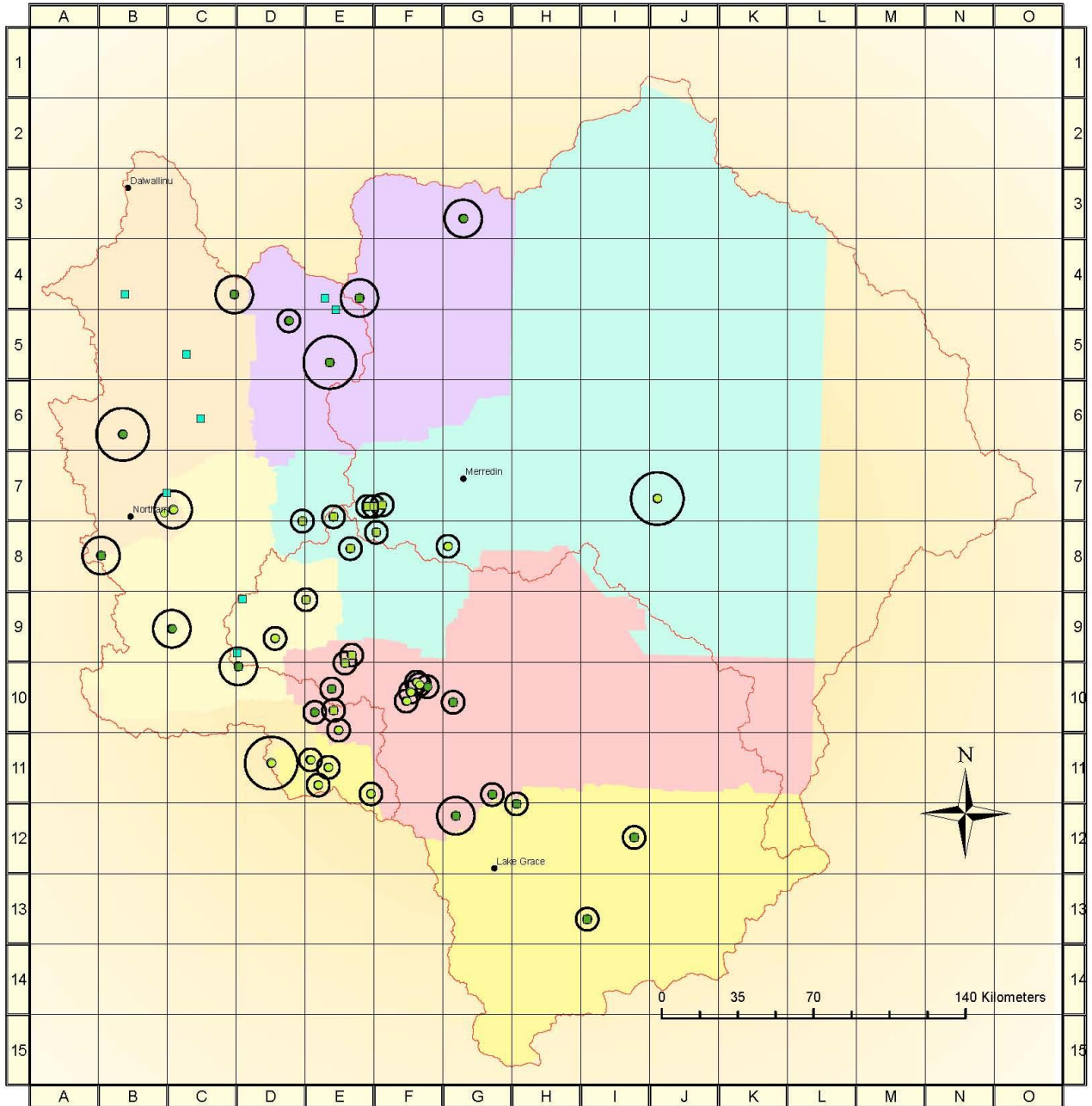
In our commitment to secure funds for the wheatbelt community in the future, and to provide better programs, we kindly ask you to take the time to answer the questions below.

Session / Activity:

Date:

Evaluation Question:	Response: <i>Please tick one box only</i>	Please tell us 'why' or 'why not':
1. Do you currently use (farm practice covered at workshop)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Partially	
2. Have you gained knowledge from today's workshop/activity/field walk?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Partially	
3. Do you intend to find out more about this management practice?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not sure	
4. If you were to implement this practice what area would it cover?	<input type="checkbox"/> 1-50ha <input type="checkbox"/> 51-150ha <input type="checkbox"/> 151-500ha <input type="checkbox"/> 500-1000ha <input type="checkbox"/> Entire farm	
5. Over what time frame would you implement this practice?	<input type="checkbox"/> Less than 12 months <input type="checkbox"/> 1-3 years <input type="checkbox"/> 3-5 years <input type="checkbox"/> 5-10years	

Soil Conservation Incentive Program Site locations



Legend

- | | | |
|---|----------------------|-----------|
| ● Round 1 sites - individuals | ○ 10-30 participants | ■ RoeROC |
| ● Round 1 sites - groups | ○ 31-50 participants | ■ SE ARB |
| ■ Round 2 sites - individuals | ○ 51+ participants | ■ WEROC |
| ■ Round 2 sites - groups | | ■ NEWROC |
| ■ Round 2 (surplus seedling allocation) | | ■ SEAVROC |
| | | ■ NW ARB |



Event Evaluation Results Report

Session / Activity:	Assisting Farmer Decision Making	Program:	Supporting Farm Practice Change to Manage Wind Erosion in the ARB
Date:	18/19 November 2009	No. of Participants:	20
Facilitator:	Nigel and Cam	No. of Forms Returned:	11

Please circle 'Yes' or 'No' to the following statements	Response (% Respondents)			Comments
	Yes	No	Partially	
1. The session / activity covered what I expected it to cover.	73	27		<ul style="list-style-type: none"> I had no expectations Unsure
2. The session / activity's objectives were clearly stated.	73	18	9	<ul style="list-style-type: none"> Needed more warning about timing of meeting Unsure what to expect
3. The session / activity's objectives were achieved.	82	9	9	
4. The session / activity content was interesting.	91		9	
5. The facilitator was effective.	91		9	<ul style="list-style-type: none"> Nigel needs to stand at front of room Very well presented
6. The venue or location was suitable for this session / activity.	100			

Event Evaluation Results Report

Please circle 'Yes' or 'No' to the following statements	Response (% Respondents)			Comments
	Yes	No	Partially	
7. The level of interactivity was appropriate for this session / activity.	100			<ul style="list-style-type: none"> • Lots of Discussion • Absolutely
8. The supporting resource materials supplied (or referred to) are relevant and useful to me.	54.5	45.5		<ul style="list-style-type: none"> • Would like power points • Hopefully it will be emailed out afterwards • there were no supporting materials • Didn't get any, looking forward to seeing the action plan • No resource materials supplied • Session file would have been handy
9. The session / activity content was directly related to the skills and knowledge I needed.	91	9		
10. I believe that I can now work independently in this area.	45.5	9	45.5	<ul style="list-style-type: none"> • Lots of group work is required • Still need to work with others • Maybe • With assistance from organisations

Event Evaluation Results Report

Please circle 'Yes' or 'No' to the following statements	Response (% Respondents)			Comments
	Yes	No	Partially	
				<ul style="list-style-type: none"> • Collaboration is vital rather than working independently • Need pointers in future
11. The duration of the session / activity was right for me.	91		9	<ul style="list-style-type: none"> • Session on day two was slow at times • Perfect
12. The pace of the session / activity was right for me.	73	18	9	<ul style="list-style-type: none"> • Prefer more central • Quicker pace . Brainstorm better
13. The level of difficulty of the content was right for me.	91		9	

Event Evaluation Results Report

What aspects of the session / activity did you gain the most benefit?	Is there anything else you would like the session / activity to have covered?	Have you any suggestions about how this session / activity could be improved?	Further Comments: (Please write your name and contact details here should you wish to be contacted about your feedback)
Discussion and group work Nice and quick - didn't drag on topics	Integration of three areas Next step in project	Case studies/stories from other areas Shared discussion and what worked / didn't work	
All	Would have been good to have had print outs of the slides during the session to be able to refer to	Whiteboard markers that work for the presenters to use.	
Understand the three stages of moving towards adoption of new farming practices	No	No	Fantastic session - practical, highly relevant, nicely interactive, fun
Going through the stages of the model and what each stage involved. And then going through it on day two.			Very good workshop. Lots to think about and process. Thanks Dan.
Learning about the 'farm practice change' concept / model that Dan often refers to.	No.	Well organised - thanks Dan.	
Theory, 'how to' approach	People's contact details How we should / can we work together.		

Event Evaluation Results Report

What aspects of the session / activity did you gain the most benefit?	Is there anything else you would like the session / activity to have covered?	Have you any suggestions about how this session / activity could be improved?	Further Comments: (Please write your name and contact details here should you wish to be contacted about your feedback)
Meeting some of the partners.	Contact details of partners. Know how we are going to be working together.	Name tags need to have where people are from.	
Group sessions	Possible SCP format - gaps for next rounds.	Explore individuals mode of engaging the farmers - results and experience.	Future resources - links to web sites etc would be handy for enforcing concepts and self learning. Follow up process next year.
Working through the exercises with people who think (and interpret) separate to me.	No, I thought it covered what I needed well.	Not at all.	
First phase - engaging farmer - motivation. From a forestry perspective, this phase had the most impact for me - informative.			
Networking and discussion	Better generalised questioning technique	Yes	