The initial hydrological effect of deep drains at Wallatin Creek: (2006-2008)

Richard J. George Dr
Department of Agriculture and Food

Grant Stainer

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The impact of the ‘Profitable perennials’ project on adoption: An evaluation

Jamie Bowyer and Rebecca Heath

April 2009
Resource Management Technical Report 338

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We thank the many farmers who willingly gave up their time to be interviewed. Hopefully we will do justice to their contributions, which will be used to help improve delivery of future projects. A big thankyou also to community project coordinators Heather Adams, Claudia Hadlow, Leonie McMahon and Jessica van der Waag for their assistance.

Jenny Crisp provided invaluable advice and technical guidance in the preparation of this report, which was much appreciated.
SUMMARY

This evaluation provides information for guiding the development and design of future projects encouraging the adoption of perennial pastures. We wanted to find out how the ‘Profitable perennials’ project conducted by the Department of Agriculture and Food on the south coast had influenced participants’ adoption of perennial pastures. In particular we wanted to know what role a financial grant and technical support had played.

We interviewed 17 landholders, using a semi-structured format, across three Strategic Catchments in August and September 2007.

The grant played a key role in involving farmers in the project and quickly leading them to trialling perennial pastures. It also reduced the risk of implementing perennial pastures, particularly by reducing the capital outlay required for establishment.

The technical support provided farmers access to a broad information network that allowed them to learn quickly about perennial pastures.

In general, involvement in the project has accelerated interviewees along the adoption path. The degree of impact depended largely on the stage of adoption farmers were at when the project started. Farmers in the very early stage of adoption with little awareness and knowledge generally learnt more than those who had already adopted perennials and had more skills and experience. Involvement in the project has motivated farmers, increased awareness of perennial pastures, increased skills and allowed some to make a decision to continue trialling perennials. The impact of the project on long-term adoption was difficult to assess because most participants had only just established pastures, or were yet to do so.
1. INTRODUCTION

1.1 The evaluation

This report documents an interview-based evaluation conducted to identify the impact of the ‘Profitable perennials’ project delivered on the south coast of Western Australia by the Department of Agriculture and Food. The purpose of the evaluation was to collect data from farmers to inform the development and design of future projects seeking long-term adoption of perennial pastures.

We wanted to know what impact there had been on farmers’ capacity to adopt, and subsequent adoption of, perennial pastures. In particular the evaluation client wanted to know what role the financial grant and the technical support played in influencing adoption. Bennett’s Hierarchy (Bennett 1975, Bennett and Rockwell 1995) was used to frame the evaluation questions and interviews conducted with farmers.

The following key evaluation question was developed to guide the collection of data:

- What impact/influence has the ‘Profitable perennials’ project had on participants with regard to adoption or planned adoption of perennial pastures?
  - To what extent have participating farmers adopted/not adopted perennial pastures and why?
  - How did the grant and support contribute to project impact?

Although this was primarily a formative evaluation, there was a summative element to the investigation because findings can be used for reporting the project outcomes to project funders and other stakeholders.

This was an external evaluation conducted by the ‘Extension and Communication’ project team from DAFWA’s Natural Resource Management (NRM) division.

1.2 Background

The clearing of native bush for agriculture has created a range of on-site and off-site natural resource management issues. Federal and state governments have funded a number of programs over many years to address these issues. Programs such as the National Action Plan for Salinity and Water Quality, the Natural Heritage Trust and the National Landcare Program have encouraged landholders to adopt more sustainable practices to mitigate or reverse the impacts of agriculture on the natural resource base. Landholders have also contributed substantial resources to addressing these issues.

In most cases the adoption of these practices has been slow and not at a scale that would impact on land degradation. There are a number of reasons for this but overlying themes are that conservation practices generally do not provide enough relative advantage in economic terms, and that there are difficulties in trialling and observing the impact of these practices (Barr and Cary 2000, Pannell 2006).

From 2002 the Federal Government applied a regional delivery model to deliver environmental objectives. Regional NRM groups were supported to engage the community and develop regional strategies and investment plans to better target allocation of resources. At the time of this report South Coast Natural Resource Management Incorporated (South Coast NRM Inc.) was the group guiding investment and delivery on the south coast of Western Australia.
South Coast NRM Inc. prioritised investment through the selection of Strategic Catchments. These were selected mainly on the basis of catchments that were impacting on high-value assets such as rivers, estuaries, wetlands and waterways. Strategic Catchments received significant funds to aid the adoption of sustainable land management practices such as biodiversity revegetation, remnant vegetation fencing, stock crossings, riparian revegetation and fencing, earthworks for water control, soil health work and perennial pastures.

1.3 The ‘profitable perennials’ project

South Coast NRM Inc. funded the ‘Profitable perennials’ project to facilitate adoption of perennial pastures. The project consisted of a number of elements including research, the ‘buying’ of environmental outcomes through a grant, and technical and general support to assist farmers in Strategic Catchments to establish perennial pastures. Oyster Harbour, Bremer River and Lake Warden were the first catchments selected, with the project starting in these areas during 2006. We note that in some of these catchments, considerable work on perennial farming systems had already been carried out. It was envisaged that the project would build upon this.

The project was delivered slightly differently in each Strategic Catchment. In the Oyster Harbour catchment, a defined sub-catchment was selected and a coordinator funded to support delivery of the project. Information meetings were held to explain the project and planning meetings were conducted to help farmers identify preferred perennial options and select paddocks. Farmers were then provided with funding and a high level of support to get perennial pastures established. In the Bremer River catchment all farmers were eligible to access the grant and support, through a project coordinator, to establish perennial pastures. A similar process of information and planning meetings, followed by support, was provided. In the Lake Warden catchment a survey was conducted before the project began to capture farmers’ proposed plans to establish a range of sustainable land management practices, including perennial pastures. A grant was made available to farmers and technical support was provided through project coordinators and DAFWA, but not to the same level as the other two Strategic Catchments. Catchment or sub-catchment-based planning meetings were not held in Lake Warden.
2. METHODOLOGY

2.1 Data collection method

Semi-structured interviews were chosen as the method of collecting data for the evaluation in order to get an in-depth understanding of the influence of the project on each interviewee. Interviews were semi-structured to ensure the same basic lines of inquiry were followed with each person and to make data collection more efficient (Patton 2002). An interview guide was developed (Appendix 1) and pilot interviews were conducted with two landholders from the Bremer River catchment in August 2007 to standardise the technique between the two interviewers and refine the questions. The remaining interviews were conducted during August and September 2007. Interviews were recorded digitally and/or via handwritten notes.

2.2 Sampling approach

A combined ‘purposeful sampling’ technique (Patton 2002) was used to select landholders to be interviewed. Bremer River, Oyster Harbour and Lake Warden Strategic Catchments were selected for the evaluation study area (see Figure 1). As the ‘Profitable perennials’ project started first in these catchments there was a greater likelihood of project impact having occurred at the time of the evaluation. These Strategic Catchments also represented a geographical spread across the south coast with Oyster Harbour in the west, Bremer River in the central area and Lake Warden in the east.

Lists of farmer participants were sourced from project coordinators and farmers were chosen randomly from these lists. Farmers were contacted by telephone and asked if they wished to take part, and appointments made to conduct the interview. A decision was made to interview approximately 20 farmers because time and resources were limited. A number of farmers were unavailable to be interviewed for various reasons.

Seventeen landholders were interviewed—six from Oyster Harbour, four from Bremer River and seven from Lake Warden.

2.3 Analysis

All interviews and handwritten notes were transcribed and read independently, and then re-read by the evaluation team. The data were analysed to identify patterns associated with themes from the initial evaluation focus and any emergent patterns and themes from the interviews (Patton 2002). Transcripts were imported into NVivo 7, a qualitative analysis software program (QSR International 2006), and coded according to themes and patterns. The data were summarised and interpreted by the team.

Because 100 per cent of the project participants were not interviewed, it is possible that not all viewpoints or ideas have been captured through this study. With this in mind, care should be taken if generalising the evaluation findings across the whole population of project participants.
Figure 1 Strategic Catchments selected for evaluation study area: Oyster Harbour, Bremer River and Lake Warden.
3. FINDINGS

3.1 Influence on farmer capacity to adopt

Interviewees have greater levels of awareness, knowledge and skills in relation to perennial pastures as a result of being involved in the project. However, the project has not had the same influence on all of the interviewees; farmers with less perennial pastures experience showed greater capacity development than those with more experience. The following points summarise the influence the project has had on farmer capacity.

1. Greater awareness of landscape processes that lead to degradation, and the perennial pasture options to address these and other production-related issues:
   ‘I have learnt a lot about nutrient loss, chemical loss and watertables through the first information meetings held to kick-start this project.’

2. Increased knowledge and understanding of perennials, including the role of perennials, their management and how they can be used on the farm:
   ‘Yeah, it was good. Actually had a meeting with XXXXX and XXXXX across the hill there and they put us on to different types of pastures that would suit.’

3. More confidence to include perennials as part of the farming system, as well as confidence to integrate them into the farm:
   ‘It’s looking good. It’s encouraging. We’ll probably do some more.’

4. Changed attitudes toward perennial pastures:
   ‘After getting this brilliant establishment and seeing the pasture I have now changed my attitude to kikuyu.’

5. Built skills in establishing/managing the pastures (for interviewees who had established perennials on their farm through the project). This was especially noticeable in participants who were new to perennial pastures.
   ‘It’s like everything you plant for the first time. You’ve really got to do it to find out.’

3.2 Influence on adoption of perennial pastures

Adoption of innovations generally happens in stages (Pannell 2006). A simple adoption pathway has been used to assess the influence the project had on the uptake of perennial pastures by interviewees. The stages of adoption considered here are:

i) no need for and not aware of perennial pastures;
ii) information gathering;
iii) trial evaluation; and
iv) adoption/non- adoption (Pannell 2006).
Involvement in the project has generally accelerated participants along the adoption pathway and was especially successful at motivating several participants to give perennials a try. However, this influence has depended to a certain extent on the stage of adoption interviewees were at when they came to the project. At the beginning, interviewees ranged from those with little awareness through to committed perennial pasture users.

**i) No need for and not aware of**

One farmer came to the project wanting to increase his year-round production on a grazing block but had little awareness or knowledge of perennial pastures. This farmer established his first perennials paddock through the project and indicated that, at the stage of the interview, he would plant more. Being involved in the project quickly moved him to the ‘trialling’ stage, and allowed him to develop skills at establishing perennial pastures and see first-hand results on his farm.

**ii) Information gatherer**

One farmer, at the commencement of the project, was gathering information to assess whether to give perennial pastures a go. He had some watertable issues and was re-introducing stock to the farm, and had been convinced through local farm group meetings to give lucerne a try. He established his first and second paddocks of perennial pastures through the project and said that he had seen enough to keep planting lucerne.

**iii) Trial evaluators**

Eight of the farmers interviewed were either trialling perennial pastures or just about to start trialling. Three of these had already planted their first perennials just before the project with their own money. All three indicated that the project allowed them to put more in than they had planned. One of these farmers was still not convinced that perennials would work on his farm and he needed to see further results. The other two indicated that they would continue to plant more in bits and pieces and see how it went but were more positive about perennial pastures. All three said that they would have planted perennials regardless of the project.

The other five farmers were ready to test perennials and had established their first paddock through the project. Two of these still needed to see whether they would continue while the other three indicated that they would continue to plant perennials. One in particular was so impressed with establishment and grazing of kikuyu that he had already planted further areas. Again, these farmers had been able to put in more hectares because of their involvement in the project. Four of these farmers said that they would have had a go anyway and the grant available through the project simply allowed them to do more. One farmer had wanted to plant perennials for several years on a newly purchased farm but couldn’t because a string of poor seasons had impacted on his bottom line.

**iv – a) Non-adopters**

One farmer had unsuccessfully tried perennial pastures many years ago and hadn’t bothered to try again. This farmer had a slight interest in perennials and had been motivated through the project to have another go. He indicated that without the project it was highly unlikely that he would have tried again whereas now he is going to slowly increase the area of perennial pastures on his property.

Another farmer had planted perennial pastures many years ago and still had a paddock of perennial veldt grass but had not considered putting more in. He had been motivated through project meetings and seeing production figures on lucerne, and decided to have a go. The funding helped that decision.
**iv – b) Adopters**

Five of the farmers had significant areas of perennials, were convinced that they were an important part of their farm enterprise and would be considered adopters. All of these used the project funds (or were planning to) to establish their next lot of perennial pastures. Again, these farmers indicated that they were able to put in more than they had planned. One indicated that he was endeavouring to squeeze a long-term plan into three years while funding was available through the project.

Table 1 summarises how the project influenced adoption of perennial pastures by the interviewees.

**Table 1 Impact of ‘Profitable perennials’ project on participating interviewees**

<table>
<thead>
<tr>
<th>Adoption stage at start of project</th>
<th>Impact of project on adoption</th>
<th>How impact occurred</th>
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<tr>
<td><strong>i) Not aware of/didn’t need</strong> (1 farmer)</td>
<td>• Increased awareness, knowledge and skills.</td>
<td>• Information at project meetings and from technical experts raised awareness, increased knowledge.</td>
</tr>
<tr>
<td></td>
<td>• Developed positive attitude to perennials.</td>
<td>• Trialling facilitated skill building, experience and seeing first-hand results.</td>
</tr>
<tr>
<td></td>
<td>• Decided to keep trying perennials.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Increased hectares of perennials.</td>
<td></td>
</tr>
<tr>
<td><strong>ii) Gathering information</strong> (1 farmer)</td>
<td>• Increased knowledge and skills.</td>
<td>• Information provided at meetings.</td>
</tr>
<tr>
<td></td>
<td>• Developed positive attitude to perennials.</td>
<td>• Trialling facilitated skill building, experience and seeing first-hand results.</td>
</tr>
<tr>
<td></td>
<td>• Decided to keep trying perennials.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Increased hectares of perennials.</td>
<td></td>
</tr>
<tr>
<td><strong>iii) Trial evaluation</strong> (8 farmers)</td>
<td>• Increased skills and knowledge.</td>
<td>• Some increase in knowledge through meetings and from technical experts.</td>
</tr>
<tr>
<td>⇒ Wanted to but unable to begin (e.g. due to finances).</td>
<td>• Developed positive attitude to perennials (still not convinced in some instances).</td>
<td>• Trialling allowed them to take the first step and, in some instances, allowed them to start with a larger area than they otherwise would have. Also allowed them to build skills, get some experience and see first-hand results.</td>
</tr>
<tr>
<td>⇒ Was about to begin trialling a perennial program on own farm.</td>
<td>• Decided to keep trying perennials (decision not made in some instances).</td>
<td></td>
</tr>
<tr>
<td>⇒ Had begun trialling a perennial program on own farm.</td>
<td>• Increased hectares of perennials.</td>
<td>• Allowed experimentation with options that had been considered but deemed ‘too risky’.</td>
</tr>
<tr>
<td><strong>iv – a) Non-adopters</strong> (2 farmers)</td>
<td>• Motivated them to try perennials again.</td>
<td>• Meetings and information motivated to have a go.</td>
</tr>
<tr>
<td></td>
<td>• Increased knowledge and skills.</td>
<td>• Trialling facilitated skill building, experience and seeing first-hand results.</td>
</tr>
<tr>
<td></td>
<td>• Developed positive attitude to perennials (still not convinced in one case).</td>
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<tr>
<td></td>
<td>• Decided to keep trying perennials (decision not made in one case).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Increased hectares of perennials.</td>
<td></td>
</tr>
<tr>
<td><strong>iv – b) Adopters</strong> (5 farmers)</td>
<td>• Increased hectares of perennials ‘on-ground’ over a shorter period.</td>
<td>• Funding enabled them to implement their perennial program quicker.</td>
</tr>
<tr>
<td></td>
<td>• Increased understanding of role of perennials on their farm.</td>
<td>• Allowed experimentation with options that had been considered but not pursued.</td>
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It was more difficult to assess the impact of the project on long-term adoption of perennial pastures. In some instances, participants were at a point where they could make informed decisions regarding continued trialling or adoption of perennials. However, other farmers commented that they still had to ‘see how it goes’ before committing other areas of their properties to perennial pastures.

### 3.3 Role of financial grant

The financial grants made available to project participants were fundamental to achieving an increased on-ground area of perennial pastures. Without the grant, more than half the interviewees admitted that they would not have planted as many perennial pastures as they had through the project and others would not have planted any. The grant directly overcame what interviewees described as the key barrier—financial risk. This manifested as various barriers for different interviewees including:

- cost of establishment (capital outlay)
- costs versus benefits (the grant made perennials a viable option)
- uncertainty of yield and financial return (because of lack of experience, or season)
- loss of income through paddocks sitting idle while perennials establish.

‘You know establishing lucerne is quite expensive, so you know without the incentives to establish it, the financial incentives to establish it, that’s probably going to have a great impact on going ahead and doing a program like that.’

‘Well it’s certainly helped. We wouldn’t have done as much I think. We would have done a bit, but not as much.’

For those interviewees who were more experienced with perennials, the grant overcame the financial risk associated with trialling new techniques/species to improve on what they had been doing (experimenting).

Because the grant directly addressed these financial barriers, landholders were more willing and able to be involved in ‘Profitable perennials’. Only one interviewee said that he would still have become involved in the project if there wasn’t a grant. The grant effectively engaged farmers in the project.

Additionally, without the grants to establish perennial paddocks, much of the capacity building (knowledge, understanding, awareness, attitudes, confidence and skills) would not have occurred. The grant played an important role in facilitating capacity building, particularly in the less experienced participants, by providing the opportunity to begin perennial pasture work on their own farms. Some interviewees who admitted that they would not have put the perennials in without the grant now see the real benefits of the pastures, and said that they would continue with the pastures into the future. In these cases, the grant gave them the opportunity to try perennial pastures. Where the interviewees were able to get pastures established, this ‘learning by doing’ was essential in building knowledge, skills and confidence. In some cases, this has lead to the landholder making decisions to continue with perennial pastures into the future.

‘We possibly wouldn’t have put lucerne in. It’s taking effect on your own farm that counts, really. We can see the benefits now, how it’s performing. Without the initial start-up we might not have put the lucerne in. It gave us the opportunity to test it. It is quite an expensive crop to initially start.’
3.3 Technical support

Project participants received technical support to assist in making decisions about which perennial pastures to use and how to get them established. This support included access to technical experts at meetings, on-farm advice, provision of written material and field walks to look at and discuss what other farmers had done. Generally, the farmers indicated that this support was useful, accessible and well received but not all interviewees found it adequate. This technical support provided a broader information network for the farmers, which they would not have had without the project.

‘... they always make the effort to come out when I need them, and the landholders really appreciate that because they’ve had trouble getting access to individual support like that for a lot of the years, and that’s one of the great things with this project, we can bring the technicians out onto the farms. It’s been really good.’

‘Well, my father planted the other stuff and I wasn’t involved in it. So yeah, it was the first time I planted basically so I needed a fair bit of guidance. It is all very well to perhaps read the recommendations and all that but to have someone saying “do this, don’t do that” sort of thing and “these are the dos and the don’ts”, makes it easier.’

‘I wouldn’t say there’s been a good support really. It hasn’t been as good as it could be.’

One aspect of the technical support that caused some issues was conflicting information coming from different experts at field days and on-farm visits. Two farmers indicated that this caused a few problems when making decisions about species and varieties to use, and could have been managed better.

Some important aspects of support have emerged. In the Oyster Harbour and Bremer River Strategic Catchments the initial project promotion and planning meetings played an important role in creating awareness of perennial pastures and increasing knowledge of the role that they might play on the farm, particularly for farmers with low levels of awareness and knowledge. These meetings also motivated farmers to try perennials. One farmer did comment that there were not enough experts at the meetings to provide all the farmers with the level of attention required to come up with a good plan. The project was delivered differently in the Lake Warden catchment, where one-to-one surveys were conducted to identify the perennial pastures farmers wanted to plant. This surveying did help raise awareness and to a lesser extent build knowledge but less so than in the other catchments.

Once committed to planting perennial pastures, the farmers were able to access further one-to-one support. Farm visits were organised where farmers discussed what varieties might best suit and how to go about establishing and managing them. This further built the participants’ knowledge and understanding of perennial pastures. Many interviewees mentioned the valuable advice provided by perennial pasture experts from DAFWA. Other industry experts were influential, including one local farmer in one catchment who was also a seed supplier. His knowledge was obviously considered highly credible. The support
provided through the project increased information flow through a broadened network that farmers were able to access because of the project.

‘Yeah we’ve had a couple of Department of Agriculture guys come out. So they have given us help all along—what to do and what not to do, basically. So there’s strong recommendations on how to plant them and that sort of thing.’

Generally, farmers felt that this support was accessible and useful, although a few farmers felt the level of support was not adequate. One farmer indicated that he could not get the information he needed through the project so he made a deliberate effort to speak to other farmers nearby who already had perennial pastures. Another said that it was hard to get help and it took a fair while.

The Oyster Harbour project officer played a major role in the success of the project in this catchment. Virtually all of the farmers interviewed commented on the energy and drive applied by this officer to making the project happen. The officer pushed and cajoled the farmers into action and this was crucial in getting farmers involved and motivated and ultimately to the stage of trialling perennial pastures in many instances.

‘It has been very good having XXXXX as the local coordinator. I don’t think we would have all got involved. And because XXXXX is local, XXXXX can ring you up and talk to you a bit differently to someone who doesn’t know you. It has made a huge difference.’
4. KEY LEARNINGS

The purpose of this evaluation was to gather information to guide the development of future projects encouraging long-term adoption of perennial pastures on the south coast. A number of useful learnings from this evaluation can be applied to similar projects in the future.

Financial grants can be a useful tool to achieve change

The grants provided to establish perennial pastures have played an important role in achieving change. In the first instance they got farmers attention and engaged them with the project. Once involved, the farmers rapidly moved to the stage of trialling perennial pastures. This accelerated the learning process, allowing farmers to make a decision quickly on whether perennial pastures had a role on their farm and whether to continue trialling and/or to adopt or not. The grant also overcame a key barrier to adoption of perennial pastures of up-front cost (Bowyer and Heath 2009).

Technical support facilitates learning

The technical support provided through this project played a key role in building farmers’ capacity to adopt perennial pastures. Projects of this nature that bring farmers, industry experts and government agency staff together increase participant farmers’ access to information through a broader network. This broader network allowed farmers to quickly learn about perennial pastures. Together with the increased knowledge and skills developed through trialling perennials, this should help farmers make better decisions, more quickly, about adopting perennial pastures.

Farmer diversity

While not a focus of this investigation, it was clear that the farmers interviewed were different in many ways—from personalities, farming experiences, financial situation and natural resources to enterprise mix. Interviewees came to the project from a wide range of adoption levels and the impact of the project on each individual differed. This diversity needs to be considered when developing projects. Information on the various market segments within a project area would help in the selection of the most effective extension methods to use. For example, basic information meetings and days are highly valuable for farmers with little perennials experience but of much less value to experienced perennials users.
5. REFERENCES


APPENDIX 1. Semi-structured interview guide

PROJECT IMPACT
What were the participating farmers’ reactions to project activities, including the value they placed on these?

- What perennials have you planted through the project?
- There have been a number of different activities conducted with farmers through the PP project; I wonder if you could tell me which ones you have been involved in? (may then need to follow through with prompt list—particularly mentioning the grant as an activity)
  - Planning meetings/workshops
  - Technical support—on farm advice, etc.
  - Financial incentive
  - Establish your site
  - Anything else
- Note the ones involved in and then ask, ‘tell me about your experience with the …’

To what extent have participating farmers adopted/not adopted perennial pastures, and why?
This is where we find out the impact of the project and what in the project made the difference. Need to drill down to see what activities got them over the line if that is the case. May be some overlap with section above.

- What PP have you established or plan to establish since the funded site?
- Which activities do you think were important in helping to make that decision, and why?
- If you plan to do more and haven’t, what is stopping you going forward?
- If you have not planted more, and don’t intend to, why not?
- What would you have done in the absence of PP project?
- What other projects/groups working with perennial pastures are you involved in?

Were there any unexpected outcomes?
- Any unexpected outcomes?
- Is there anything you would change about the project to improve it?
- Is there anything else you would like to add?

BACKGROUND INFORMATION
- General background information on farm, enterprise and farmer
- What is your enterprise mix?
- Total farm hectares (area managed/owned/leased)
- Rainfall
- How long have you farmed/had the farm?