

# Designer Carrots Symposium

SE05 and AgSIP13 State-level Investment Projects

## Natural Resource Management in Queensland

Social and Economic Research

Sustainable Agriculture Research

12–13 October 2006

Yeronga, Brisbane



**action**  
Salinity & Water  
AUSTRALIA

The National Action Plan for Salinity and Water Quality (NAPSWQ) is a joint Australian and Queensland Government initiative that encourages governments and regional communities to work together to address salinity and water quality issues in priority catchments throughout Queensland. This document has been produced under the NAPSWQ using Australian and Queensland Government financial support.

**Contact details:**

Lynda Pollock  
Socio-Economic SIP Coordinator  
Community Partnerships  
Department of Natural Resources and Water  
07 4938 4382 or 0428 103 475  
[Lynda.Pollock@nrm.qld.gov.au](mailto:Lynda.Pollock@nrm.qld.gov.au)

© The State of Queensland, (Department of Natural Resources, Mines and Water) 2006

**Disclaimer**

The Queensland Government supports and encourages the dissemination and exchange of information; however, copyright protects this document. The State of Queensland has no objection to this material being reproduced or made available online or electronically, provided it is for your personal, non-commercial use, or use within your organisation; this material remains unaltered; and the State of Queensland is recognised as the owner.

Any views and conclusions expressed in this document are those of the author and may not necessarily represent the Department of Natural Resources, Mines and Water nor government views or policy. Any decisions made by any parties based on the information provided in this document are solely the responsibility of those parties.

## Table of Contents

Agenda	3
SE05: Background and Rationale	4
AgSIP13: Background and Rationale	6
Project Summaries	
1. Targeted Vegetation Incentives Project “Bush Tender” (QMDC)	7
2. Tendering for Environmental Benefits – The Millmerran Landcare Group Inc. Stewardship Scheme 2005-06 (CA)	16
3. Partnership incentives for planning and participating to achieve sustainable land systems (BMRG)	21
4. Test the use of a competitive tender mechanism to achieve outcomes for ground cover, riparian conditions and biodiversity (FBA)	27
5. Reconnecting the Fragmented Landscapes of South East Queensland: Investigating the feasibility and impact of incentives to shape natural resource management practices in peri-urban landscapes (SEQC)	31
6. Designing Incentives for Achieving Biodiversity Targets in the Burdekin Dry Tropics NRM Region with specific emphasis on the Bowen Broken and Bogie River sub-catchments (BDT)	37
7. Improved Salinity Management for the Nebine / Mungallala / Wallam catchment. (SW NRM)	43

# Agenda

Day 1	
<b>Session 1 – Introduction and overview</b>	
9.00	<b>Beth Clouston:</b> Opening Welcome
9.10	<b>John Rolfe:</b> Overview of Market Based Instruments & Practical Issues to Address <i>(Expert Presentation)</i>
9.20 2x20m	<b>Project presentations (Part 1-2) Case Studies from NRM Groups Sharing their Experience in Implementing Incentive Trials</b> 1. <b>Kate Steel:</b> Targeted Vegetation Incentives Project “Bush Tender” (QMDC) 2. <b>Libby Gardiner &amp; Rod Strahan:</b> Tendering for Environmental Benefits – The Millmerran Landcare (CA)
10.00	Morning Tea
10.30 2x20m	<b>Project presentations (Part 3-4) Case Studies from NRM Groups Sharing their Experience in Implementing Incentive Trials</b> 3. <b>John Rolfe:</b> Partnership incentives for planning and participating to achieve sustainable land systems (BMRG) 4. <b>Kristy Dalton and Claire Rodgers:</b> Test the use of a competitive tender mechanism to achieve outcomes for ground cover, riparian conditions and biodiversity (FBA)
11.10	<b>Rotating Discussion:</b> Understanding Key Aspects and Issues of Incentive Trials
12.15	<b>Plenary:</b> What worked; what didn't work; what would we take forward
1.00	Lunch
<b>Session 2 – Designing metrics and evaluating bids</b>	
1.45	<b>Stuart Whitten:</b> Environmental Benefits Index Design – Applications & Case Studies <i>(Expert Presentation)</i>
2.05	<b>Mark Eigenraam:</b> Methodologies and Information Needs to Support Development of the Environmental Benefit Index <i>(Expert Presentation)</i>
2.25	<b>Group Discussions:</b> Learning from Different Approaches to Metric Design & Bid Evaluation
4.00	Afternoon Tea (On the Go)
4.15	<b>Plenary:</b> Overview of Learning
4.45	<b>Feedback Session</b>
	<b>Close – Drinks at the bar to discuss further social activity for evening</b>
Day 2	
<b>Session 3- Maximising participation</b>	
9.00	<b>Beth Clouston:</b> Welcome
9.05	<b>Mark Morrison:</b> Factors Influencing Landholder Participation <i>(Expert Presentation)</i>
9.30 3x20m	<b>Project presentations (Part 5-7) Case Studies from NRM Groups Sharing their Experience in Implementing Incentive Trials</b> 5. <b>John Mackenzie:</b> Reconnecting the Fragmented Landscapes of South East Qld (SEQC) 6. <b>Allyson Lankester:</b> Designing Incentives for Achieving Biodiversity Targets (BDT) 7. <b>Dan Ferguson:</b> Improved Salinity Management for the Nebine / Mungallala / Wallam catchment. (SW NRM)
10.30	Morning tea
11.00	<b>Group Discussion:</b> Social Motivation for Participation in Incentive Schemes
12.15	<b>Plenary:</b> Overview of Mechanisms to Support Participant Engagement
12.30	Lunch
<b>Session 4 – Monitoring and evaluation</b>	
1.30	<b>Jill Windle:</b> Evaluation of Workshops and Competitive Tenders <i>(Expert Presentation)</i>
1.50	<b>Group Discussion:</b> Exploration of Monitoring & Evaluation Incentive Trials
2.50	<b>Plenary Overview:</b> Principles to Adopt
3.15	<b>Feedback on event</b>
3.30	Afternoon tea
4.00	<b>Close</b>

## **SE05: Background and Rationale**

### **SE05: Understanding the economic drivers for natural resource management and establishing a toolkit of incentives natural resource management change.**

#### **Overview**

The Social and Economic State level Investment Project SE05 is one of a suite of five social and economic state level projects funded under the National Action Plan for Salinity and Water Quality. This project focuses on supporting regional NRM bodies to implement and strengthen their planning frameworks through identifying, developing and applying a range of social, economic and market based incentives for improved land management practices to achieve salinity and water quality outcomes.

#### **Background**

The success of regional NRM plans in delivering improved landscape outcomes requires an understanding of the key social and economic drivers governing resource use and decision-making at the individual property level. This requires increasing the understanding of the economic and social pressures on the users and managers of land and other resources including the nature of incentives and disincentives which currently influence NRM behaviour or limit current best practice.

The SE05 project has responded to the need to explore and develop mechanisms that can deliver more cost-effective natural resource and environmental outcomes by stimulating private choices that are in the public interest. Through the understanding of the economic and social drivers governing resource use and its management, policy instruments (including incentive and market based instruments) can be applied to specific problems and issues.

This project has contributed significantly to the level of understanding in National Action Plan for Salinity and Water Quality regional NRM groups about drivers and the range of incentive based instruments available to address NRM issues. Through trialling a number of these instruments, regional NRM bodies have gained a practical experience in the use of incentives and market based mechanisms and the opportunity to assess these mechanisms against their current practices for uptake and efficiency.

#### **Activities**

This project will be completed in December 2006. Funds have supported:

- Undertaking targeted studies in appropriate areas and drawing together the results of previous research to promote an understanding of key economic and social drivers leading to natural resource management degradation.
- Supporting regional bodies in understanding the role of incentives in NRM.
- Developing a toolkit of market and incentive-based instruments for potential use by regional bodies as part of their overall NRM strategies.
- Establishing a web-enabled database of existing incentive programs in Queensland
- Establishing and trialling new innovative approaches to the design and implementation of mechanisms including institutional arrangements
- Monitoring, evaluating, promoting and supporting the adoption of incentive approaches to address particular NRM problems.

## SE05 - Innovations Fund for Designing, Implementing and Monitoring Incentives

Under the SE05 program an ***Innovations Fund for Designing, Implementing and Monitoring Incentives*** was set up. The aim of the funding was to support regional groups to implement the incentives programs identified in their plans. This was achieved through developing partnerships between regional groups, research providers and the social and economic SIP team. The funds were provided specifically to design innovative mechanisms which were then implemented through planned investment by the regional NRM groups.

All seven of the National Action Plan for Salinity and Water Quality funded regional NRM groups in Queensland were successful in obtaining funding and either implementing innovative incentive mechanisms or investigating the social and economic attitudes and motivations required for land management change. Table 1 provides an overview of the incentive mechanisms and the biophysical problems addressed through the devolved funding trials. One aim of the “Designer Carrots Symposium” is to share the learnings of these trials.

**Table 1:** Overview of Innovations fund for Designing, Implementing and Monitoring Incentives

Regional Body	Incentive Mechanism	Biophysical problem addressed
Burdekin Dry Tropics NRM	Debt for Conservation Swaps & Public Recognition	Biodiversity
Burnett Mary Regional Group	Conservation Tender in partnership with the Queensland Dairy Organisation and Growcom	Water Quality and soil health
Condamine Alliance	Conservation Tender to allocate stewardship payments	Vegetation retention and weed control
Fitzroy Basin Association	Conservation Tender	Biodiversity
Queensland Murray Darling Committee	2 x Conservation Tenders	Vegetation retention & soil conservation
South East Queensland Catchments	Develop an understanding of the values, attitudes and motivations of land managers in the peri-urban zone	Fragmentation of landscape in SEQ and biodiversity loss
South West NRM	Develop an acceptance and identification of salinity and mitigation actions.	Salinity

## **AgSIP13: Background and Rationale**

The aim of the AGSIP13 project is to make resource economic tools and guides available to NRM groups and managers in Queensland.

Resource economics helps to identify and evaluate tradeoffs associated with changes in production and environmental protection, both separately and together. Economic techniques are particularly useful in evaluating potential synergies and tradeoffs associated with dual goals of agricultural production and environmental protection.

Materials from the project and related workshops will be provided on the AGSIP website over the next few months at [www.agsip.cqu.edu.au/default.htm](http://www.agsip.cqu.edu.au/default.htm)

The material is designed to cover three broad areas of resource economics:

- Issues dealing with synergies and tradeoffs between agriculture and the environment across different landscapes and industries,
- Assessing the demands by different communities for managing landscapes, protecting the environment and taking the needs of communities into account, and
- Designing policy and institutional mechanisms that provide better incentives to manage production and natural resource systems.

There are also links available to other relevant reports and websites.

This research and support project is being run by Central Queensland University with contributions from the Queensland Department of Primary Industries. The project is being funded through the Sustainable Agriculture State-Level Investment Program (AgSIP).

The project is being led by Associate Professor John Rolfe from Central Queensland University, in conjunction with Dr Jill Windle (Central Queensland University) and Mr Peter Donaghy (Queensland DPI), and is operating from 2004 to 2007.

## Project 1

### Soil Management Tender

#### Name of Regional Body:

Queensland Murray Darling Committee

#### Research Partners:

Dept of Natural Resources and Water (NRW)  
National Action Plan- Salinity & Water Quality

Natural Heritage Trust (NHT)  
National Landcare Program (NLP)  
Central Queensland University

## 1. Overview

*“The objective of this project is to improve soil condition by increasing existing groundcover to 30%, improving management of soil fertility decline and soil structure problems, as well as developing actions that will result in reducing erosion.”*

Substantial areas in the Queensland section of the Murray Darling region are suffering from soil condition decline. This decline is demonstrated through pasture condition rundown, variable crop production levels, increasing number of crop losses and decline in remnant vegetation health. In addition, clinical investigations have found that regional soils are suffering from declining inherent fertility, structure decline, surface crusting, sub soil compaction, increasing salinity and sodicity levels and elevated acidity levels. These changes have been occurring incrementally; however their effect has been heightened in recent years due to the extended drought conditions.

In response to these emerging issues, one tangible, easily recognisable and accepted practice that would help landholders, industries and support agencies (e.g. departments, research and development organisations, catchment bodies) was the ability to increase groundcover over the region’s productive cropping and grazing soils. Soil resources are seen as key building blocks for regional landscapes by many rural communities and the protection of these resources were seen to achieve true triple bottom line benefits.

Increasing groundcover on the most highly productive soils of the region was seen as a mechanism for protecting soils from erosion, further soil structure decline, further deterioration in soil health and other debilitating degradation processes such as elevated salinity and sodicity levels.

In order to achieve the project’s objective, an understanding of the soil resource distribution in terms of type and biophysical constraints was needed. After sourcing departmental mapping, knowledge of recommended management practices was collated. On obtaining a better understanding of the biophysical resources and constraints, the next step in the decision logic was to assess the barriers to adoption and implementation of conservation practices. On review of previous socio- economic reporting on this topic, our analysis concluded that some financial incentive would assist

landholders. This decision was made in the context of the deteriorating cash flow circumstance created by the prolonged nature of the current drought.

This selected mechanism was also considered in the context of other incentive mechanism currently being implemented through QMDC's current delivery mechanisms, namely sub- catchment planning, EMS and priority investments. It was considered that the tender process complemented these other mechanisms.

## **2. Innovation in Incentive Trials**

In response to the decision logic and decisions, it was determined that a financial incentive be offered to willing landholders in a defined area of the catchment. This area was defined by departmental broad scale mapping of the region's prime agricultural resources. The pilot tender was conducted over the later part of 2005 and early 2006.

In addition to working within the framework of or other incentive processes, it was hoped that this tender process would unearth some innovative concepts held by landholders that only adversity (such as a drought) can reach. This was achieved in part as the monies offered provided a trigger for conservative property development plans to be brought forward and some 'seed risk capital' to support inventive minds.

In order to develop some of the ideas initiated by landholders, the following key elements of an engagement strategy were implemented:

### **Communication and Marketing Strategy:**

1. Timelines were developed for submission of both Expression of Interest and Tender Applications.
2. A marketing strategy was developed including development of an Information package containing: an introductory letter, listed criteria, maps, and expression of interest (EOI) forms.
3. Numbers of landholders in the targeted areas were identified with the relevant postal/ mail runs. A total of 3300 information packages were printed and mailed out to the target area.
4. Additional publicity in the form of local newspaper articles and radio interviews were conducted to gain a wider response.

### **Tender Delivery:**

1. Mapping of the study area was confirmed.
2. A project officer was contracted to carry out the "Land Management Tender" pilot, in consultation with QMDC staff. This contracted officer was a recognised well informed agricultural consultant in the region.
3. Expressions of Interest were called. Tender documents were forwarded to those submitting Expressions of Interest. The key stipulation for the participating landholders was to prepare a management plan to include actions that will result in a minimum of 30% ground cover being achieved. Some suggestions included:
  - o Machinery adaptation for minimum tillage systems;
  - o Rehabilitation of degraded cropping lands;
  - o Retirement of old, steep or degraded cropping to native pasture; and
  - o Modify cropping systems/ rotations to improve soil fertility and reduce soil compaction.

4. Site confirmation was completed with the assistance of our GIS mapping staff. This confirmed if the property lot was within the designated area. Paddock scale confirmation advice over the phone was not provided.
5. Phone confirmation regarding project eligibility was followed up with further personal contact either by telephone or a property visit (if requested) to confirm eligibility against criteria. These discussions mainly revolved around management arrangements and monitoring requirements. No discussions regarding the development of budgets were undertaken.

### **Assessment Process**

1. Eligibility of tenders was confirmed based on location within the target area.
2. An assessment panel was chosen, including technical staff, project officer and regional coordinator (three people in total).
3. Technical competence was evaluated against assessment criteria (the same criteria that had been previously communicated to applicants in the circulated material) to rank the tenders. The criteria used were:
  - Increase existing ground cover to progressively achieve levels of 30% or more;
  - Improved management of soil fertility decline;
  - Improved management of soil structure problems;
  - Actions that will result in reducing erosion; and
  - On a competitive dollars per hectare basis.
4. Assess the feasibility of the proposed management and monitoring arrangements
5. Consider other factors (not criteria) for assessment, namely current market values of land, recorded values of similar tender projects; and costs of other NRM projects (not tenders) with similar objectives e.g. devolved grants.
6. 17 landholders were successful in the tender process and 6 year management contracts were developed and signed off with specific management conditions such as maintenance of pastures once planted, continued use of modified machinery and ongoing monitoring programs included.

## **3. Evaluating the Incentive**

### **Did it achieve the objectives?**

Yes - the process enabled landholders to adopt improved land management practice on near 7000 hectares. This contributed to regional targets, especially regional management action targets. In addition, feedback from landholders has been good. To many, it is seen as a mechanism to positively support landholders wishing to undertake pro-active management change and not receive support to fix something that is already in poor condition, for example degraded land. This positive feedback is good for relationship building. The tender also enabled positive links to other industry programs such as Grain and Graze are clear. Interrelationships with these programs will be of benefit to all participants.

### **What elements made it work? Why?**

The process had clear direction and clear directives and was seen as trying to help all stakeholders. The process allowed landholders to demonstrate their own initiative and not rely on or be dictated to by external industry or government providers. Also, the

process provided a statistical delineation that supported laws of diminishing returns. Please see attachment 1 for raw data.

### **What elements did not work as well? Why not?**

Improvements could be made in a number of areas and these are discussed in the 'Learnings - So What?' section below.

### **Do you think it provided value for money?**

Yes - a lot of work was proposed to be completed at the upper tender price and below. This 'seed' capital was seen as a trigger for many landholders to implement work using significant quantities of their own money. In some cases, it provided the landholder with a 'deposit' to be confident when approaching banks for development loans.

In relation to NRM benefits, the tender resulted in the protection of over 7000ha of high asset values of good agricultural soils that were subject to threats of moderate to high soil degradation risks. The project has contributed to resource condition targets and management action targets for the Land Management and Salinity theme of the NRM Plan. The project has also resulted in engagement with over 60 landholders with generally a positive initiative.

### **How was the capacity of the regional body enhanced through the delivery of the incentive?**

As above.

## **4. The "SO WHAT?" Question**

Future tenders should consider the following staged actions:

### **Planning Phase**

1. Develop very clear objectives for outcomes and outputs.
2. Develop a well constructed publicity campaign allowing time for engagement with media and landholders.
3. Prepare a responsive time schedule so as to encourage landholder involvement and allow for life activities, such as planting/ harvesting and school holiday periods.
4. Develop well designed and developed project/time management schedules.
5. Prepare all documentation, for example contracts formats, assessment schedules.

### **Assessment Phase**

1. Personal contact via phone, information sessions, property visits and assessments, contract negotiations are very important.
2. Maintain consistency in eligibility requirements
3. Document phone conversions
4. Document property visits through a template involving photos

5. Limit the number of people having contact with landholders so as to reduce mixed messages
6. Technical evaluation requires research support where possible to retain objectivity in assessment

### **Implementation Phase**

1. Be timely
2. Develop supporting contracts that are at a level relative to risk eg quantum of dollars
3. Plan site inspections for all successful tenderers so as to benchmark activities as part of overall monitoring and evaluation of outcomes and the program
4. Plan for ongoing promotion of practice change outcomes as part of wider community engagement and capacity building strategy

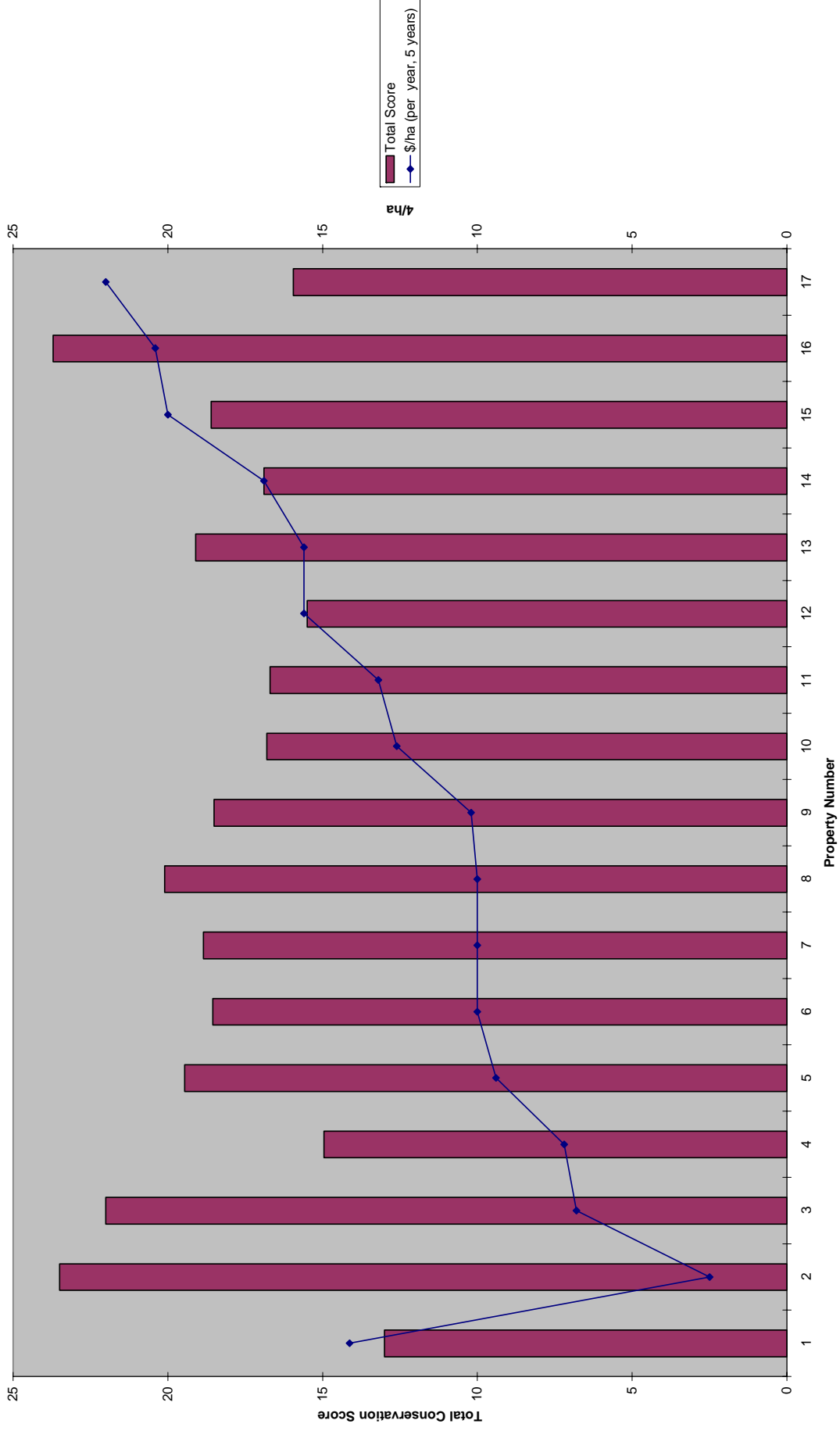
### **Related Learnings**

1. Information gaps in this process included the knowledge and capacity of landholders of environmental tenders and application of reserve prices.
2. Seasonal conditions influence the type of submission and the attitude of some landholders
3. There are some risks associated with funds being allocated to landholders under a legal contract for management actions and not being binding on a new owner should the property be sold.

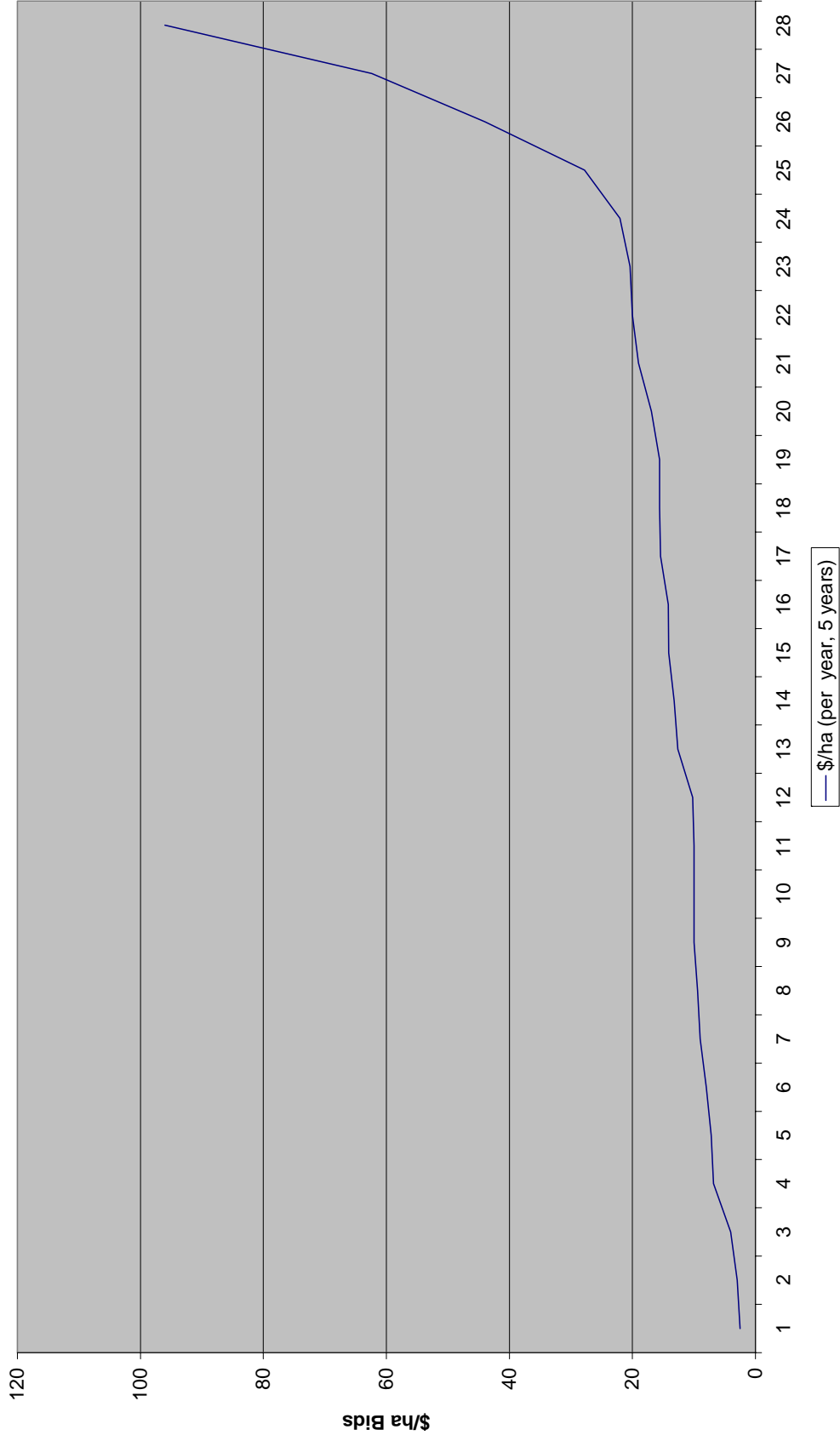
**Appendix 1**

<b>Town</b>		<b>Postcode</b>											
<b>Property #</b>	<b>Total Score</b>	<b>\$/ha (per year, 5 years)</b>	<b>Area</b>	<b>Total cost (per year)</b>	<b>Final cost</b>	<b>Score / \$/ha</b>	<b>Cumulative Cost</b>	<b>Score / total cost</b>					
26	13	14.13	566	7997.58	39987.9	0.9	39987.9	0.001625					
13	23.5	2.5	3200	8000	40000	9.4	79987.9	0.002938					
7	22	6.8	160	1088	5440	3.2	85427.9	0.020221					
25	14.95	7.2	200	1440	7200	2.1	92627.9	0.010382					
23	19.45	9.4	80	752	3760	2.1	96387.9	0.025864					
27	18.55	10	1070	10700	53500	1.9	149887.9	0.001734					
20	18.85	10	20	200	1000	1.9	150887.9	0.09425					
8	20.1	10	120	1200	6000	2.0	156887.9	0.01675					
1	18.5	10.2	50	510	2550	1.8	159437.9	0.036275					
12	16.8	12.6	75	945	4725	1.3	164162.9	0.017778					
21	16.7	13.2	370	4884	24420	1.3	188582.9	0.003419					
19	15.5	15.6	128	1996.8	9984	1.0	198566.9	0.007762					
9	19.1	15.6	400	6240	31200	1.2	229766.9	0.003061					
17	16.9	16.9	40	676	3380	1.0	233146.9	0.025					
24	18.6	20	12	240	1200	0.9	234346.9	0.0775					
14	23.7	20.4	170	3468	17340	1.2	251686.9	0.006834					
15	15.95	22	200	4400	22000	0.7	273686.9	0.003625					

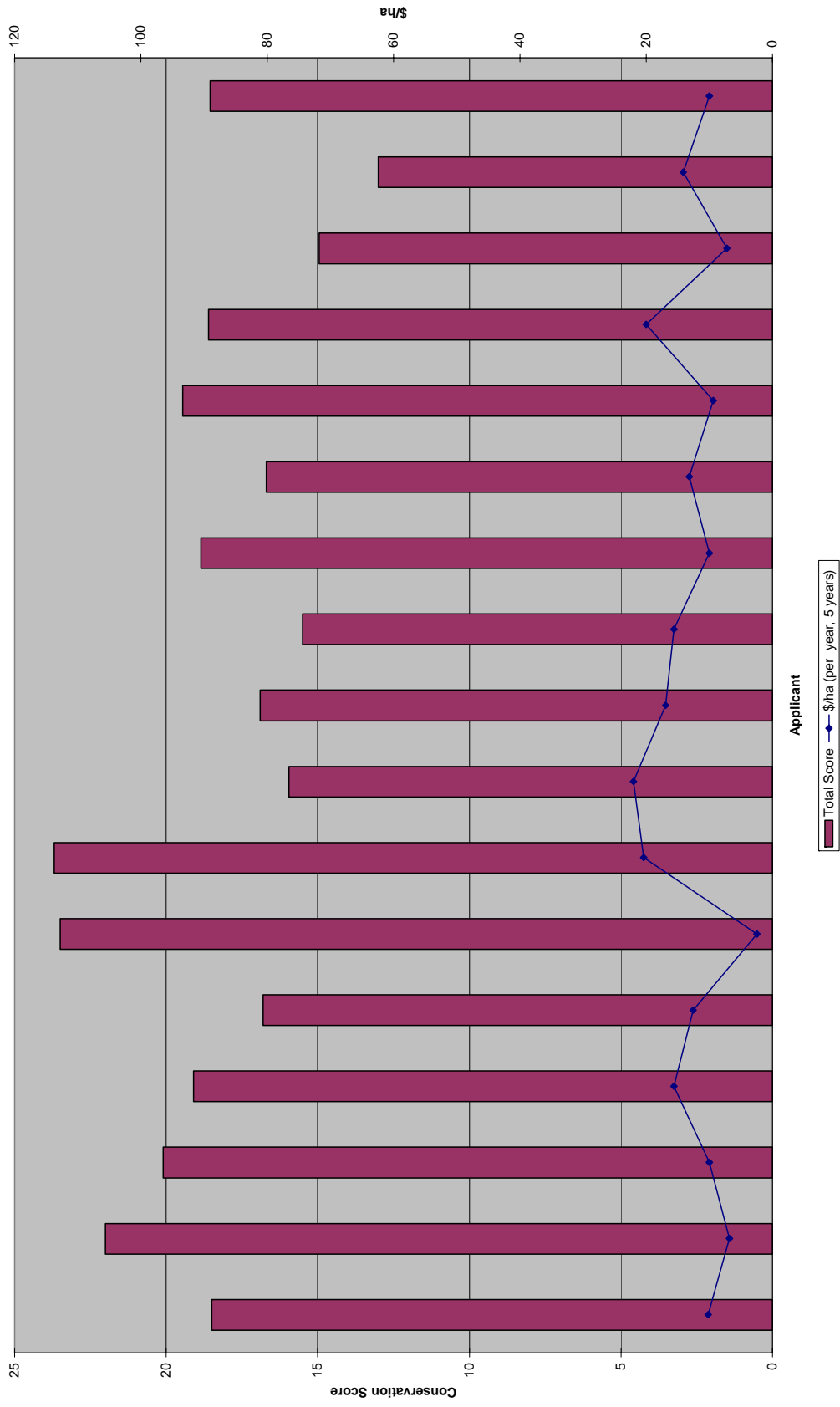
Total Conservation Value vs. \$/ha



# Range of Bids



Conservation Score vs. \$/ha



## **Project 2**

### **Tendering for Environmental Benefits – The Millmerran Landcare Group Inc. Stewardship Scheme 2005-06.**

#### **Name of Regional Body:**

Condamine Alliance

#### **Research Partners:**

DPI&F – Rod Strahan

Condamine Alliance – George Lambert

Millmerran Landcare Inc. – Libby Gardiner

## **1. Overview**

The Condamine catchment has 1.2 million hectares of grazing lands which are predominantly located in the upland regions of the catchment. The land degradation due to non-adoption of current recommended practices (CRPs) is significant, causing extensive soil erosion, high sediment and nutrient loads in the catchment waterways thereby reducing water quality.

The Millmerran Shire was chosen as the location to test the stewardship scheme process. Common natural resource management issues to be addressed included: soil erosion, deep drainage, risk of salinity outbreaks, environmental weeds, retaining and managing stands of good quality remnant vegetation needing protection and converting land being used for purposes beyond its capability to more sustainable use. The natural vegetation was mostly brigalow scrub that was cleared for cropping purposes more than 70 years ago.

The project tested the effectiveness of using a stewardship scheme based on a tender system to achieve practice change and desired environmental outcomes.

A stewardship scheme with incentive payments was chosen because the provision of incentives with ongoing support to facilitate changed management practices over an extended period of time is a successful mechanism for changing management culture.

## **2. Tender Scheme Process**

The tender process involved landholders providing bids for projects that met the stated objectives. Projects were assessed and scored for the environmental benefits provided. The scores for each project were ranked according to the most benefits provided for the least cost. This was seen as an effective and efficient way of achieving the desired outcomes. The process followed the following format:

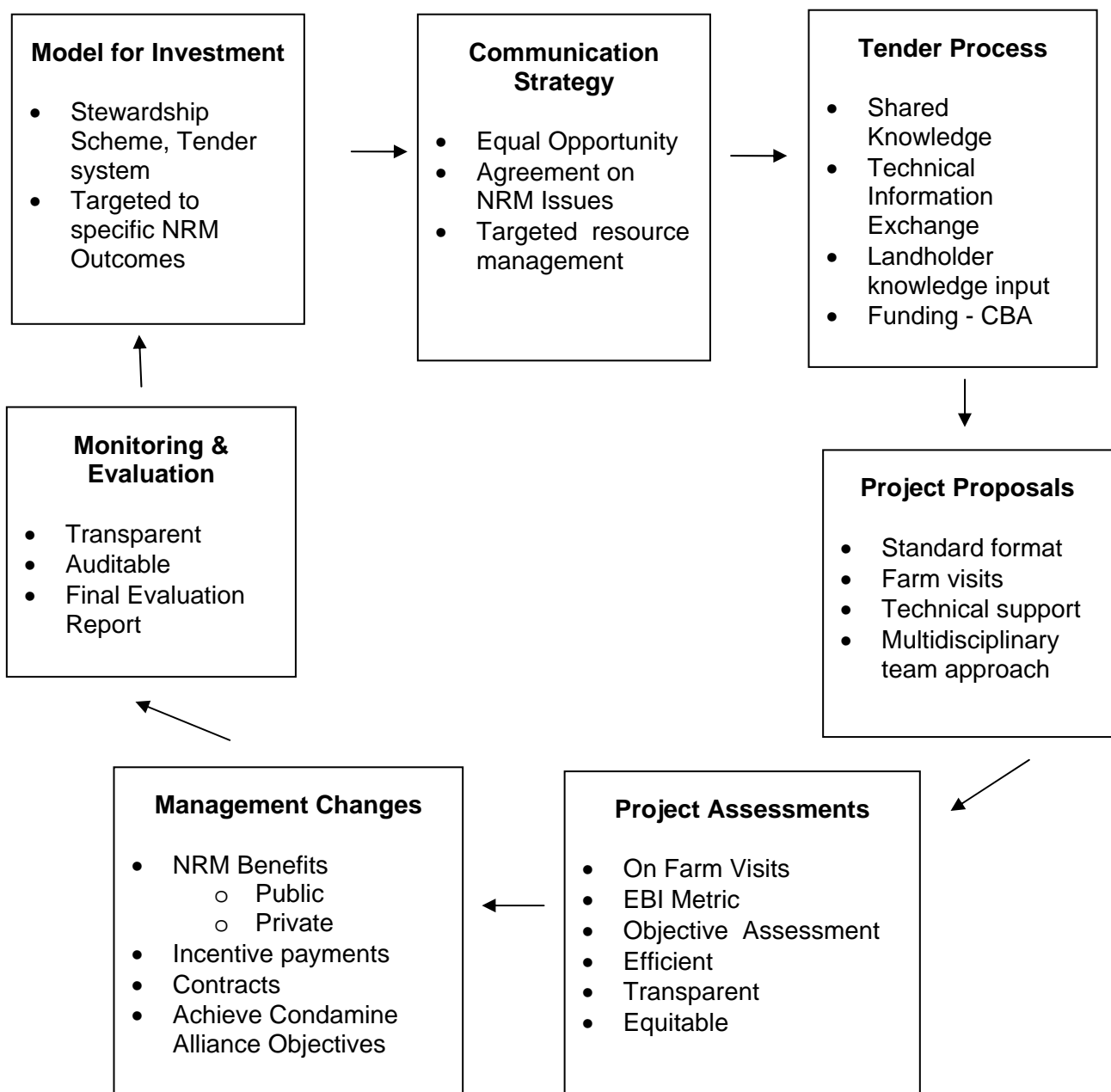
1. Public Information Meeting
2. Submit Expression of Interest Form
3. Property visits to discuss and plan submissions
4. Management plan sent to Landholder
5. Landholder submitted a price or bid

6. Bids assessed using the Environmental Benefits metric developed
7. Contracts sent to landholders for the successful projects
8. Once contract was signed the initial payment was forwarded
9. Monitor projects – further payments on completion of stages
10. Final inspection upon completion
11. Final project report

### 3. Innovation in Incentive Trial

The stewardship scheme process adopted provided innovative and dynamic extension services that were designed to gain the maximum benefit from shared knowledge and the provision of incentive payments to facilitate management changes.

The following flow diagram (Figure 1) illustrates the strategic extension provided by the project to facilitate changes in landholder management practices.



**The key points** to draw from the flow chart are that the process:

- Can be designed to target specific NRM issues, aligned to investors' objectives.
- Provides equal opportunity for all landholders to participate, no-one is disadvantaged by their ability, or lack of, to write funding proposals or by benefiting from perceived connections. All the project submissions are prepared according to a format set by the Landcare Officer after consultation with the Landholder. The landholders simply enter their price for the supply of the project works.
- Maximises benefits through knowledge exchange, both ways – development of common goals and understanding.
- The assessment process is objective and rigorous.
- The process is transparent, auditable and accountable to the Investors and the community.
- The multidisciplinary team approach provides landholders with multi-skilled extension services and by working together the team members each gained a broader understanding of the issues involved.
- The benefits are both public and private and these are accounted for in the assessment process.
- Incentive payments and contractual agreements ensure management change.
- Monitoring and evaluation feed back into the process.

The project process adopted assisted to strengthen and build relationships between the Condamine Alliance and landholders in the region and demonstrated that the Condamine Alliance was very willing to distribute funds to landholders to make targeted management changes.

Case study assessments demonstrated the willingness of landholders to contribute to regenerative management by contributing to the total project costs or foregoing potential income in order to change to more sustainable management practices.

## 4. Results

There were 14 projects assessed and sent out to the landholders for a submission of a tender. Of these, 13 project tenders were received.

Eleven projects were accepted and contracts issued. The projects that the scheme is funding are:

- Two projects for the protection of remnant vegetation, totalling an area of 60 hectares at an average cost of \$376 per hectare.
- Four projects pertaining to riparian areas, totalling an area of 80 hectares at an average cost of \$163 per hectare. This average cost is actually low as some of these projects were split with grazing management projects. The bulk of the costs were incurred by protecting the riparian area, but these were only a small part of the total project area.
- Eight projects pertaining to grazing lands, totalling 452 hectares at an average cost of \$137 per hectare. These projects consisted of weed removal and pasture re sowing, pasture re sowing in cultivation areas and pasture management.

The total area that the pilot stewardship scheme is covering is 592 hectares at a cost of \$97,638 or an average of \$165 per hectare.

Figure 2 below depicts the marginal cost curve or the supply curve for the tender scheme. It shows the value of the bids (as \$ /score) in ascending order from left to right. The horizontal axis depicts the total quantity of environmental benefits supplied (according to the projects scoring system, ie. E score + M score). The supply curve depicts the total supply of environmental benefits of the project and the cost (\$ /score) for each of the projects. The supply curve over most of the projects is relatively flat. Where the supply curve starts to rapidly rise demonstrates that the cost of these projects is significantly more expensive representing less value for expenditure.

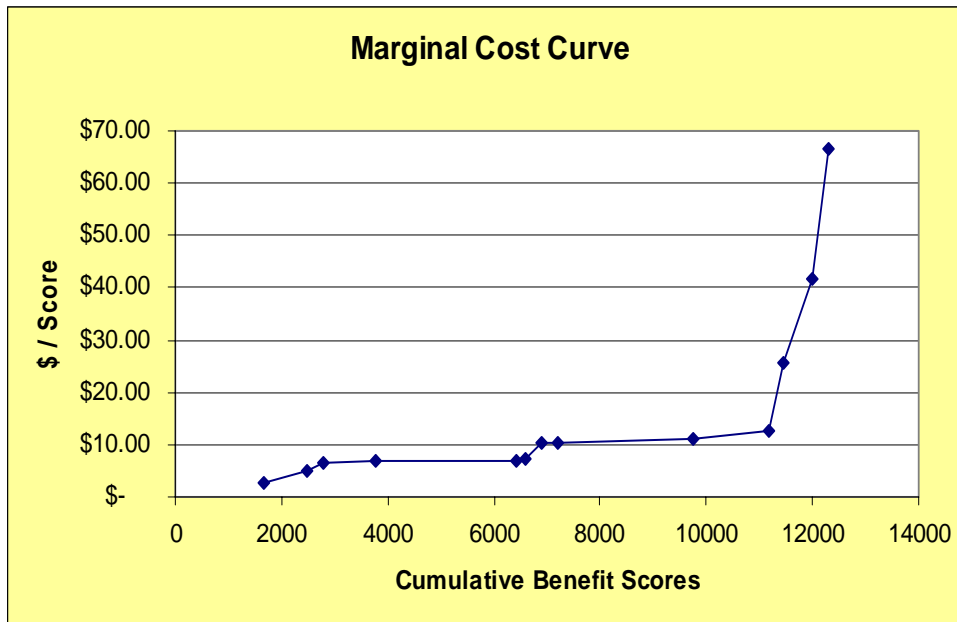


Figure 1: Marginal Cost Curve or supply curve for environmental benefits

## 5. Evaluation of the Incentive

**5.1** The pilot stewardship scheme achieved its objectives. The project demonstrated that there are alternate ways to distribute funding to achieve management changes that are efficient, equitable, transparent and accountable. The capacity of the regional body was significantly enhanced as a result of this project.

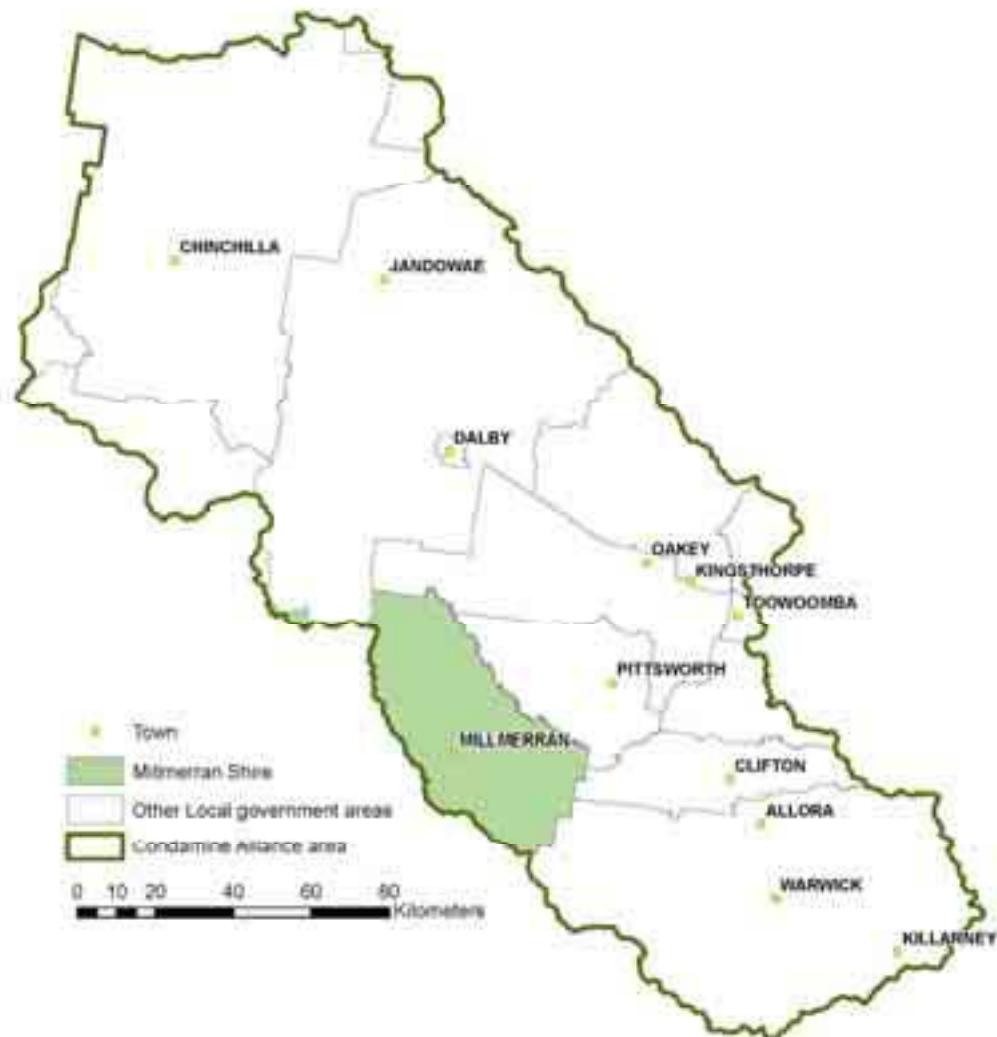
### 5.2 Factors that made the Stewardship Scheme Work

- Planning Process
- Model to work from
- Well defined process
- Communication strategy
- Administration support
- Defined NRM Goals
- Defined tender process and supporting information
- Multidisciplinary team
- EBI Metric
- Farm visits
- Personal contact with landholders
- Relative uniformity in land type

- Incentive payments
- Contracts
- Flexibility

## 6. Unintended Outcomes/Findings

- The projects that were funded were the same as those chosen by the team's 'gut feelings'.
- The process went according to plan and on time and went much easier and faster than expected.
- Land holders were much more enthusiastic with the process than expected.
- Land holders really appreciated the technical help and the ability to discuss the practical aspects of the project before they submitted their project proposals.
- Other Landcare coordinators from other parts of the Darling Downs have expressed enthusiasm with the process and are very keen to implement it in their own regions.



## Project 3

### Partnership Incentives for Planning and Participating to Achieve Sustainable Land Systems (Two Case Studies)

**Name of Regional Body:**

Burnett Mary Regional Group (BMRG)

**Research Partners:**

Queensland Dairyfarmers' Organisation (QDO)

Growcom

Central Queensland University (CQU)

#### 1. Overview

The incentive process adopted by the BMRG involved three separate stages:

- An overview process to identify different market based instruments and incentive mechanisms and to map potential mechanisms to natural resource management (NRM) issues in the region,
- An engagement process to work with regional industry bodies and local government to encourage uptake of preferred incentive mechanisms,
- A planning and trial process to develop two incentive trials in the regional area with different industry bodies:
  1. Queensland Dairy Organisation
  2. Growcom

The goals of the BMRG were to facilitate the adoption and trial of incentive mechanisms by industry and local government in the region rather than to directly run the trial mechanisms. The process followed by the BMRG was to run an awareness and engagement process within the region with the explicit intention of funding at least two separate trials to demonstrate the potential application of the mechanisms.

To perform the first stage, the following steps were taken:

- The research partner (CQU) developed an overview document that outlined the different mechanisms that were available, their relative advantages, the steps involved in application, and the types of issues that they were suited to.
- Workshops were held across the region to present the overview information about available mechanisms, to identify the types of issues that mechanisms could be applied to, and to engage regional stakeholders in the adoption process.

To perform the second stage, the following steps were taken:

- Results of the workshops were identified and circulated to regional stakeholders to generate wider awareness of the mechanisms and issues.
- Two industry organisations, QDO and Growcom, were identified as potential partners to roll out incentive trials.
- A series of meetings were held with representatives of these bodies to develop more focused applications.

To perform the third stage, the following steps were taken:

### **QDO Trial**

- Discussions were held with QDO about designing a focused field trial that addressed NRM issues relevant to both QDO members and BMRG.
- A number of relevant NRM issues were nominated by QDO, with the relevant ones to be addressed in a trial identified as:
  1. Effluent management impacting on nutrient movement into waterways,
  2. Riparian management.
- A competitive tender mechanism was selected for the trial.
- A restricted area (the East Gympie region) was selected for the trial to minimise design issues and engagement costs, and to maximise uptake of the mechanism.
- Agreements to fund and perform the trial were developed between BMRG and QDO, and ratified by the relevant Boards.
- The design process and initial engagement processes with dairy farmers in the East Gympie trial area were completed.
- **Note:** Implementation of the trial is underway in September and October 2006.

### **Growcom Trial**

- Discussions were held with Growcom about designing a focused field trial that addressed NRM issues relevant to both Growcom members and BMRG.
- A number of relevant NRM issues were nominated by Growcom, with the potential ones to be addressed in a trial identified as:
  1. Nutrient and chemical movement into groundwater supplies in horticulture areas,
  2. Nutrient and chemical movement into riparian areas in horticultural areas,
  3. Nutrient and chemical movement into riparian areas from citrus orchards.
- A competitive tender mechanism was selected for the trial.
- **Note:** Final selection of targets and design of tender process to occur in late 2006/early 2007.

## **2. Innovation in Incentive Trials**

The approach taken in this tender represents three broad areas of innovation.

- The first was to undertake an 'action learning' approach to engaging a range of potential stakeholders in the discussion and evaluation of potential mechanisms to apply. By engaging the potential stakeholders that might apply the mechanisms it was possible that there would be a level of awareness and ownership developed over the process.
- The second area of innovation was to contract out the implementation of the incentive trial rather than running it through the regional NRM group. Under this type of 'enabling' role, the BMRG acted as an investor and a facilitator rather than an operator. There are a number of potential advantages in contracting out the performance of incentive mechanisms. These include:
  1. Capitalising on the existing skills and networks that industry groups and other stakeholders already have.

2. Generating awareness and up-skilling of industry groups and other stakeholders about incentive mechanisms.
  3. Being able to potentially draw on regulatory tools or fee mechanisms that potential partners such as local government may be able to employ.
  4. Avoiding the creation of an excessive bureaucracy within the NRM group.
  5. Avoiding the potential duplication or confusion of mechanisms that different stakeholders might use to address similar problems.
- The third area of innovation was to focus on issues of water quality impacts from dairying activities. This required the development of a metric that was capable of evaluating different types of activities (eg. effluent management from dairies, management of riparian areas) as well as different types of environmental outcomes (eg. improvements in nutrient loads, sediment movements and biodiversity protection).

The total assessment score (TAS) for each management action could be calculated as follows:

$$\text{TAS} = (\text{Proportion}_{\text{Nitrogen}} + \text{Proportion}_{\text{Phosphorus}}) \times \text{Loading}_{\text{Sediment}} \times \text{Loading}_{\text{Riparian}}$$

The evaluation for each proposal was as follows:

$$\text{Relative Bid Value} = \$ / \text{Total Assessment Score}$$

It was difficult to identify a simple way of combining information about potential outputs relating to improvements in nutrients (N and P), sediments and biodiversity. To address this, the metric that was developed had five particular areas of innovation:

- The assessment of nutrient, sediment and biodiversity impacts was based on key criteria that were measurable.
- The assessment of environmental outputs focused on nutrient reductions (N and P), and then scores adjusted by scalars to take account of any additional benefits.
- Nitrogen and phosphorus reductions were weighted according to the total annual loads of N and P in the Mary River system: this transformed them into relative ratios, which could then be combined. (One effect of this approach was that proposals had to make some level of nutrient reduction to get any score).
- Any sediment improvements were categorised into an index number between 1 and 1.5, which was then multiplied by the value for the nutrient reduction (this meant that assessments could increase ratings by up to 50% for high levels of sediment reductions).
- Any biodiversity improvements were categorised into an index number between 1 and 1.5, which was then multiplied by the value for the nutrient and sediment reduction (this meant that assessments could increase ratings by up to 50% for high levels of biodiversity benefits).

### 3. Evaluating the Incentive

The three broad areas of activity in the BMRG program are evaluated in turn.

#### **The 'Action Learning' approach to engage a range of stakeholders:**

There are a number of potential benefits in engaging stakeholders through the assessment and decision processes in terms of potential increases in awareness,

adoption and support. However, the broad engagement process is difficult to perform well, there are high search and transaction costs involved in each of the stakeholder types going through the different mechanisms of interest, and the 'competition for attention' makes it hard for stakeholders to focus on the incentive tools unless there are immediate actions available.

### **Contracting the implementation of the trial to industry or other stakeholder groups:**

The use of industry groups to run tender mechanisms has a number of potential advantages, as identified above. However, there are also some potential disadvantages, including:

- Additional time and costs involved in negotiating arrangements.
- Potential confusion over responsibility for different roles and arrangements.
- Closer relationship to productivity or governance issues as distinct from an NRM focus.
- Key learnings and skill development do not necessarily occur or reside in NRM group, making it difficult to get continuity across projects.

### **Development of a metric focused on nutrients:**

- The metric developed for the QDO trial represents a particular balance selected between the need to make the metric comprehensive while also making it easy to assess and operate. The metric is comprehensive to the extent that it covers two nutrients, sediment and biodiversity impacts, but may be narrow to the extent that many effects are measured by a limited number of actions. For example, the score on sediment load improvements is generated by assessment of buffer width and the stock management actions.
- Another potential issue with the metric is that no real assessment has been made of the relative importance of the two nutrients, sediment and biodiversity impacts. The metric structure that has been adopted gives roughly equal weighting to each potential impact without reference to what community preferences might be.
- The metric has not yet been tested in the field as the tender process is still underway (September/October 2006).

## **4. The "So WHAT?" Question**

- A better understanding has been developed of the potential for incentive mechanisms to help landholders achieve NRM outcomes.
- There has been good development of interest, understanding and skills in the BMRG, QDO and Growcom organisations.
- Development of the metric has focused attention on (a) gaining outputs from investment monies, and (b) assessing the outputs across a range of environmental factors.
- The final tests for effectiveness will come after completion of the QDO trial.

### **QDO Metric Design**

The key elements of the competitive tender and metric design for the QDO trial are as follows:

The key issues that have been selected for focus in the dairy case study are:

- Effluent management systems, and
- Riparian management actions.

Other potential actions relating to soil conservation, wastewater management and fertiliser application were not included to minimise the complexity of the tender and metric design process. Farmers could enter bids based on the following potential actions:

Number	Action	Ways farmers can improve their bid
1	Keeping stock out of riparian areas	Increasing the exclusion time
2	Improving the condition of riparian areas	Having a wider buffer strip
3		Improving ground cover and reducing erosion
4	Reducing risk of effluent moving from field to stream	Improving effluent management and disposal systems

Key design issues for the tender are summarised in the following tables:

### Issues in Auction Design

Issue	Considerations	Decision
<i>The number of bidding rounds</i>	Multiple rounds more suitable if coordination between landholders is required, but adds to complexity of process	Single bidding round preferred
<i>Sealed or open bid</i>	Landholders more likely to participate if their bid details are confidential	Sealed bid preferred
<i>Discriminatory or uniform pricing</i>	With discriminatory pricing, winning bidders get paid their asking level. With uniform pricing, winning bidders get paid the value of the highest bid. With uniform pricing, there needs to be more control over what actions are offered	Discriminatory bid preferred
<i>Reserve price</i>	Reserve price may be necessary to reject over-priced bids, particularly if there is limited competition.	Reserve price preferred.
<i>Equity and participation</i>	Maximum bid levels can be set to ensure maximum involvement by landholders. Having no caps on bid levels means a small number of efficient bids may get most of the funding. Landholders may increase their chances of success by entering multiple bids.	Multiple bids preferred No cap on bid levels

### Issues in contract design

Issue	Considerations	Decision
<i>Time period</i>	Longer time periods preferred, but there are	Funding period available

<b>Issue</b>	<b>Considerations</b>	<b>Decision</b>
<i>for contract</i>	government constraints on funding period available.	for 2 years – July 06 to June 08
<i>Payment periods</i>	There are benefits in tying funding to performance, but also in minimising the number of payments	3 payment points: July 06 on contract establishment, June 07 at first milestone, and June 08 at last milestone
<i>Form of security</i>	Some conservation tenders have involved high levels of security, such as covenants over land titles. Simpler agreements are more likely to be accepted by landholders.	Simple contracts to be used.
<i>Form of contracts</i>	Preferable to have simple form of contract that is easy to understand.	Standard simple contract to be used, with bid forms to be attached as a schedule when signing agreements.

The key data to be collected is summarised as follows:

<b>Factor</b>	<b>Expected impact</b>	<b>Comments</b>
<i>Nitrogen movement</i>		
Change in management actions	Estimate current and future nitrogen emissions in dung and urine	May be measured as change in cow/days per year
<i>Phosphorus movement</i>		
Change in management actions	Estimate current and future phosphorus emissions in dung and urine	May be measured as change in cow/days per year
<i>Sediment movement</i>		
Width of buffer zone	Has major filtering role for overland flows	Measure as average of metres from top of bank, and identify if one side or both.
Management actions	Reductions in stock pressure below recommended guidelines (stock allowed 30% of year)	Bonus points given if stock only allowed for 20% or 10% of year
<i>Biodiversity effects</i>		
Biodiversity assessment score <sup>1</sup>	Estimate importance of biodiversity in riparian area	Use score from BAMB to estimate a scalar
Change in condition	Extra management for weed control, erosion measures or tree planting	Use condition scores A, B, C, D to estimate a scalar

## Project 4

### Test the use of a competitive tender mechanism to achieve outcomes for ground cover, riparian conditions and biodiversity

**Name of Regional Body:**

Fitzroy Basin Association

**Research Partners:**

Central Queensland University

Environmental Protection Agency

## 1. Overview

The incentive scheme targeted remnant vegetation in the Isaac, Connors, and Mackenzie catchments of the Fitzroy Basin to protect its extent and condition, and in some cases, to enhance its condition. Although remnant vegetation is protected by legislation now, clearing rates in the Fitzroy basin have been high and sub catchments rates of remnant vegetation are as low as 35%.

Condition of remnant vegetation is not protected by legislation, and overgrazing of remnants can deteriorate ground cover, cause loss of vitality of communities, and prevent regeneration of plant species within communities. Some of the more valuable areas of remnant are on very productive soils and therefore are grazed selectively where these are part of a paddock containing other less fertile soils. The downstream impact is decreased water quality and in extreme cases, loss of communities.

As we have been using grants for several years, we were keen to compare grants and another mechanism particularly for “value for money”. Although there are a range of MBIs, many of the mechanisms listed in the table above were not realistic options for FBA. As a regional NRM group, we do not have regulatory authority to implement one of the quantity-based MBIs, and would need to work in cooperation with a government organisation with the required institutional capacity, such as a local council. Some of the market friction instruments were trialled in the National MBI Pilots Program and found to be unsuitable for implementation in Australia at this time.

This leaves price-based mechanisms and the choice of grants or competitive tenders. The later was selected so that the mechanism could be tested and examined to determine the advantages and disadvantages in comparison with the more familiar fixed price grant scheme.

A competitive tender or auction is a price-based mechanism that can be used to encourage landholders and stakeholders to provide conservation actions and environmental outcomes alongside of normal production goals. Typically, public funding is allocated through an auction process to engage landholders in the provision of public goods. The key to the operation of competitive tenders is the selection of the most cost effective bids for funding.

Use of condition as a basis for payment allowed FBA to push incentive along the Infrastructure (output) to condition (outcome) continuum in the same way as had been provided in the Biodiversity stewardship scheme.

## 2. The Incentive Trial

As the bulk of our incentive funds are delivered through grants, the new approach required us to work in an area where we have maximum flexibility and with as few as possible hoops to get to landholders. In subregions governed by subregional groups, clear and unambiguous processes are in place to allow development and approval of plans and activities with respect to grants. There are two subregions in our region which are not governed by subregional groups; FBA works directly with landholders in the Boyne Calliope Curtis and Isaac Connors Mackenzie subregions. Working in one of these subregions would allow direct access to field officers and a greater degree of control of the process. The latter subregion was deemed a better choice due to a number of factors.

The tender took place over eight months during late 2005, with tenders being awarded in the last week of June 2006.

The process was developed as a partnership between FBA, Central Queensland University, and Environmental Protection Agency. Lead roles were taken as follows with all partners participating in most aspects:

### 12. FBA

- Development of the tender process
- Decisions regarding area and natural resource asset to be addressed
- Elements of the metric so that it met our requirements with respect to for what we wanted to provide the incentive
- Development of documentation for publicity and explanation to landholders, tender application forms, etc
- Implementation of the process with landholders through the Biodiversity field officer and other field officers
- Assessment of biodiversity values and condition assessment
- Communication of results to landholders and contracting
- Monitoring
- Communication with other groups

### 13. CQU

- Provided technical advice on the development of the tender process
- Organisation of metric
- Running bids through metric
- Evaluation

### 14. EPA

- Expert input into design of metric
- Expert knowledge of biodiversity values and what should be targeted
- Training for assessment
- Scoring

A seven step process was implemented as outlined below.

### Step 1: Information and awareness campaign – April 2006

This included:

- A promotional flyer sent to all landholders in the subregion (Isaac Connors & Mackenzie)

- Media exposure
- Four information workshops

## **Step 2: Expressions of Interest – closing date 5th May 2006**

All people interested in the scheme had to complete an Expression of Interest (EOI) and were then contacted by FBA to arrange a property visit. These visits were conducted by the same people each time to ensure consistency of assessment of biodiversity values and condition and also of messages delivered to landholders: Kristy Dalton, Biodiversity Technical Field Officer, and Field Officers Katie Elder and Carrie Mayne.

## **Step 3: Property visits – May/June 2006**

The property visit delivered and collected information. Further details were provided about the tender application process and about developing a bid. In addition, information was collected about the land condition of areas to be included in a bid application. Field staff provided information on how potential bidders might improve the attractiveness of their bids, but only very general advice about how the bid price might be determined. Involvement by our staff in determining what the bid would constitute was seen as a corruption of the process.

## **Step 4: Tender applications - closing date 23<sup>rd</sup> June 2006**

## **Step 5: Tenders were assessed on 28<sup>th</sup> July and results announced - completed early July 2006**

A metric is used to assess the bids using information on condition and biodiversity values assessed by the Biodiversity Technical Officer and bid price determined by the landholder.

## **Step 6: Contracts signed – completed by end July**

Successful tenders were sent a contract to sign which sets out the payment schedule, monitoring conditions and details of the tender.

## **Step 7: Payment schedules and monitoring – to be completed by June 2008**

Landholders from 37 properties contacted FBA about the Biodiversity Tender:

- One was outside the catchment area
- 16 received an information kit but did not put in an EOI
- 20 submitted an EOI
- 16 submitted a bid
- 8 were successful

Landholders from 17 properties attended an information workshop (in many cases more than one person per property attended the workshop). Of these:

- 12 submitted a bid and
- 7 were successful

This left 21 valid bids of which nine were successful and 12 were unsuccessful. A total of 13,647 hectares will be protected for a two year period for an overall cost of

\$175,376. This represents a cost of \$12.80 per hectare or \$6.40 per hectare per year for the two year agreements.

There was a wide range of bids both in terms of the area offered and the bid prices. Bid areas ranged from under 20ha to approximately 4,500ha, with bid prices ranging from approximately \$2,000 to over \$100,000. Successful bids covered a similar range.

Included in the successful bid areas are 2,405 ha of “Endangered” (Regional Ecosystem) vegetation; 2,291 ha of “Of Concern” vegetation and 2,983 ha of mixed “Endangered” and “Of Concern” vegetation. In addition, the tender was successful in protecting areas of land with high BAMB classifications.

### **3. Evaluating the Incentive**

Overall, under the Biodiversity Tender it cost FBA \$175,376 for the two year management agreements over 13,647 hectares of high biodiversity country. If the same area had been submitted under the Stewardship Scheme it would have cost \$227,356. In other words to protect the same area would have cost an extra \$52,000 or 30% more if it had been priced under the Stewardship Scheme. The cost of the Tender was only 77% of the cost under the fixed price scheme.

A recent valuation study has estimated the public benefits for improvements in vegetation condition in the Fitzroy Basin (Windle 2006).

In the valuation survey, different populations were sampled and values were obtained from both Rockhampton and Brisbane households for a one percent improvement in the area of vegetation in good health in the Fitzroy Basin. The definition of “healthy vegetation” was deliberately kept very general so as to include a broad range of issues. The environmental outputs from the Biodiversity Tender fall well within this definition. The area of vegetation currently in good condition was described as 45% of the Fitzroy Basin or 64,500 sq km. A one percent improvement would mean an increase of 645 sq km or 64,500ha.

Overall, the general public would be willing to pay between \$255,473 and \$264,958 per year (for up to 15 years) to improve the condition of 13,647ha of vegetation in the Fitzroy Basin. This is considerably more than the \$87,688 per year (\$175,376 for two years) it cost FBA to achieve a much better outcome on the same area.

No attempt has yet been made to assess transaction costs or to compare costs of different schemes.

## Project 5

### **Reconnecting the Fragmented Landscapes of South East Queensland: Investigating the feasibility and impact of incentives to shape natural resource management practices in peri-urban landscapes**

#### **Name of Regional Body:**

SEQ Catchments

#### **Research Partners:**

Coastal Zone Australia

QNRW

Griffith University

University of Qld

## **1. Overview**

Over the last two decades the coastal landscape of South East Queensland has become increasingly fragmented with larger landholdings used for primary production or left to conservation being subdivided for smaller lifestyle plots that may or may not be commercially productive. This subdivision has significantly contributed to:

1. The interruption and thinning of biodiversity corridors;
2. Introduction and decreased management of pest species;
3. Decreased understanding and management of flood and fire regimes;
4. Increased sediment and nutrient run-off with increased intensity of development; and
5. Increased surface and groundwater usage.

In combination, these forces threaten biological diversity and ecological integrity, disrupt the delivery of essential ecosystem services, and impact upon the stability of coastal areas and marine parks. These forces contribute both directly and indirectly to environmental degradation, which threatens the health and sustainability of the region. Moreover, subdivision limits the ability for an integrated, landscape scale approach to the implementation of natural resource and environmental management strategies.

One of the core impediments to the implementation of appropriate natural resource management strategies in these 'peri-urban' regions of South East Queensland is a lack of understanding of the needs, interests and motivations of land-users in these areas. Whilst existing research provides an indication of the shifting nature of land-use practices and demographics, there is limited knowledge or understanding of how this affects the attitudes and values of land-users in relation to environmental management. Transitions in character and composition of the peri-urban landscape have engendered a corresponding social and cultural shift, and yet to date there has been no detailed study of this critical, diverse and changing peri-urban culture.

This shortcoming in our understanding is compounded by the fact that the peri-urban landscape, by definition, is a transition zone where rural and urban land-uses, activities and social processes overlap and are interspersed. Similarly, peri-urban can be defined

at multiple scales and by a variety of criteria including biophysical or built environmental factors, land-uses, administrative arrangements or economic and livelihood activities and practices.

This research project developed a social profile of peri-urban landholders in South East Queensland. In essence, this project used social research methods to contribute to a greater understanding of the specific needs, interests, motivations and goals of landholders and other residents in coastal peri-urban areas, pursuant to devising a targeted incentive package for improved natural resource and environmental management practices.

## 2. Innovation in Incentive Trials

In order to gain a better understanding of landholder needs and values, a research team was established through a partnership between SEQ Catchments, the Coastal Zone CRC, and the project researchers Susie Chapman, John Mackenzie, James Whelan, Peter Oliver and Claudia Baldwin. Through project design discussions, the research team developed the following research method, drawing on ‘stakeholder analysis’ and ‘community-based social marketing’ techniques:

1. Literature review of relevant regional, national and international learnings on coastal peri-urban land uses and landscape transition, community-based social marketing, and the use of incentives to improve NR&EM practices.
2. Explore and map demographics and land use patterns in peri-urban areas of South East Queensland from existing data including the Australian Bureau of Statistics, Social Atlas, local council data and relevant NR&EM strategic plans.
3. Determine priority case study areas as defined by land use patterns, demographics, natural resource condition target (RCT) priority, partnership potential and existing NR&EM projects.
4. Implement data collection and analysis tools consistent with stages 1-4. This included ethnographic case-study analysis and the design and implementation of a region-wide survey to identify the responsiveness to NR&EM incentives amongst peri-urban landholders of South-East Queensland in a geographical context.
5. Report research findings in meaningful groupings with spatial reference against NR&EM issues, enablers and barriers.
6. Plan a suite of incentives and tools in collaboration with SEQ Catchments staff, local and state government, community groups and interested industry based on survey and other results. Tools were assessed for appropriateness using the principles and processes of Community-Based Social Marketing.
7. Monitor and evaluate the research findings for appropriateness, effectiveness and efficiency through the establishment of an M&E database and a learning strategy and a communications plan.

This research design was expanded to identify both the research strategies and project outputs, identified below.

<b>Seven Steps of Stakeholder Analysis</b>	<b>Research Strategy</b>	<b>Project Outputs</b>
1. Define aims and dimensions of analysis	Consultation with SEQC staff Review of literature GIS Mapping	Scoping study Methodology paper Confluence map Peri-urban field checklist

<b>Seven Steps of Stakeholder Analysis</b>	<b>Research Strategy</b>	<b>Project Outputs</b>
2. Explore the context	Review of literature Media analysis Field observation Peri-urban symposium	Media Analysis paper Symposium Review Photo-essay
3. Identify analysts and analysis teams	Consultation with SEQC staff Peri-urban symposium	
4. Identify and approach stakeholders	Project partnership meetings Focus groups	Phone survey and field work data collection design
5. Collecting data	Participant and field observation Community immersion studies Focus Group	
6. Organising data	Qualitative data analysis	Stakeholder Typology
7. Presenting Outputs		Project report Monitoring and evaluation framework Learning strategy

At the outset of the study, a Reference Panel was established with representation from community members, SEQ Catchments staff, researchers and local and state government agencies to provide ongoing consultation, support and direction to the research team throughout the project. This group met twice, then once as part of a symposium to define the peri-urban zone, and finally as part of a broader opportunity to view the outcomes of the project.

Through the course of the research, more than 550 stakeholders in the peri-urban zones of South East Queensland were surveyed, interviewed, or participated in focus groups as part of this project. Participation details are tabled below.

<b>Number of Participants</b>			<b>Total</b>
Case Study Catchment Area	Project Partners Meeting	Focus Groups	Interviews
Scoping/Context			53
North Maroochy	5	33	12
Moggill	6	12	13
Tallebudgera	5	16	12
SEQ			380
<b>Total</b>	<b>16</b>	<b>61</b>	<b>470</b>

### 3. Evaluating the Research

The major outcomes of the research against the project milestones included:

1. **Scoping Study:** a literature review and compendium of past and current projects pertaining to peri-urban NR&EM, incentive design and community-based social marketing.
2. **Context Analysis:** a context analysis of the social and cultural dimension of selected peri-urban areas in South East Queensland, which included media analysis, a photo essay, field observations and symposium proceedings.
3. **Peri-Urban Map for SEQ:** An agreed definition of the peri-urban zone in question, with mapping to assist with the identification of the area in SEQ.
  - The spatial dimensions of the analysis were determined through the use of SEQC's GIS mapping system, where a confluence map of the peri-urban zones of SEQ was produced based on key peri-urban indicators. The resulting map was then used to identify potential case study and trial locations, based on designation of key priority NR&EM areas as defined by SEQC's regional plan.
  - A symposium was held in March 2006 to shape the direction of the project and draw together the knowledge and insights of a range of stakeholders, planners, managers and researchers. The social and cultural dimension of the peri-urban zone was explicitly addressed in this symposium.
4. **Incentives audit:** An audit of incentives for improved natural resource management appropriate to the peri-urban zone in SEQ.
5. **Peri-Urban Incentives Platform:** an integrated incentive design and delivery tool for natural resource and environmental management agencies, which consists of a 'living' database of socio-economic incentives applicable in the peri-urban context. The main elements of this platform are:
  - A toolkit of incentives for sustainable natural resource management in the peri-urban zone, with details to guide their implementation, and online links for further development;
  - A suite of supporting resources for environmental managers and others interested in incentives and the design of CBSM strategies for environmental management in the peri-urban zone.
  - A monitoring and evaluation database to ensure the elements of the platform are subject to revision and continual improvement through incorporating the social learnings derived from their trial and implementation.

The M&E aspect of the platform was conceived as a tool for NRM managers to plan, monitor, evaluate and communicate their experience with incentive package choice and delivery. This is to be developed into an access database and ultimately used through the VISTA web-based reporting tool.

In consultation with SEQC staff, the project team ascertained that a computer-driven database model of the tools cross-referenced according to stakeholder types, barriers to implementation, enablers for implementation and NR&EM issues would be the most effective means of communicating the findings. The database approach was supplemented with a monitoring and evaluation framework to ensure that the social learnings from the implementation of the incentive programs could be captured and

inform future incentive design projects. The researchers also identified a series of reference tools that would be useful to SEQC as a basis to interpret the context in which the tools could be used, and to integrate the database and M&E framework into a coherent community-based social marketing strategy. The resulting platform is soon to be made publicly available of the SEQC website.

Unfortunately due to time constraints, the project did not achieve the trial of incentive delivery packages using Community-Based Social Marketing as anticipated. This is currently happening in the Gold Coast area using the tools developed through this project, and will be an on-going extension to the study. The implementation of the developed communication plan and learning strategy will be integral to the extension of the work which has begun with this research.

A number of aspects of the project assisted in the effectiveness of the research and the utility of the research findings. SEQC's team of Community Partnerships Managers (CPMs) brought to the project a well-developed sense of social and cultural context as a result of their extended personal and professional experience in peri-urban SEQ. Through ongoing consultations and discussion, CPMs, project researchers and other SEQC staff built on this foundation through the data collection, analysis and output activities. Many of the relationships developed between the research team and the peri-urban communities were only possible to established relationships with SEQC staff. So too the involvement and commitment of the Reference Panel, a number of whom participated in focus groups and provided valuable contacts for achieving community support for the project.

The development of the Incentives Platform was not anticipated from the outset of the project. If properly used this will embed the project outcomes into the fabric of our organisation and assist our regional partners to apply an effective adaptive management framework with our investment delivery.

#### **4. The “SO WHAT?” Question**

The web-based Peri-Urban Incentives Platform is currently being uploaded on to the SEQ Catchments website to enable SEQC staff and the broader community including local government to use the tools and build on the learnings of this study through experience and further studies, some of which are underway. A monitoring and evaluation tool was one of the products of this study, designed for accessible evaluation and sharing of experiences. This is yet to be fully developed as an access database and will be made available through the VISTA reporting tool when it is functional. This will be helpful not only to managers within the SEQ region, but those across the nation, some of whom are contacting SEQC for the outcomes of this project. This project forms an excellent basis of a long-term programme for the important transitional zone that will continue to improve if we use it regularly and wisely.

The project has also been incorporated into other NR&EM forums in SEQ. For example, the Consortium for Sustainable Peri-Urban Agriculture, an initiative of the Department of Primary Industries and Fisheries, are undertaking an extensive series of workshops to identify any existing research gaps in the agricultural component of the SEQ peri-urban zone. This initiative uses this study as a basis for its considerations.. Findings from this project have been communicated to the JSC, presented to the Queensland Landcare Conference, and incorporated into SEQC programs on the Gold and Sunshine Coasts.

The findings of this project will be presented at the “Urban-Rural Interface Conference” at Auburn University in the United States of America in May next year.

Within the next two months we expect to be able to synthesise the outcomes of this project with those of other SEQC research projects with relevance to the peri-urban zone:

- SE03 – which mapped social capacity of stakeholder groups in peri-urban SEQ
- AgSIP14 – which examined the impacts of peri-urbanisation on biophysical resource condition and trend; and
- AgSIP18 – which looked at engagement and extension strategies in peri-urban SEQ.

We will then be analysing for knowledge gaps in our understanding of this area, and seeking to address any discrepancies. The implications for incentive and social marketing developed through this project will complement the other research and development activities towards a best-practice model of sustainable NR&EM in peri-urban landscapes. The innovativeness of this is recognised by SEQC, and we will be undertaking workshops in-house to learn to use the tools made available through this project. Broadening access and understanding of this work will be assisted by funding from Coastal Zone CRC, to enhance the learning and communication strategy.

To ignore the valuable work presented by this study in identifying and contextualizing the diverse drives of those that live in the dominant transitional peri-urban zone is to run the high risk of failing to engage the majority of these residents in wise natural resource management while there are still landscape assets to preserve. If this meaningful engagement does not happen in the next five years, the landscape will become increasingly fragmented as the divide between residents and their natural landscape continues to grow. The identity and culture of local semi-rural communities will continue to be eroded and locally sustainable enterprise in this zone will be difficult to achieve. At the very least, tax-payers funds will have been spent with questionable impact, the faith of the valuable partners involved will have been eroded and we will struggle to achieve our Resource Condition Targets. The once rich biodiversity and water quality assets of the great South east may be irretrievably lost.

## Project 6

### **Designing Incentives for Achieving Biodiversity Targets in the Burdekin Dry Tropics NRM Region with specific emphasis on the Bowen Broken and Bogie River subcatchments**

**Name of Regional Body:**

Burdekin Dry Tropics NRM

**Research Partners:**

River Consulting  
James Cook University

## 1. Overview

### **What was the biophysical process to be addressed through the research for incentives?**

The focus was on on-farm biodiversity conservation on cattle grazing properties in the Bowen-Broken-Bogie rangelands within the Burdekin Dry Tropics region. This region is specifically identified as having ecosystems of high and critical biodiversity value, yet only a minor proportion of ecosystems are contained within formal nature reserves. Biodiversity conservation is therefore largely reliant on landholders (grazing leaseholders) managing their land in a manner that does deliver biodiversity conservation outcomes. However, with rapidly increasing debt levels among graziers in the region, there is an increasing risk that landholders may not be able to deliver these conservation services.

### **What were the constraints identified and land management objective desired?**

The research was based on the notion that farm debt is a key impediment to the implementation of on-farm biodiversity conservation practices – and other NRM and best management practices. Farm debt had been nominated by landholders in a survey in 2002<sup>1</sup> as a key financial impediment to the implementation of NRM practices.

### **How did these questions inform the approach to social research for incentive mechanisms to be trialled?**

The research focused on designing and exploring an incentive instrument that would specifically seek to ‘break the nexus’ between farm debt and biodiversity degradation from grazing intensification.

The methodological approach was principally based on a semi-structured interview conducted with (non-corporate) grazing landholders in the study area. The research team visited the properties and conducted interviews with the property managers on farm. The interviews were further complemented by a short survey, which aided some

---

<sup>1</sup> Greiner, R. Stoeckl, N. Stokes, C., Herr, A., and Bachmaier, J. (2003) *Natural resource management in the Burdekin Dry Tropics: social and economic issues*. Report to the Burdekin Dry Tropics NRM Board. CSIRO Sustainable Ecosystems: Townsville.

quantitative estimations. Finally, a data mining exercise was undertaken of the 2002 landholder survey data to see whether a link between farm debt and NRM implementation could be statistically supported.

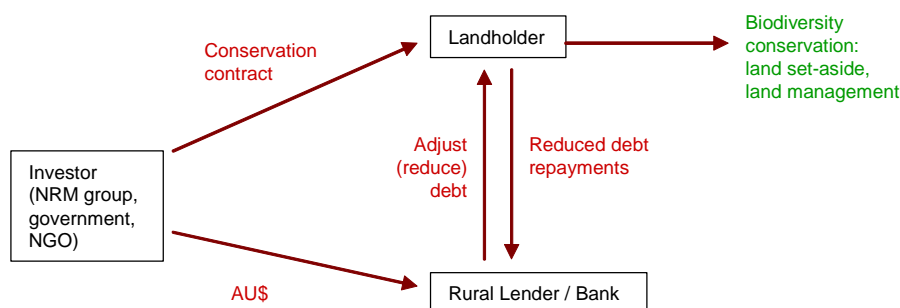
The project also pursued a second incentive, which is also not commonly utilised in NRM: public recognition of landholders who generate significant conservation outcomes. Public recognition is a combination of an award and a suasion measure. It provides appreciation for those landholders who successfully and pro-actively conserve biodiversity on their properties. They are ‘rewarded’ for their efforts through public recognition of the outcomes, which will serve to maintain their intrinsic motivation to conserve biodiversity. At the same time, they serve as examples to other graziers that demonstrate the successful co-existence of production outcomes and the delivery of other ecosystem services, specifically biodiversity conservation.

This public recognition incentive was pursued in further conversations with a subset of landholders who participated in the debt-for-conservation part of the research. Some of their experiences with biodiversity conservation and achievements were written up into a series of six ‘landholder stories’.

### How were the alternatives ruled out?

This research was not about choosing the best out of a known suite of incentives. Rather, it was about scoping up a possibly new incentive. The incentive instrument under investigation was a debt-for-conservation swap. Debt for nature swaps have been used in the international arena to remove developing country debt in return for that country investing in nature conservation activities. At the domestic level, the incentive needed to be conceptualised in the first instance, and its efficacy needed to be assessed.

Figure: Illustration of the domestic debt-for-conservation swap concept



Debt-for-conservation swaps were assessed against a number of policy design criteria. In summary, they were found to be possibly effective in achieving biodiversity conservation and efficient because they might ‘purchase’ conservation areas – as part of existing properties – for the duration of a contract period at less than market value of land. They were also rated as durable, a rare trait, given that the transaction (debt relief in exchange for conservation area) would have lasting impact and would not rely on recurring funding and payments. However, the incentive was found to be flawed because it was inequitable (only landholders with debt are eligible to participate) and prone to cause unintended and possible perverse or counter productive consequences. Firstly, the cause of debt is unknown and might be due to poor farm and land

management decisions. Secondly, many landholders use farm debt as a key strategy for building farm assets due to associated taxation benefits. It was found, for example, that some landholders would use an improved equity situation to invest in purchasing more land. It was thus concluded that while conceptually appealing, the debt-for-conservation swap would not be a suitable incentive, specifically in the context of rapidly rising property prices.

### **What was the approach decided upon? What were the reasons?**

Rather than seeing through the implementation of debt-for-conservation swaps and negotiating the concept up with key stakeholders, including governments and rural lenders, it was decided to invoke a stop-gap provision in the project and subsequently focus on stewardship payments as another possible financial incentive to support on-farm biodiversity conservation.

The interviews with landholders revealed that there was a majority of landholders interested in participating in publicly telling their land management story. It was, therefore, decided that it would be worth while selecting six of these landholders to document their stories and pursue this public recognition and suasion incentive.

## **2. Innovation in Incentive Trials**

### **How did the research contribute to the development of future incentives?**

The level of innovation in the project was very high, specifically at a conceptual level. As stated above, the research actually managed to design an incentive, which has never before been explored in the Australian context, and of which only one application is known in the US-domestic context. Participants, stakeholders and processes were considered and a rigorous assessment was conducted, in consultation with landholders as possible participants, of the efficacy of the incentive. .

While the incentive did not proceed to implementation, it is worth having the concept explored and 'ready to go' for a quite conceivable future set of circumstances where

- Farm debt is higher and equity is lower than today
- Farm debt constitutes a (serious) equity issue, not just a cash flow issue, and triggers farm sales, thus putting pressure on land values
- Farm debt – and associated financial requirements – contributes significantly to intensification and natural resource degradation
- Money for NRM is available at a specific point in time and needs to be expensed with maximum efficiency.

The incentive has some inherent strengths. Some of the possible weaknesses of the incentive – specifically in relation to strategic investment behaviour of participants – can be addressed in contract design.

The fact that a majority of landholders expressed an interest in sharing their stories and a selection of landholders were willing to publicly tell their land management stories indicates that such a public recognition incentive, as a “non-monetary reward”, is indeed an effective incentive for landholders. The incentive may have also:

- Increased the intrinsic motivation of these landholders to carry out conservation practices,
- Increased other landholders awareness of on farm conservation programs and practices; and,
- Encouraged other landholders to participate in on farm conservation activities.

However, to know how effective this incentive was to achieve these outcomes would require further evaluation.

### **How was the approach selected different from others (with an emphasis on innovation)?**

The research wasn't primarily about trialling but rather about conceptualising.

## **3. What was Done**

### **Who delivered the research?**

The research was delivered through a collaboration of River Consulting and James Cook University (ACTFR), namely Dr Romy Greiner and Allyson Lankester.

### **What role did communication play?**

Communication played a major part in the research. Communication involved several levels and aspects:

- Researchers with BDTNRM and NRM&W – through the project discussion group
- Researchers with landholders
  1. Letters, face-to-face interviews with landholders on their properties, telephone follow-up
  2. Landholders survey
  3. A presentation is planned in the case study region to present the research outcomes
- BDTNRM with landholders:
  1. A special newsletter is planned which will contain the landholder stories developed as part of the research
  2. The BDTNRM will play an active role in the research presentation to landholders

### **How were participants selected to participate?**

Participants were drawn from the entire population of family-operated grazing enterprises within the rangeland areas of the Bowen Broken Bogie catchments. Corporation-owned operations were excluded since these farms have access to financial resources within the corporation, whereas family farms are reliant on rural lenders for capital resources. Specific landholder addresses and telephone numbers were obtained through a contact database compiled by previous extension officers in the region and the White Pages Directory. A total of 52 grazing properties were identified to be family operated companies, of which 24 participated in the research (46%).

## **4. Evaluating the Research**

### **Did it achieve the objectives?**

Yes all set objectives were met.

- It provided a most insightful – and peer reviewed – analysis of debt-for-conservation swaps.
- It demonstrated the diversity of conservation stories and experiences that landholders have and are willing to share.
- It further assisted in clarifying matters related to conservation stewardship payments.

### **What elements made it work? Why?**

- The geographic focus of the research was in a region that had not previously received attention by social research. The research team did not encounter survey fatigue and succeeded in generating interest by landholders to possibly participate in future conservation incentive programs.
- Previous extension staff had developed good rapport with landholders and previous devolved grants were seen to be favourable by landholders. This may have helped landholders to be more open to having input in the design of future incentives.
- A research team that worked and communicated well together.

### **What elements did not work as well? Why not?**

The time frame and objectives of the research project did not allow enough time to thoroughly investigate the feasibility, motivation and capacity of current institutions to support the delivery of the incentive mechanism.

### **Do you think it provided value for money?**

The quality of the information received as part of the project demonstrates great value for money. Additional outcomes and learnings provided by the project further justify the project cost.

### **How was the capacity of the regional body enhanced through the undertaking of the research? Through the research findings?**

There has been close interaction between the research team and various staff in the office of the BDTNRM, including project officers and GIS staff. Financial incentives are particularly suited to BDTNRM and have been well received by graziers in the BDTNRM region. Distributing incentives through an auction system is the most efficient and effective method of delivery.

Debt for conservation swaps were identified as not a useful tool for use in the BDTNRM region. A need for more education and awareness directed to landholders and the community on the following topics has been identified;

- The concept of biodiversity and conservation values, and the conservation of biodiversity;
- Increasing the financial and property management skills of landholders in areas such as biodiversity conservation and production outcomes and fire practises;

- Promote the awareness of other existing biodiversity conservation programs available.

## **5. The “SO WHAT?” Question**

### **Could the outcomes been achieved in other ways? What would have been the consequences of the other approaches?**

Focus groups could have been used as an alternative research approach; however, this would have possibly limited the range and number of landholders and range of situations to learn from. Focus groups may have saved time and may have created discussions amongst participating landholders about issues in relation to the incentive, which would have been valuable. However, there are two key reasons why focus groups might not have worked in this instance. Firstly, for a focus groups to work successfully at least 4-6 participants are required. It might have been difficult to bring together landholders in that fashion and it might also have caused a lesser participation rate. Secondly, for focus group discussions to work effectively, participants have to have a good conceptual understanding of the issues. It emerged during the interviews that some landholders have very little understanding of key concepts such as biodiversity, natural resource management, and incentives.

A questionnaire survey could have been an alternative approach, but the response rate would have probably been lower and it would not have allowed an in-depth look at the issues involved with the incentive mechanism. Information provided by respondents may have not been so honest and rich.

### **Learning for next time – Would you use it again? What elements would you change? If not, why not?**

The research approach and topic worked well. The fact that one of the proposed incentives (landholder stories) was implemented is a success. The fact that the other incentive was not (yet) implemented does not detract from this success. Landholder interest and participation were good- and have already been the catalyst for further NRM activities and consultation.

We would certainly support further activities of a similar kind.

## **Project 7**

### **Improved Salinity Management for the Nebine / Mungallala / Wallam catchment.**

**Name of Regional Body:**

South West NRM Ltd

**Research Partners:**

University of New England

#### **1. Overview**

Investment into the prevention and management of salinity in the South West NRM region is expected to occur predominately within the Nebine / Mungallala / Wallam catchment, where the potential salinity hazard has been identified as requiring priority action (i.e. a priority investment region for National Action Plan for Salinity & Water Quality investment). Elsewhere in Australia, salinity has caused significant losses to production systems, degradation of soils and remnant vegetation and decline in surface water quality.

Factors contributing to dryland salinity in southern Australia such as high winter rainfall and broad scale removal of deep-rooted, perennial vegetation, causing rises in shallow groundwater tables, do not occur at the same rates in the Mulga Lands of South West Queensland. Soils of South West Queensland have naturally high salt loads because of parent rock geology and from that which occurs naturally in rainfall. Exposure of clay sub-soils due to erosion is believed to be the primary cause of secondary salinity in the region. Salt incursions have also been identified occurring adjacent to bore drains where water is leached laterally through the soil; where water floods out of drains and is evaporated; and where free flowing bores drain directly into natural watercourses.

Land holders are concerned about the social and economic impacts on grazing enterprises where State Government mapping has identified high dryland salinity hazards despite there being no recognised occurrences of salt discharge areas (dryland salinity) that cause visible degradation on the ground in the South West NRM region. Few land managers in the region have examined the implications of salinity and most consider its potential to impact on grazing land management and natural ecosystems to be low.

Logically, geology, climate, soils, surface water, groundwater and landform are crucial biophysical attributes to be considered when assessing the nature, extent and likelihood of dryland salinity. Impacting upon these inherent attributes are the influences of historical land use (Power and Biggs, 2003). A problem for South West NRM is that the current state of information about salinity risk, extent and impact is patchy at best. There are few piezometers through the catchment, which are subject to ad-hoc recording and, as noted above, there has been no directly observable evidence of dryland salinity.

The challenge for South West NRM is to deliver information and allocate investment so the short and long term effects of salinity can be understood and managed

appropriately. The aim of this project is to encourage land managers to assess secondary salinity risk through simple evaluations of key factors including soil salt load, groundwater levels and changes in water balance and to build land manager capacity to increase the uptake of incentives to manage this risk.

The project employed structured stakeholder dialogue as its underpinning approach. The use of this is based on the notion that it is only when land managers actually engage with natural resource management issues, and think about what risk it might actually pose for them, their businesses and their local environment, that they would be motivated to take action to reduce this risk.

## 1. Innovation in Incentive Trials

Scientific knowledge on its own does not serve the purpose of increasing community participation in salinity management - if it points in directions that don't seem to make sense to locals, their usual response is to ignore it. Government regulation can force people to behave in certain ways (e.g. to not remove vegetation), but it can also cause considerable angst and people tend to ignore it if it doesn't suit them. Incentive payments are another approach used to bring about desired behaviour changes. However, they can only work if they provide enough added incentive to overcome inertia for change.

With the apparently prevailing perception in the catchment that salinity is not a real threat, the inertia is high. Given the existing knowledge gaps, it was identified that any incentive mechanism needs to include elements of landscape assessment, research and landholder capacity building to assess salinity risk, so potential investment in management actions will achieve intended and beneficial outcomes.

The Centre for Ecological Economics and Water Policy Research in conjunction with South West NRM, facilitated the following research and structured stakeholder dialogue as part of the SE05 project:

- Review of documents about salinity in the area;
- A series of workshops with stakeholders in selected focus areas;
- Selected property visits to further engage landholders individually;
- A survey of stakeholder perceptions, social attitudes and knowledge about salinity;
- Circulating draft reports from various stages of the project to stakeholders;
- Consulting with land managers about the usefulness of a toolkit to assess salinity risk;
- Creation of a final report with recommendations for increasing uptake of incentives.

The research resulted in three major outcomes for the development of future incentives. The first was tools to increase awareness in the community about salt in the landscape and the potential impacts of increasing salinity. This included the development of the salinity handbook for the Nebine / Mungallala / Wallam catchment which conveys simple information about salinity processes and outlines steps to identify and address potential salinity issues.

The second outcome was the creation of funding guidelines for salinity remediation and prevention that were introduced in round three of FUTURESCAPES (South West NRM on-ground incentives program) Applicants who register an interest in salinity

remediation or prevention are asked to undertake a preliminary assessment to identify salinity risk in the project area and potential actions to address the problem.

Thirdly, the inclusion of salinity action planning in the Grazing Land Management (GLM) / PLANSAPES workshop series delivered by DPI&F (who facilitate the Edge Network's Meat and Livestock Australia, GLM program) and South West NRM. During the GLM / PLANSAPES process landholders are asked to consider salinity at a sub-catchment scale and develop targets that the group can work toward and seek investment for, which subsequently progresses regional targets as identified in the Regional NRM Plan.

A barrier to the uptake of incentives, planning and awareness of salinity as a priority issue continues to be a distinct lack of credible scientific information that enables a clear understanding of the existing resource condition and which demonstrates the actual risk of dryland salinity throughout the region.

Scientists need opportunities to gain further insights about the nature of the landscape from landholders and thus to better inform their subsequent scientific investigations. Landholders can usefully learn from science about signs and symptoms of salinity as an aid to helping them avoid unnecessary landscape degradation. The project team themselves (U.N.E and South West NRM) enhanced their understanding about how to strategically manage for salinity, including improved knowledge about the mechanisms of salinity in this region, and the ways that local landholders relate to it. However for more informed investment decisions a sounder scientific basis to manage salinity is required.

The community engagement undertaken as part of the process included three workshops in the lower sections of the Nebine Creek at 'Black Bank', on the Wallam Creek at Bollon, and at Mungallala in the upper Mungallala catchment. The primary focus of these workshops was to come to identify the prevailing understanding, attitudes and activity of landholders with respect to salinity in the landscape. To this end the workshops were very participant focussed, involving structured stakeholder dialogue.

A field trip in May was a scientific scoping, capacity building and direct landholder interaction activity. Whilst the workshops held in March were primarily a listening exercise, gaining as much information as possible about landholder perceptions, this field trip involved an attempt to test and observe some of those perceptions in the field.

In June, two field days were held, at Culgoa Floodplain National Park on the Nebine Creek, and on a property near Bollon. The explicit intent of these field days was to present techniques to landholders for the assessment of landscapes and soils in the context of possible or actual salinity expression. The draft landscape assessment booklet developed during this project was given to participants, who were asked to provide feedback on its usefulness and applicability to their situation.

One of the participants at the field days was Andrew Biggs (NRM&W), who came equipped with a hydraulic soil coring rig. His expertise in the understanding and analysis of soil and landscape processes was shared with landholders and other participants, and served as a strong science-based underpinning for the information that was shared at the field days.

## 2. Evaluating the Research

The research project was a very important first step to increase understanding of salinity in the Nebine / Mungallala / Wallam catchment. Objectives achieved include: a literature review; three community workshops and two field days; a survey distributed to approximately 197 households; draft maps of priority primary and secondary salinity for use in prioritising threats; protocols to measure soil salinity in a 'Salinity handbook for the Nebine / Mungallala / Wallam catchment' and a report recommending appropriate action to improve awareness and uptake of incentives for salinity prevention and remediation. Recommendations were also made on a terms of reference for the technical phase of the salinity research which includes setting resource condition targets for surface water salinity and extent of land salinity.

Other objectives of the SE05 project that were progressed but not fulfilled due to technical and resource constraints include analysis of saline scalds using remote sensing to identify expressions of salinity remotely; and a review of existing piezometer grid and NR&M bore logs to assess current groundwater depths, quality and trends.

The major positive result from the project was the engagement of landholders to determine their understanding, needs and input into government investment into salinity management. This consequently resulted in the submission of five projects in the Nebine / Mungallala / Wallam catchment which sought funds via Round 3 of FUTURESCAPES to manage areas of secondary salinity (four scald reclamation projects and one potential dryland salinity project). The assessment process has identified the need for more detailed guidelines about what is acceptable to be applied for funding given that rehabilitation of scalded areas (although salt affected) is not considered a cost effective project that will produce significant environmental outcomes.

One of the elements that didn't work so well throughout the project was in relation to the uncertainty within both the research team and the community about the logic of salinity hazard. Gaps in technical knowledge, particularly concerning shallow groundwater flow systems; the impact of broad scale clearing and other modes of vegetation management; and the significance of scalding and bore water impacts as forms of secondary salinity; hindered the delivery of awareness raising activities in the community about correct courses of action.

Secondly the survey generally received a relatively poor response compared to other surveys. There are a number reasons why this may have been the case, including logistical issues, broader psycho-social constraints, and possible perceived framing bias. That said, the responses that were obtained provided important information that the understanding and perceived relevance of salinity within the catchment is very limited with a majority of respondents considering salinity as of very low relative importance.

From South West NRM's perspective, the SE05 project did represent value for money as the regional body has a lack of human and technical resources to undertake a comprehensive assessment of community perceptions of salinity. Engaging an independent research organisation to partner in the project was important in achieving a level of trust with community participants who were generally distrustful of State Government activities, particularly in relation to vegetation management legislation and the role of the '*Salinity Hazard Map for the Queensland Murray Darling Basin*' (State of Queensland. Department of Natural Resources and Mines (2002)).

Given that South West NRM's knowledge and experience regarding salinity is relatively low, the project was a good basis to effectively invest funding from the National Action Plan for Salinity and Water Quality. Due to the insidious nature of salinity, the costs related to geophysical or hydro-geological investigations were cost prohibitive to be included in this project, although this is where the significant gaps in our knowledge exist. The SE05 project was an valuable introduction to identify knowledge gaps and begin involving the community in understanding salinity issues for involvement in future projects such as; the Bureau of Rural Sciences 'Community Salinity Stream Monitoring in the Queensland Murray Darling Basin'; and projects outlined in the South West NRM Regional Investment Strategy.

Attendance at workshops increased the research teams understanding of the confusion that exists within the community and allowed initial discourse about how to address potential salinity issues. Staff also gained a better understanding of secondary salinity processes and the information needed in order to plan and invest in on-ground salinity projects. The capacity of South West NRM has increased through involvement in the project although this may be lost unless key employees involved in the project who have now left the organisation are replaced with people who can quickly comprehend the situation.

### **3. The "SO WHAT?" Question**

Addressing salinity in South West Queensland is a unique problem and other approaches to manage the threat that are common elsewhere in Australia can not be readily adapted to the South West NRM region. Given the same opportunity we would use a similar approach to initiate discussion and understanding of the issue to key stakeholders. As the directive of regional NRM organisations is to engage community in key NRM decision making processes, South West NRM consider the stakeholder engagement approach to be valuable in progressing such an important, yet poorly understood issue.

Other approaches such as designing a round of funding targeted at salinity on-ground works would have been difficult given that South West NRM are unsure about the probability of rising groundwater and doubt about the significance of public benefit that can be derived from projects such as scald reclamation. Until South West NRM acquires robust information and tools (e.g models) to inform decision making processes we are satisfied that a number of objective assessment methods are in place that allows landholders to address salinity issues.

South West NRM would use the same approach in the future where distinct lack of information and poor community acceptance of an issue prevailed. Issues such as climate change and biodiversity management are two that come to mind where extensive community engagement processes could be justified. Engaging the community in decision making processes for investment is also likely to take place in the development of the next iteration of the Regional NRM Plan and Investment Strategy.

## **Project 8**

### **Targeted Vegetation Incentives Project “Bush Tender” Queensland Murray Darling Committee, 2005**

#### **Name of Regional Body:**

Queensland Murray Darling Committee

*“The objective of this project is to maintain and improve biodiversity by retaining native vegetation in the form of native grasses and/or regrowth and unmapped remnant vegetation in different vegetation types.”*

#### **1. Introduction**

- Qld Murray-Darling Committee Inc. – Targeted Vegetation Incentive Pilot conducted across Border Rivers and Maranoa Balonne catchments.
- The objective of this project is to maintain and improve biodiversity by retaining native vegetation in the form of native grasses and/or regrowth and unmapped remnant vegetation in different vegetation types.

#### **Assessment Criteria**

- Area with less than 10% Remnant vegetation – from RE mapping
- Area with moderate to high salinity risk – from Salinity mapping
- Existing Landcare and Sub-catchment planning areas were excluded to reduce confusion of program funds

#### **2. Achievements against Objectives**

- This area was chosen for its high asset values of good agricultural soils and of concern or endangered vegetation communities coupled with identified threats of moderate to high salinity risks and extensive clearing. The project was identified as contributing to RCT1, RCT2 and RCT6 in the Vegetation & Biodiversity theme of the NRM Plan.

#### **Communication and Marketing Strategy:**

- Timelines were developed for submission of both Expression of Interest and Tender Applications
- A marketing strategy was developed including development of an Information package containing: an introductory letter, listed criteria, maps, and Expression of Interest forms.
- Numbers of landholders in the targeted areas were identified with the relevant postal/ mail runs. A total of 665 information packages were printed and mailed out to the target area.
- Additional publicity in the form of local newspaper articles and radio interviews were conducted to gain a wider response.

- Two information sessions were advertised and conducted with interested landholders in Tara and Moonie.

### **Tender Delivery:**

- A project officer was contracted to carry out the “Bush Tender” pilot, in consultation with QMDC staff
- Expressions of Interest (as above) were called, Tender documents were forwarded to those submitting Expressions of Interest.
- 7 landholders submitted EoI and were followed up with personal contact either by a property visit and site specific biodiversity assessments or for those who were ineligible because of not meeting the listed criteria, above e.g. because of location outside the target area or inappropriate vegetation (e.g. existing recorded remnant), a letter explaining this was forwarded.
- 5 landholders submitted Tenders and received correspondence to advice that they were to be assessed under the stated process.
- Biodiversity-site assessments were completed and maps developed covering the vegetation within the tender area. Discussions regarding the proposed management arrangements and monitoring requirements were held with landholders prior to the submission of their Tender.
- No discussions regarding the development of budgets for Tenders were undertaken, other than to point out that landholders needed to calculate the costs associated with the Tender area.
- Assessment criteria were developed to prioritize the tenders from best to least value for money on a \$/ha basis using biodiversity score values, assessing the proposed management arrangements, eligibility of tenders based on location within the target area, feasibility of long term monitoring and evaluation. Other considerations (not criteria) for assessment were; current market values of land, recorded values of similar tender projects; and costs of other NRM projects (not tenders) with similar objectives e.g. devolved grants.
- An assessment panel was chosen, including technical staff, project officer, landholder, regional coordinator. (5) people in total
- All tenders were assessed by the panel with notes for follow up regarding specific management and monitoring eg monitoring chemical spillage from an airstrip site or erosion of a gully.
- Three landholders were successful in the tender process and 10 year management contracts were developed and signed off with specific management conditions including; limiting stock access, fire management, weed and pest management and ongoing monitoring programs will be established.
- Payment of between 50% and 70% of Tender bid is paid at contract signing, 30% paid on completion of works and then the remaining 20% following the first years monitoring.

### **3. Unintended Outcomes**

- One of the properties participating in the Bush Tender was also negotiating with EPA under the “Nature Refuge” program, which resulted in a cooperative program of monitoring to ensure a better coverage of sites and no unnecessary monitoring was requested. The declaration of a Nature Refuge over the whole property (which is binding on title) has reduced the risk to QMDC of the property being sold and agreed management actions not implemented by a new owner.

## 4. Partnership Formation

- With the assistance of Central Qld University (CQU), a tender methodology and documentation were developed to suit the locality, using formats and templates supplied by CQU which were modified to better reflect the objectives.
- Joint projects have been designed focusing on rangeland management and MBI's in partnership with SW NRM regional group, CSIRO, Environment Australia, South Australian Environment Dept and Desert Knowledge CRC entitled "MBI & Metric Uptake/Adoption Workshop", "Biodiversity Incentives" and "Rewards for Biodiversity".

## 5. Learnings

- The learnings from this project have been:
  1. The requirement to have very clear objectives for outcomes and outputs
  2. Well designed and developed project/time management schedules
  3. All documentation e.g. contracts formats, assessment schedules must be in place prior to commencing.
  4. Promotional period for media and information sessions needs to be extensive to encourage landholders to be involved and allow for school holiday periods
  5. Personal contact via phone, information sessions, property visits and assessments, contract negotiations are very important.
  6. Views differed markedly on the appropriate process to conduct a tender depending upon which resource economist was consulted. Specifically for advice on setting reserve prices.
- Information gaps in this process included: the knowledge and capacity of landholders of environmental tenders; reserve prices; whether the recent VIP promotion in the area would have an influence.
- There are some risks associated with funds being allocated to landholders under a legal contract for management actions and not being binding on a new owner should the property be sold.

## 6. Implications for the Plan, RIS and future direction of the regional NRM body

- Recommendations: Points 1 – 5 in the Learnings above should be addressed prior to commencement of additional MBI's. The evaluation of the project must be well documented and promoted to assist staff capacity and skills in this area.
- The items noted above have been enacted in the new QMDC Bush Tender 2006, e.g. prior to commencement all documentation has been developed, assessment panel, criteria and assessment dates are established, project schedule with strict timelines, resourcing, and identification of other staff resources (GIS & administration staff), promotion period is longer and more information sessions conducted.,
- Consequences if recommendations are not progressed are that a great deal of time, effort and funds are wasted. All projects and staff should undergo a continuous improvement cycle with each project utilising the past successes as well as the challenges to better design and implement projects. Without this improvement especially in timelines and subsequent actions landholders are less likely to become involved and staff become frustrated with inefficiency.