

Appendix 3 Case Study B: A Partnership to Achieve Sustainable Landscapes in the Mackay Whitsunday Region

Introduction

This case study reports on an example of where multi-stakeholder partnerships have been successfully developed to positively influence sustainable agriculture outcomes. The case study looks at the factors contributing to the effectiveness of partnerships that connect farm profitability and environmental sustainability objectives.

In particular, the philosophy that underpins the Sustainable Landscapes Program that is featured in the case study, illustrates the depth of thinking that has gone into the Program over time and provides a good example of how programs are refined as new knowledge and understanding is acquired.

The case study is based on the Sustainable Landscapes Program of Mackay Whitsunday NRM Group (MWNRM) implemented with the cane industry in the Mackay Whitsunday region.

Context

Great Barrier Reef Water Quality Protection Plan

The health of the Great Barrier Reef (Reef) is affected by the quality of the water from waterways in the Reef's catchment area. In order to address the decline in water quality entering the Reef, the Australian and Queensland Governments worked in partnership with a wide range of industry and community groups to develop the Reef Water Quality Protection Plan (Reef Plan). The goal of the Reef Plan, which was launched in 2003, is to halt and reverse the decline in water quality entering the Reef within 10 years. In order to do this, the Reef Plan has two objectives:

- Reducing the load of pollutants from diffuse sources in the water entering the Reef.
- Rehabilitating and conserving areas of the Reef catchment that have a role in removing water borne pollutants.

Diffuse sources of pollutants are those that enter the waterways through a wide range of different sources and which cannot be directly attributed to one point of dispersal, such as a pipe or waste outlet. These pollutants are chemicals (including pesticides), excessive sediment (soil particles) and nutrients (including fertilisers) which wash into waterways and ultimately flow into the Reef lagoon.

The major water quality and aquatic ecosystem condition issues identified in the Mackay Whitsunday region (Brodie 2004) are:

- The major water chemistry issues across the catchment relate to excess nutrient, agricultural chemical contaminants and urban contaminants;
- Excessive turbidity, low levels of dissolved oxygen and cyanobacterial blooms are periodically important in some locations;

- Water chemistry is particularly influenced by flow regime;
- The major impacts of reduced stream water quality are likely to be at the end of the system rather than in the freshwater section due to the better water quality under base flow conditions;
- Riparian vegetation condition is in poor condition in many reaches; and
- The major water chemistry threat is to the natural environment as there are adequate supplies of good quality drinking water.

The Cane Industry in the Mackay Whitsunday region

Agricultural production is the most extensive land use in the region accounting for 55% of all land use. Sugarcane is the dominant crop along the coastal plain. A large portion of sugarcane crops are under supplementary irrigation.

There are approximately 1160 sugarcane producers in the Mackay Whitsunday region farming 115,000ha with an estimated farmgate value of production of \$505m.

The Sustainable Landscapes Program

The Sustainable Landscape Program targets the high priority natural resource management issues identified in the Mackay Whitsunday Regional Plan and is the primary mechanism for achieving on-ground works identified in the Regional Investment Strategy.

Sustainable Landscapes was developed by MWNRM as an incentive scheme. It provides a variety of cash, training and field extension support incentives to encourage the development of effective partnerships at all land management levels - agricultural industry, individual land managers, public land managers and business.

The Sustainable Landscape Program has one primary objective: To accelerate the adoption of the most sustainable and innovative practices by land managers throughout the Mackay Whitsunday Region.

Sustainable Cane Industry Stakeholders in the Mackay Whitsunday region

The Mackay Whitsunday region is strong agricultural region and has numerous sustainable agriculture stakeholders, each with their own purpose, for example, MWNRM, local catchment management groups, BSES Limited, Mackay Area Productivity Service, Growcom, DPI&F, Canegrowers and the land managers themselves. Therefore it is important that there is a commitment from at least some, if not all, the organisations to seek out ways to optimise the use of the available resources including people, knowledge, skills and funding.

In particular, MWNRM, BSES Ltd, DPI&F and selected producers have worked in a partnership to continually develop and refine the cane component of the Sustainable Landscapes Program with each stakeholder providing a view that is respected amongst the partnership.

MWNRM devolved funds to BSES Ltd to provide for the delivery of services of a Sugarcane Industry Sustainable Landscapes Extension Officer. The full-time position was funded

through the Reef Link project and was set up to provide a direct link between cane growers and the Sustainable Landscapes Program. The local BSES Limited office in Mackay is respected by cane growers in the region and so for MWNRM it was an easy decision to make - why not capitalize on the credibility of BSES and support a position within BSES, rather than creating a position within MWNRM which would then need to establish a relationship with growers. The approach adopted by MWNRM reflected the organisation's maturity and commitment to tailoring solutions to fit the purpose.

Funding

To support delivery of the Mackay Whitsunday Natural Resource Management Plan 2005, MWNRM received funding from NHT2 through their Regional Investment Strategy. To supplement the NHT2 funding, the MWNRM Group actively seeks funding from a range of other sources including: National Landcare Program (NLP), National Water Initiative, Envirofund and Reef Partnership. MWNRM, like many regional NRM bodies, constructs its programs to address sustainable agriculture from a variety of funds which makes it impossible to directly attribute sustainable agricultural outcomes to any one funding source.

In fact the ability of regional NRM groups to attract and integrate multiple sources of funds is considered to be one of their strengths. Nevertheless, the NHT2 funds are considered to have been instrumental in many cases of providing the basis for MWNRM to attract additional and complementary funds from other sources.

The extension component of the program has been delivered via the NHT2-funded strategic reserve project Reef Link (formerly Sustainable Coastal Agricultural Systems).

Reef Link specifically addresses the central barriers to the uptake of sustainable on farm practices. Practices that are profitable, compatible with existing practices, not too complex, easily tested by farmers and whose results can be easily observed are more likely to achieve rapid adoption. Some of the apprehension towards the uptake of new technology and initiatives is due to fear of the unknown. It has been found that farmers' participation in learning and training activities is positively correlated with changing agricultural practices that improve, or are expected to improve, long term profitability and viability.

Philosophy of the Sustainable Landscapes Program

The Sustainable Landscapes Program has evolved a long way from what was originally a conventional grants program for land managers. The collaboration between MWNRM and cane industry stakeholders identified that to achieve genuine practice change, the program needed to be of interest (i.e. provide benefit) to cane growers and needed to build commitment to long-term change.

MWNRM and cane industry stakeholders believed that a program that increased productivity and profitability would both interest cane growers and encourage long-term change to management practices.

The challenge was to define cane management practices that would lift production and profit and at the same time reduce pollutants entering waterways. To define cane management practices, a set of four levels of cane management were described that resulted in different levels of public benefit. These have been developed for:

- Nutrient management
- Herbicide management
- Soil management

The management practices that receive the highest level of incentive support have been chosen carefully on the basis that:

- there was evidence that growers would benefit from the practice e.g. reduced input costs, increased production, reduced management time or labour, etc., and
- the practices will effect major, measurable and lasting change both within the paddock and downstream ecosystems.

The management practices chosen to receive incentive support have credibility with industry, because they align with the industry's 'vision' for the future way of operating.

The philosophy underpinning the program is that incentives enable producers to deal more readily with the financial risk associated with changing practices. By helping manage or offset the costs and risk, the incentives are supporting producers to operate at higher levels of stewardship which in turn provide public benefits in the form of water quality, biodiversity and soil health outcomes. Incentives are not seen as a tool to enable producers to meet their basic 'duty of care'.

Another important but probably less well appreciated element of this program is the recognition that supporting producers to shift to higher levels of stewardship helps those producers to innovate and lead change in the region's agricultural industries. By supporting the adoption of these innovative management practices, the Sustainable Landscapes Program is helping the cane industry to establish these management practices as contemporary standard practices.

The Sustainable Landscapes Program

The Sustainable Landscape Program has one primary objective: To accelerate the adoption of the most sustainable and innovative practices by land managers throughout the Mackay Whitsunday Region.

MWNRM and Canegrowers Mackay Ltd. have joined in partnership to assist the region's cane farmers operate using industry's best-management practices. The Sustainable Landscapes incentives scheme promotes a suite of practices to growers which have been developed together with the Queensland Cane Industry.

The Sustainable Landscapes Program offers incentives to land managers to implement sustainable practices in both agricultural production and natural environment systems (cane, grazing, native vegetation, and stormwater). The Sustainable Landscapes Program aims to effect major, measurable and lasting change both within the paddock and downstream ecosystems.

The Sustainable Landscape Program attempts to accelerate the practical implementation of the most sustainable land management practices by land managers at a paddock, farm, catchment and landscape scale. It provides the strategic link between research into the most

sustainable practices and the practical application within productive agricultural enterprises. In doing this the current skills and knowledge of land managers is utilised along with the research and extension staff at DPI&F, MWNRM and the industry stakeholders.

The Sustainable Landscapes Program is monitored and evaluated to test the effect of the program on the underlying resource condition (soil, water, vegetation) as well as the effectiveness in encouraging adoption of the most sustainable practices by individual land managers.

The Sustainable Landscape Program targets the high priority natural resource management issues identified in the Mackay Whitsunday Regional Plan and is the primary mechanism for achieving on-ground works identified in the Regional Investment Strategy.

Prioritising Projects

MWNRM has developed its own process for prioritising projects and determining their eligibility for incentives. Using a locally developed database and process of site inspections and questionnaires, the program is capable of prioritising works proposed by land managers in ameliorating and mitigating impacts on natural resources. The database incorporates simple sediment and nutrient transport models and can automatically generate funding agreements to be sent to land managers.

The effectiveness scores generated by the database are compared to total project cost and an offer is automatically made to land managers to fund priority projects up to a percentage of the total project cost. Using this approach the program is capable of quickly assessing proposals and delivering incentives for changing farm management to best practice.

This system is considered to be working well and this is in no small part due to the huge amount of work done to establish objective measures that are transparent and agreed to by industry and NRM stakeholders.

Projects are categorised in to one of four priority groups. For some activities, the priority group determines the incentive offered (% of total cost).

Priority Group	Score	Incentive Offered (% of total cost)
Low	5 or 4	20%
Medium	3	30%
High	2	40%
Very High	1 or 0	40%

A summary of the steps involved in the process is shown in the following box.

Summary of Process

The Sustainable Landscape Program uses the following process to deliver incentives to Land Managers:

- ICM Coordinators distribute and promote the Expression of Interest to all Land Managers.
- Land Manager sends expression of interest to ICM Coordinator. (give the contact details)
- ICM Coordinator calls the Land Manager and conducts the Expression of Interest Questionnaire (this gives us the primary landuse)
- ICM Coordinator enters details into database and sends a copy to Key Contact Officer:
 - Native Vegetation Land Manager goes to ICM Project Officer
 - Cane Land Manager goes to BSES Officer
 - Grazing Land Manager goes to DPI Grazing Officer
 - Fishway Land Manager goes to DPI Fisheries Officer
- Key Contact Officer calls the Land Manager and organise a site assessment
- Key Contact Officer and Land Manager conduct site assessment which explains the SLP process and conditions to the land managers and define:
 - Activities that make up each project
 - Scale of each activity
 - Site characteristics that informs the priority process for each activity
- For stormwater and watering points activities, the key contact officer sends an information request to the Land Manager.
- The Land Manager completes the information request which includes structure characteristics, design diagram and itemised costs and percent of total cost required to build the structure.
- Key Contact Officer sends results of site assessment and information request to ICM Coordinator and enters details into the database and prepares reports on priority values of project in the catchments.
- ICM Coordinator facilitates Local (ICM groups) and Regional Assessment panels (MWNRM group)
 - Confirm accuracy and priority of each project
 - Approve projects
 - Total Incentive offered to each project
 - Allocate funds to approved projects
- MWNRM group produces draft Funding Agreement and sends to the Land Managers
- Land Manager signs and sends final Funding Agreement back to MWNRM group for final signature. One copy of the funding agreement is filed and one copy sent to the Land Managers.
- Land Manager manages the implementation of their Funding Agreement
 - Attends SLP Training and develop a schedule of operations for each activity
 - Develop Land Management Plan that underpins the long-term management plan of their natural resources
 - Complete Milestones Reports for each activity and send to MWNRM group.
- MWNRM group audits the Milestone Reports received from Land Managers and authorises payment of instalments to Land Managers and enters details into the database.
- ICM coordinator contacts Land Managers to conduct random site audit to confirm the accuracy of 2 to

Sustainable Agriculture Outcomes

The Sustainable Landscapes Program is delivering a variety of important and related outcomes for sustainable agriculture:

- A partnership between industry, government and MWNRM that collectively works towards a shared goal for a sustainable cane industry and healthy waterways and Reef;
- A partnership that is building capacity of stakeholders involved in the sustainability of the cane industry in the region
- The development of cane management practices that are profitable and environmentally sustainable;
- The adoption of recommended cane management practices by land managers;
- A major role in supporting leading cane growers in their quest to improve the sustainability of cane growing, which expands the pool of industry champions.
- A program that provides certainty, and hence confidence to investors, that the incentives are used in accordance with the guidelines.

Whilst it is still relatively early days for the program, it is anticipated that when there is sufficient on-ground change, it will be possible to more readily demonstrate the program's worth, both visually and through resource condition aspects such as water quality or biodiversity or land management practice monitoring.

In an assessment of incentive schemes for agricultural industries in Queensland, Dawson (2007)⁷ reported that since June 2005, the program has provided incentives to 266 land managers in the region via five rounds of funding worth \$1.5 million in funding agreements. This funding has been applied to over 600 individual projects, indicating that some land managers have been recipients of the program more than once. A challenge for programs like this is to reach a wider audience of land managers, rather than continuing to work with the same group.

The report noted that the strengths of the Sustainable Landscapes program are:

- consistent process that can be applied in different areas,
- capacity to measure progress and outcomes,
- sound engagement processes,
- follow up of action plans for continual improvement, and
- on-farm innovation through research and knowledge exchange is incorporated

A weakness of the program was identified as being that the program relies largely on industry program staffing which therefore needs to be built into the cost of the program.

As a result of obtaining NHT2 funding for the project, additional project and activity funding and in-kind support has been leveraged⁸ (refer following table).

⁷ Dawson, D, 2007, Assessment of the suitability of incentives schemes for industry programs, Queensland Farmers' Federation Publication, Brisbane, Queensland.

⁸ Trendall, P. Yearly Report, Sustainable Coastal Agricultural Systems

Who	Contribution to the Sustainable Landscapes Program from Stakeholders
Mackay Whitsunday Natural Resource Management Group	<p>Development and administration of SLP project</p> <ul style="list-style-type: none"> ▪ Database ▪ Funding agreements ▪ Facilities <p>SLP activity funding from NHT2 and NLP = \$1,517,762</p> <p>Funding has been provided to the three catchment groups to have a SLP project officer on for 2 days/week</p>
Regional Catchment groups – Whitsunday, Pioneer, Sarina	<p>SLP project officers managed by catchment groups</p> <p>Promotion of SLP throughout the respective catchments</p>
SLP Land Managers	<p>The maximum amount of funding received by land managers involved was 40%. For \$1.5 million in funding to land managers, there would be have been a minimum of \$2.25 million of in-kind support from the land managers to implement their activities.</p>
BSES Limited	<p>In-kind support included:</p> <ul style="list-style-type: none"> ▪ BSES extension staff promoting the project to growers ▪ Use of BSES facilities for training days ▪ Information handouts for growers, newsletters and field day site
Mackay Area Productivity Service	<p>In-kind support from extension staff promoting the project to growers</p>
DPI&F Futurecane	<p>In-kind support included:</p> <ul style="list-style-type: none"> ▪ staff promoting the project to growers ▪ Information handouts for growers
CANEGROWERS	<p>In-kind support from communication staff promoting the project</p>

Future Challenges for MWNRM and the Sustainable Landscapes Program

Staff involved in the program are conscious of the need to:

- maintain and improve the program's accountability for its investment,
- strengthen links with R&D organisations to validate recommended practices, e.g. controlled traffic, fertiliser placement and chemical application practices, and
- retain a continuous improvement approach to defining recommended BMPs in the understanding that it is an on-going challenge.

MWNRM modelling will provide an indication of the scale of BMP adoption required to achieve water quality targets, e.g. estimating what the water quality impacts will be for differing levels of BMP adoption (50% or 100% adoption).

This can then be used to determine the cost involved to support the level of change required and the likelihood of achieving targets given current approaches and funding and the need for alternative approaches. With this information, MWNRM will be well placed to prepare a return on investment analysis for investors. It is expected that the modelling will be better informed by the Water Quality Improvement Plan and will improve targeting of the program to priority catchments.

Some future specific opportunities for the program have been identified by program staff which illustrate their commitment to working in partnership:

- O'Connell Catchment – a focus on innovation in cane industry practices within a largely irrigation dependent component of the industry with a partnership with both Canegrowers and Proserpine Mill;
- Bakers Creek Catchment - a focus on innovation in cane industry practices in partnership with Canegrowers and Mackay Sugar, water reuse with Mackay Water, urban inputs recognising Walkerton's growth with Mackay City Council, industry practice [abattoirs] and Pioneer Water, which are already a partner on water quality monitoring.
- Sarina Shire Coastal Landscapes – building on the Shire Coastal Plan, the strong Council and community interest and hopefully attracting funding from Government agencies