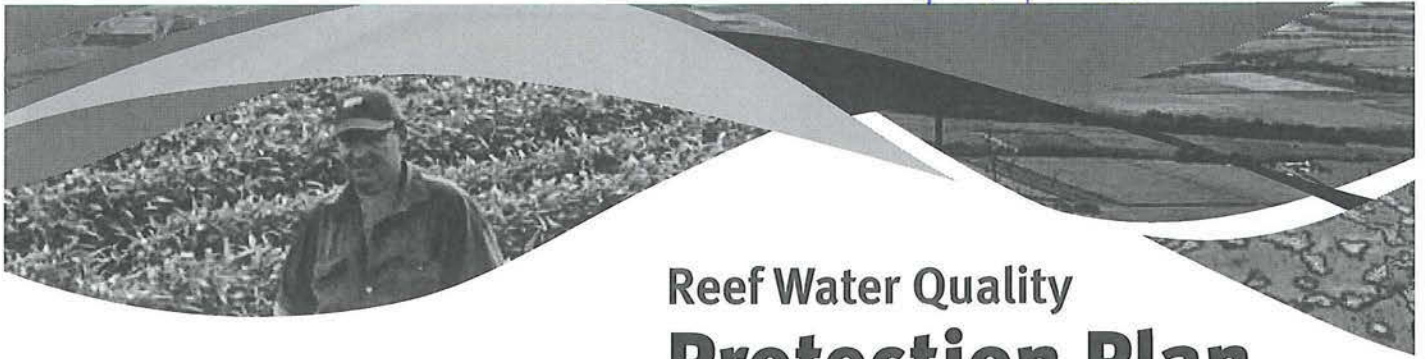


*Tabled at EIC estimates
hearing 16/10/12 [signature]*



Reef Water Quality **Protection Plan**

Investment Strategy

2009–2013



Australian Government



Queensland
Government



Executive summary	3
Introduction	3
Scope	3
Achieving Reef Plan targets	4
Governments' commitment to Reef Plan	4
Description of the various investment streams	5
Desired outcomes from investment	8
Prioritising investment	8

© The State of Queensland (Department of the Premier and Cabinet) 2010. Published by the Reef Water Quality Protection Plan Secretariat, September 2010, 100 George Street, Brisbane Qld 4000.

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, made available online or electronically but only if it is recognised as the owner of the copyright and this material remains unaltered. Copyright enquiries about this publication should be directed to the Department of the Premier and Cabinet, by email to copyright@premiers.qld.gov.au or in writing to PO Box 15185, City East Qld 4002.

Copies of this publication can be obtained by contacting (07) 3225 8050 or at www.reefplan.qld.gov.au.



Executive summary

The Reef Water Quality Protection Plan (Reef Plan) was updated in 2009 to ensure renewed efforts to halt and reverse the decline in the quality of water entering the reef. To help achieve this, the Queensland and Australian Governments have both committed to making significant investment in reef related initiatives that will help achieve Reef Plan goals and objectives. In 2009, Premier Anna Bligh committed to spending at least \$125 million over five years on Reef Plan activities, as well as an additional \$50 million to implement new regulations aimed at improving land practices. In addition, the Australian Government has committed \$200 million over five years to the Caring for our Country Reef Rescue program which provides water quality grants for farmers to implement improved practices, as well as funds for monitoring and research into reef water quality. Both governments also have ongoing commitments in terms of monitoring, management of the Great Barrier Reef and freshwater and reef related research.

This Investment Strategy broadly describes the Queensland and Australian Governments' investment in activities that contribute to Reef Plan, the outcomes expected from this investment, and how it is prioritised.

It is also hoped that this strategy may provide guidance to private investors with a desire to invest in reef related activities (e.g. non-profit organisations). Reef Plan 2009–2010 provides the appropriate framework to harness and target this broader investment from stakeholders and individuals in this respect.

Introduction

Reef Plan was launched in 2003 as a 10-year joint Australian and Queensland Government commitment to halting and reversing the decline in water quality entering the Great Barrier Reef lagoon.

In 2009, Reef Plan was updated to re-focus actions on improving water quality. The updated Reef Plan is more strategic and outcomes focused, with improved accountability for actions and better monitoring to measure success.

Reef Plan 2009–2013 builds on the 2003 plan by targeting priority outcomes, integrating industry and community initiatives and incorporating new policy and regulatory frameworks. It includes clear and measurable targets to ensure that reef water quality is improved and that the reef has the resilience to cope with the stresses of a changing climate.

A key action of Reef Plan is to prepare an investment strategy to:

- outline the various investments being made to deliver on Reef Plan
- identify how these investments contribute to Reef Plan outcomes
- describe how the various investments are prioritised.

Scope

This strategy provides details on the level of investment committed to Reef Plan activities and how this investment contributes to Reef Plan goals and objectives, including incentive programs such as Reef Rescue (part of the Australian Government's Caring for our Country program), research, extension, education, monitoring, regulations and enforcement. This strategy is a living document which is intended over time to also consider other non-government investment streams.

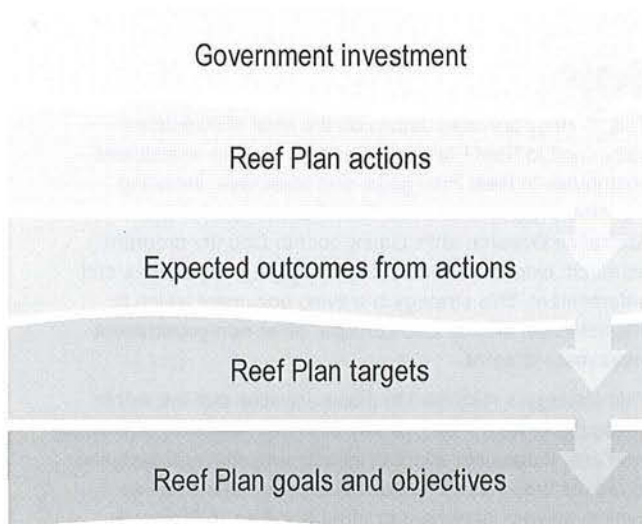
This strategy is restricted to those activities that are within the scope of Reef Plan, namely activities related to broadscale land use. It does not address investments that are designed to reduce urban runoff or point source pollution such as mining, sewage treatment or other activities. Additionally, it does not include the day-to-day management of the Great Barrier Reef which is the responsibility primarily of the Great Barrier Reef Marine Park Authority and the Queensland Government Department of Environment and Resource Management.

This strategy does not attempt to detail expenditure on every individual program that contributes to Reef Plan, rather, a general overview of major investments across program areas is provided. Figures are indicative annual investments for 2009–2013, based primarily on actual investments in 2009–2010.



Achieving Reef Plan targets

The Reef Plan is driven through investment. Both the Australian and Queensland Governments invest in actions that directly contribute to achieving Reef Plan's targets, goals and objectives.



There is no single action that will achieve the targets alone. Rather, they will be achieved through the coordinated delivery of a suite of actions, including those related to incentives, regulations, research and education.

Industry and private organisations are strongly encouraged to support the achievement of these goals and objectives through their own investments. By ensuring that all investments are complementary, we can maximise the chances of achieving those goals and objectives.

Governments' commitment to Reef Plan

Both the Queensland and Australian Governments have committed significant funding and resources to initiatives which contribute to improved reef water quality through Reef Plan. The Queensland Government has committed \$175 million over five years which includes a \$50 million package to support the new Reef Protection Package legislation. In addition, the Australian Government has committed \$200 million over five years to support the Caring for our Country – Reef Rescue initiative.

For the purposes of this strategy, five broad investment streams have been identified:

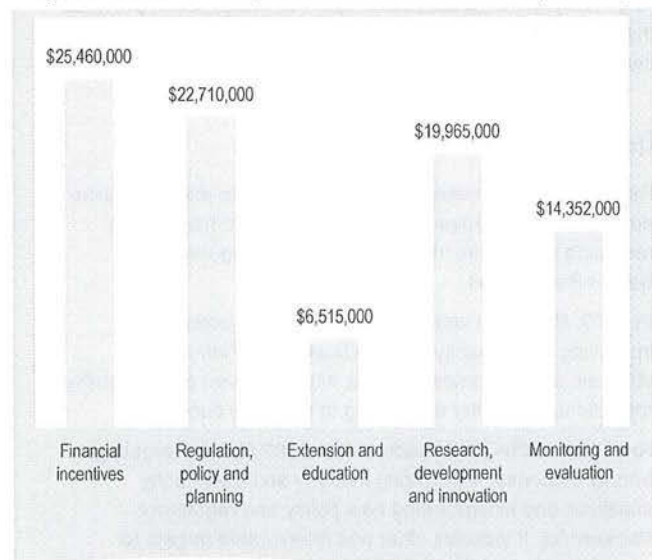
1. financial incentives
2. regulation, policy and planning
3. extension and education
4. research, development and innovation
5. monitoring and evaluation.

These programs fit within the three Reef Plan priority work areas:

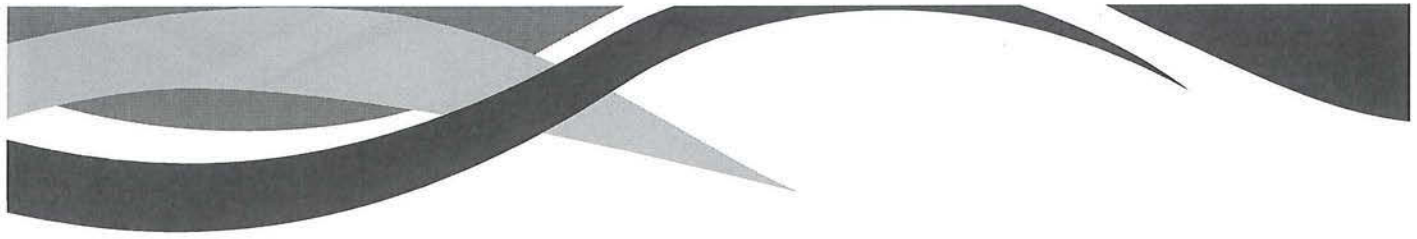
1. focusing the activity – resources are focused at the most critical areas using the most cost-effective measures.
2. responding to the challenge – landholders adopt land management practices that maximise reef water quality improvements.
3. measuring success – to gauge the efficiency and effectiveness of Reef Plan in achieving its goals and objectives through monitoring and evaluation.

Figure 1 provides a summary of government investment across these five streams. A detailed breakdown is provided in the following sections.

Figure 1 – Indicative annual government investment for Reef Plan (2009–2013)



Note that Reef Rescue funding for extension has been taken out of incentives and included in extension and education. Also note that industry investment of \$2 million is not included in extension.



Description of the various investment streams

1. Financial incentives

Financial incentives are provided through a number of programs, most notably the Australian Government's Reef Rescue program, which is part of Caring for our Country. Reef Rescue is made up of five integrated components that work together:

- Water Quality Grants (\$146 million over five years)
- Reef Partnerships (\$12 million over five years)
- Land and Sea Country Indigenous Partnerships (\$10 million over five years)
- Reef Water Quality Research and Development (\$10 million over five years)
- Water Quality Monitoring and Reporting, including the publication of an annual Great Barrier Reef Water Quality Report Card (\$22 million over five years)

In 2008–09, the Reef Rescue program invested approximately \$24 million in on-ground works and capacity building activities to improve land management practices and water quality outcomes in reef catchments. In 2009–2010, an additional \$52 million was allocated under Reef Rescue for multi-year projects by regional natural resource management organisations and industry groups to support on-ground works by landholders and capacity building activities.

Queensland runs a complementary program, Q2 Coasts and Country, from which approximately \$6 million each year is allocated to reef catchments to undertake natural resource management activities that will have a benefit to catchment management more broadly and which will have flow on benefits for the reef. This includes \$1 million for delivery and coordination through regional bodies and \$1 million for catchment monitoring and modelling. These figures are included in the monitoring and evaluation investment stream rather than the incentives stream.

Both programs support natural resource management activities in reef catchments by providing base level funding for regional natural resource management organisations which may be used for activities such as extension and education. Natural resource management projects that have flow-on benefits for the reef may also receive funding through the competitive investment component of the broader Caring for our Country program.

2. Regulation, policy and planning

The Queensland Government has made a significant investment in developing and implementing regulations, policies and plans that protect environmental assets (e.g. wild rivers, tree clearing regulations) and promote improvements in management practice (e.g. the Delbessie Agreement and new Reef Protection Package).

The annual Queensland Government investment in regulations, policy and planning exceeds \$22 million a year and includes:

- \$10 million a year to implement new regulations to reduce agricultural runoff (Reef Protection Package)
- \$2.4 million a year to undertake activities under the Vegetation Management Act
- \$1 million a year to implement State Land Management (including the Delbessie Agreement)
- \$3.5 million a year to undertake water resource planning and land and water management plans.
- \$1 million a year for the Wetlands Program
- \$610,000 a year for Water Quality Improvement Plans
- \$600,000 a year for Nature Assist and Nature Refuge conservation agreements
- \$790,000 for catchment and regional planning
- \$810,000 for Coastal Management Policy
- \$2 million a year for coordination and support for Reef Plan, NRM programs and Water Quality policy in reef catchments

3. Extension and education

Government and industry currently invest in excess of \$8 million a year in extension and education services. The Department of Employment, Economic Development and Innovation is the lead government agency providing these services to landholders. Extension services are also provided by industry, regional natural resource management groups and commercial agronomists/consultants. Extension services are predominantly funded by the Queensland and Australian Governments through direct investment (e.g. Department of Employment, Economic Development and Innovation officers) or funding through programs such as Reef Rescue and Q2 Coasts and Country. Extension services are also funded through industry contributions or levies. For example, a proportion of BSES Limited funding comes from voluntary service fee agreements, and this funding is used to support industry through extension and research trials.



Table 1: Breakdown of investment in extension and education

Action	Queensland Government	Australian Government ¹	Industry levy	Total
ReefNet – Coordination of service delivery (reef wide)	\$630,000			\$630,000
Sustainable agricultural advisers (economics, Department of Employment, Economic Development and Innovation)	\$220,000	\$120,000		\$340,000
Best practice coaches (grazing, Department of Employment, Economic Development and Innovation)	\$885,000	\$150,000		\$1,035,000
Best practice coaches (other, Department of Employment, Economic Development and Innovation)	\$1,050,000			\$1,050,000
Best practice coaches (other, industry and natural resource management groups)		\$2,500,000	\$2,000,000	\$4,500,000
Sustainable agriculture advisors (FarmFLOW)	\$280,000	\$60,000	\$20,000	\$360,000
Department of Employment, Economic Development and Innovation technical extension specialists (train the trainer)	\$60,000	\$160,000		\$220,000
Pilot program	\$400,000			\$400,000
Total	\$3,525,000	\$2,990,000	\$2,020,000	\$8,535,000

1. This is funded primarily through Reef Rescue, the overall investment for which has been described in section one – incentives.

Extension services occur across a number of programs. The 2009–2010 level funding for each program is outlined in Table 1.

Some of these programs deliver extension and education for a range of initiatives, not just for reef water quality. However, the programs outlined in Table 1 all have at least some component that promotes improved land management practices to on-ground producers and are expected to contribute to Reef Plan goals and objectives.

It should be noted that these are 2009–2010 levels of funding, but that the Reef Plan Extension and Education Strategy may result in changes to these programs and realignment of funding to achieve the objectives of the strategy. For example, \$400,000 has been aligned per year over two years to undertake a pilot program to implement recommendations from the strategy in selected areas. This will also be supported through funding from the Reef Protection Package.

It should also be noted that the Australian Government investment is primarily delivered through Reef Rescue funding, which provides base funding for natural resource management groups which undertake a number of extension

and education activities. Reef Rescue funding has previously been described in section one and should not be counted again in terms of total funding of Reef Plan activities. However, the breakdown of funds allocated to extension is still provided for information.

4. Research, development and innovation

The Australian Government invests significantly in research, development and innovation through providers such as CSIRO, Australian Institute of Marine Science and the National Environmental Research Program. The Australian Government's investment includes:

- up to \$9 million for reef water quality research through the Caring for our Country Reef Rescue initiative (from 2010–11 to 2012–13)
- up to \$7 million each year for the Great Barrier Reef and Torres Strait hub of the new National Environmental Research Program (NERP), which replaces the Marine and Tropical Sciences Research Facility (MTSRF) from 2010–11

- \$5 million a year for Australian Institute of Marine Science for science underpinning coastal water quality assessments and process models
- \$1 million for the Integrated Marine Observing System on coastal observations to support the development of a Great Barrier Reef receiving water model (through CSIRO and the Australian Institute of Marine Science)
- \$3.465 million for CSIRO research under the Water for Healthy Country flagship in the healthy water ecosystem theme and \$0.55 million Wealth from Oceans flagship for CO2 measuring and modelling.

5. Monitoring and evaluation

One of the key actions in Reef Plan 2009–2013 is to develop and implement a Paddock to Reef Integrated Monitoring and Modelling Program. The Australian and Queensland Governments jointly fund over \$9 million a year to implement the program, which is a collaborative effort between governments, key industry partners, research organisations, regional natural resource management bodies and individuals. An additional \$4.6 million is spent on other supporting programs.

The integrated program draws significantly on existing resources, particularly from within the Department of Environment and Resource Management. The investment over four years identified for the key components of the program are outlined in Table 2.

There are also a range of other supporting programs that contribute to Reef Plan activities more broadly, and they are also outlined in Table 2.

Table 2: Breakdown of investment in monitoring and evaluation

	Queensland Government investment per year	Australian Government investment per year	Total per year
Paddock to reef integrated monitoring and modelling program			
Management practice adoption	\$90,000	\$500,000	\$590,000
Paddock scale monitoring and modelling	\$575,000	\$1,800,000	\$2,375,000
Landscape monitoring and mapping	\$348,388		\$348,388
Catchment loads, monitoring and modelling	\$2,468,000		\$2,468,000
Marine monitoring and modelling	\$40,000	\$2,450,000	\$2,490,000
Delivery and coordination	\$1,339,000	\$75,000	\$1,414,000
Subtotal	\$4,860,388	\$4,825,000	\$9,685,388
Other supporting programs			
Wetlands mapping	\$160,000		\$160,000
QSCAPE program (Landscape monitoring and modelling)	\$535,904		\$535,904
Ambient monitoring programs (Surface Water Ambient Network, Ground Water Ambient Network) in reef catchments	\$3,078,000		\$3,078,000
Purchase of high resolution satellite imagery for reef catchments	\$312,501		\$312,501
Department of Environment and Resource Management Spatial and Scientific Information Management for Reef (SSIMR) project	\$580,150		\$580,150
Subtotal	\$4,666,555		\$4,666,555
Total	\$9,526,943	\$4,825,000	\$14,351,943

Desired outcomes from investment

Investment in each of the programs outlined in this strategy will contribute to meeting desired outcomes and ultimately Reef Plan goals and targets. A schematic of the desired outcomes from the various investment streams is provided in Figure 2.

These desired outcomes provide an indication of how actions are likely to contribute to the goals and targets. For example, the desired outcome from incentives is an increased adoption of improved management practices, which will in turn help improve water quality, thereby contributing to the target to reduce nutrient runoff by 50 per cent by 2013.

Some of the desired outcomes may not result directly in water quality improvement, but will improve our knowledge of the problem and encourage an adaptive approach to management, allowing for better targeting of investment over time.

There is also some overlap in the desired outcomes across the different programs. For example, while the outcomes of regulations will be to predominantly phase out unacceptable

practices, they will also help drive uptake of improved practices through actions such as the Delbessie Agreement and the development of Environmental Risk Management Plans. In this regard, there is likely to be some overlap between regulation, incentives and extension, all of which are expected to result in improvements in practice which will lead to improvements in water quality.

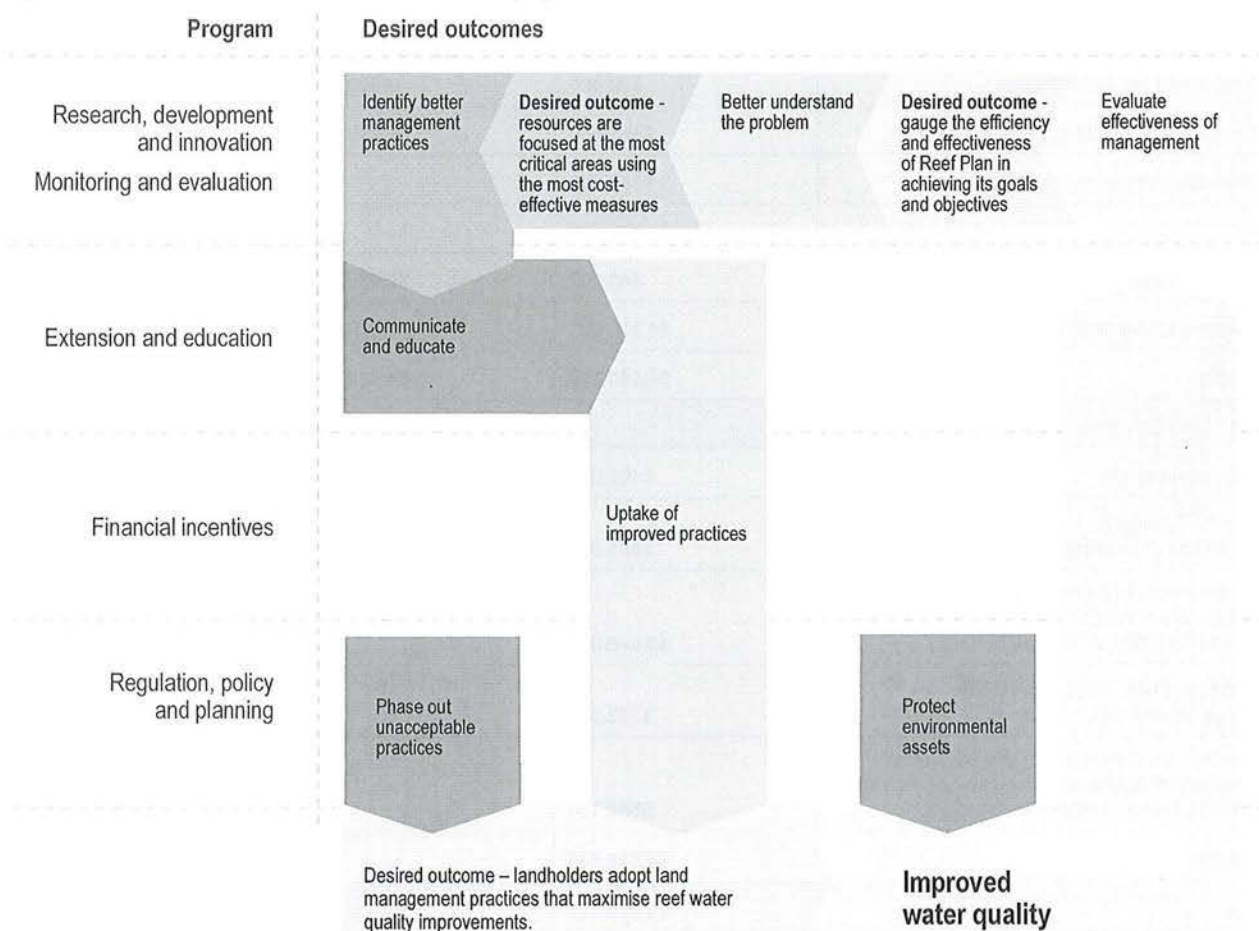
Prioritising investment


Within each of the programs, there are various prioritisation processes that are used to determine how investments are allocated.

1. Incentive programs

A multi-criteria analysis (MCA) decision model has been designed by CSIRO and is used as part of the Reef Rescue regional allocation process to guide investment decisions. The multi-criteria analysis model is a decision making support

Figure 2: Schematic of desired outcomes from various Reef Plan programs





framework widely applied under Australian natural resource management programs. This economic model emphasises the need for Reef Rescue expenditure to be carefully targeted to achieve improvements to water quality. It is used to rank or score decision options in light of multiple objectives, which can be weighted according to their relative importance. The Reef Rescue multi-criteria analysis model takes into account criteria such as:

- asset value: commercial fishing, species richness, ecological significance, recreation, tourism
- threats: sediment, nutrient, herbicide/pesticide pollution
- solvability: the availability and feasibility of farm management practices that will reduce pollution.

A similar process was also used for Queensland's complementary program Q2 Coasts and Country. The process involved the identification of priorities against six key investment areas and existing government natural resource management policy drivers.

2. Regulation, policy and planning

As part of the Queensland Government's development of new regulations to reduce runoff from broadscale agriculture, a two-stage risk assessment was undertaken through the Australian Centre for Tropical Freshwater Research. This risk assessment helped identify those catchments and industries that posed the highest risk in terms of water quality. As a result, regulations have been targeted at these areas in order to gain the greatest water quality benefit. Copies of the assessments can be found under information on the Great Barrier Reef at www.reefwise farming.qld.gov.au

3. Extension and education

An Extension and Education Strategy has been developed as an action under Reef Plan 2009–2013 and identifies the priorities for extension and education that are required to help meet Reef Plan's goals and objectives. Its focus is on better coordinating and integrating the delivery of extension and education services. It also provides a renewed focus on achieving adoption of best management practices by identifying those practices that aim to improve both the profitability and sustainability of agricultural enterprises and the health of our waterways and the reef. A copy of the strategy can be found at www.reefplan.qld.gov.au

4. Research, development and innovation

A Research, Development and Innovation Strategy has been developed as an action under Reef Plan 2009–2013 and promotes a more coordinated approach to reef water

quality research and guides research investment until 2013. The strategy outlines the process, criteria and consultation arrangements for identifying knowledge gaps and research priorities. The strategy identifies five broad research themes that are categorised on the basis of "solving the problem" and "understanding the problem". To maximise positive outcomes for reef water quality, the strategy proposes that the balance of future research and development investment should be weighted towards solving the problem. As part of the strategy, research priorities are articulated in an annual research, development and innovation plan, prepared in consultation with end users and other stakeholders. A copy of the Research, Development and Innovation Strategy and the 2010–2011 Research, Development and Innovation Plan can be found at www.reefplan.qld.gov.au

A Research and Development Plan has also been prepared for Reef Rescue and can be found under business plan priorities for coastal and reef areas at www.nrm.gov.au. It specifically identifies the priorities for Reef Rescue investment, with a focus on management effectiveness and socio-economic analysis. The Reef Rescue research and development plan also highlights the need for research to be integrated across programs to ensure synergies wherever possible.

5. Monitoring and evaluation

A Monitoring and Evaluation Strategy has been developed as an action under Reef Plan 2009–2013 and is designed to coordinate and integrate the range of monitoring and evaluation activities undertaken and ensure that the governments can measure and report on progress toward Reef Plan's goals and objectives. The Monitoring and Evaluation Strategy is available at www.reefplan.qld.gov.au

As part of the strategy, a Paddock to Reef Integrated Monitoring, Modelling and Reporting Program has been designed and implemented. This program was designed in consultation with 100 scientific and technical personnel from 18 organisations and was based on prioritisation of key catchments and industries. A copy of the Paddock to Reef design is available at www.reefplan.qld.gov.au

In addition to the strategy, the Queensland Government has also used a two-stage risk assessment prepared by the Australian Centre for Tropical Freshwater Research to guide monitoring. The reports can be found at www.reefwise farming.qld.gov.au