

Reef Alliance: Growing a Great Barrier Reef Project (GGBR)

FINAL REPORT

Queensland Farmers' Federation
February 2020



REEF ALLIANCE
Growing a Great Barrier Reef



ACKNOWLEDGEMENTS

The GGBR project was funded by the Australian Government as part of the \$140 million investment program for Reef Trust Three¹ which was described as being directed towards *the long term protection and conservation of the Great Barrier Reef World Heritage Area* – with funds being invested in a range of programs that *address the highest priority threats to the Reef*. Commonwealth departmental staff have provided support and assistance to enable the project objectives to be achieved.

GGBR marks a unique collaboration between a range of industry and Natural Resource Management (NRM) organisations and it has been the willingness of partners to work together that has made the project a success.

February 2020

¹ Reef Trust Phase Three Investment – Applicant’s Guidelines 2015-16

SUMMARY

Purpose

This is the final report for the Reef Trust Three funded “Reef Alliance: Growing a Great Barrier Reef project (GGBR)” which commenced in May 2016 and was completed in December 2019. The project was funded by the Australian Government.

Reef Alliance and Growing the Great Barrier Reef

Twelve of the 15 Reef Alliance partners chose to work together to submit one collaborative bid for the Commonwealth Reef Trust III funding which had the aim of *supporting cane farmers to move beyond industry best practice, reduce erosion loss from grazing lands and maintaining water quality improvement momentum in grains, dairy and horticulture*. The application was successful and in May 2016, the Reef Alliance: Growing a Great Barrier Reef project (GGBR) commenced.

The Reef Alliance GGBR project was assessed as a significant leap forward in addressing the fragmented roll-out and coordination of projects directed at on-ground change on farms / properties.

Approach

A Management Committee of the partners was established to oversee the project.

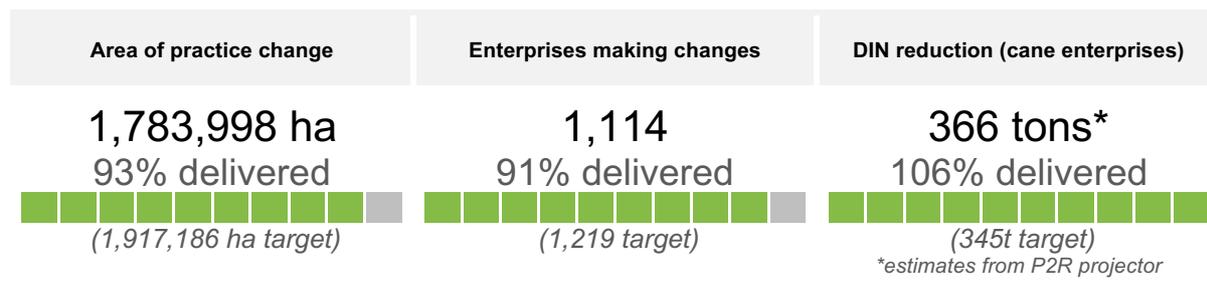
Commodity working groups were set up to provide cross-regional technical guidance into the project

The **main extension approach used in cane and grazing was one-on-one extension** assistance to develop a farm/property improvement plan (or Nutrient Management Plan or similar) and benchmark practices against the relevant P2R WQRF to identify where improvements could be made. Expertise, training and/or incentives were then used (not in all cases) to facilitate change where producers were willing and able to act on the opportunities. **Other commodities relied wholly on incentives** and linking support for practices identified against their industry environmental benchmark frameworks (e.g. Hort 360). Bananas used incentives as motivation for growers to become involved in extension and workshops that led to practice change.

A key mechanism for collaborative data capture and reporting was the development of a database for combined partner use. This was considered one of the partnership's major contributions.

Achievements in Practice Change and Calculated DIN Reduction

As of December 2019, the GGBR project had recorded management practice changes to 1,114 enterprises across almost 1.8 million hectares of land – falling just short of the overall revised targets (1,219 enterprises across 1,917,186 hectares). By industry, Grazing accounted for 90.8% of the total hectares impacted, while Cane (57.5%) and Grazing (20.4%) contributed to the majority of enterprises making changes (78.1%).



Engagement

Engagement by the GGBR project as of December 2019 included one-on-one extension with 1,588 farmers and graziers, constituting 22,412 hours of effort at an average of 14 hours per individual.

	GRAZING	CANE	GRAINS	HORTICULTURE	DAIRY
Growers engaged one-on-one	339 6,161 hours (18hr/grower avg.)	885 13,927 hours (16hr/grower avg.)	143 1,198 hours (8hr/grower avg.)	164 446 hours (3hr/grower avg.)	57 660 hours (12hr/grower avg.)
Total people engaged	367	1,034	151	166	64

Reef Champion Awards

The Reef Champion Awards was an initiative of the GGBR project with support from the Australian and Queensland governments, which recognised and celebrated the achievements and efforts of outstanding individuals and organisations who have taken action to improve the quality of water entering the Great Barrier Reef.

Innovation Projects

The project included the scope to trial and validate innovative practices which improved water quality. The general consensus was that this element of the GGBR project did not achieve as much as it could have – given the time frame and processes.

Incentives

Grants of \$11.8M were provided to facilitate targeted practice change with farmer co-contribution of \$16.7M - a ratio of 1.41 to 1.

Total incentives	Total farmer cash and in-kind contribution	Ratio of farmer cash and in-kind contribution to \$1 invested	Total projects that received incentives
\$11,890,249	\$16,721,380	1.41	736

Lessons

1. Multiple partners across regions and sectors provides efficiencies but requires a significant input of time to establish an effective and collaborative understanding of project processes.
2. The common database was a major contribution to improved efficiency in reporting and quality control.
3. It takes time and resources to establish, develop and maintain the extension capacity needed for practice change activities.
4. While extension increases the learning and skills of producers during the process, practice change is less direct and takes a longer time than incentives.
5. The competing demands on producers from a range of programs reduces their interest and availability to be involved in new programs.
6. While the project saw the value of and included support for the development of innovative technologies and extension approaches, there were significant challenges in achieving outcomes/outputs in this area.
7. Demonstrating the value of the approach and evaluating impacts was a challenge.

Where to from here

- 1. A long term perspective is necessary to meet the 2050 goals for reducing agriculture's impact on the reef and a high level of social capital and capacity needs to be developed and maintained in the reef regions to achieve the required changes.**

The Reef Alliance partners will continue to seek opportunities to build on the collaboration model which was a feature of the GGBR - although the splintering of the collaborative reef-wide model will limit cross-organisational collaboration and learning.

- 2. While there are some efficiency gains with a focus on one-on-one extension with landholders in high priority areas, there is need to complement this with an ongoing whole of region approach to extension (including group and peer to peer learning) and education.**

This is about cultural and generational change and ensuring a well-educated and informed agricultural and grazing community. *The Reef Alliance will continue to promote and support this regional-wide approach to long term change in any way that it can.* It is hoped funding agencies will continue to support this important broader need.

- 3. With the investment focus of the Great Barrier Reef Foundation (GBRF) now on hotspots and only the cane and grazing industries, there is a risk of losing the momentum and capacity gains made towards long-term practice change in other Reef catchment areas / industries.**

Balancing this approach with more holistic programs will ensure the ongoing legacy from the significant investments made in the GGBR's project model.

ACRONYMS

Acronym	Description
ABGC	Australian Banana Growers' Council
ADOPT	Adoption and Diffusion Outcome Prediction Tool
AG	Australian Government
APEN	Australasia-Pacific Extension Network
BCC	Barron Catchment Care
BCCA	Burnett Catchment Care Association
BM	Burnett Mary
BMP	Best Management Practice
BMRG	Burnett Mary Regional Group
BPS	Burdekin Productivity Services
BSS	Bundaberg Sugar Services
CEO	Chief Executive Officer
CHRRUP	Central Highlands Regional Resources Use Planning Cooperative Limited
GWG	Grazing Working Group
CWG	Cane Working Group
DAF	Department of Agriculture and Fisheries, Queensland Government
DES	Department of Environment and Science, Queensland Government
DIN	Anthropogenic Dissolved Inorganic Nitrogen
DoEE	Department of Environment and Energy, Australian Government
DST	Decision Support Tool
FBA	Fitzroy Basin Association
GBR	Great Barrier Reef
GBRF	Great Barrier Reef Foundation
GGBR	Reef Alliance: Growing a Great Barrier Reef Project
GIS	Geographic Information System
GrWG	Grains Working Group
HCPSL	Herbert Cane Productivity Services Ltd
KEQ	Key Evaluation Question
KRA	Key Result Area
M&E	Monitoring and Evaluation
MERI	Monitoring, Evaluation, Reporting and Improvement
MERIT	Monitoring, Evaluation, Reporting and Improvement Tool
MIP	Major Integrated Project

Acronym	Description
MLA	Meat and Livestock Australia
MOU	Memorandum of Understanding
MRCCC	Mary River Catchment Coordinating Committee
NESP	National Environmental Science Program
NQDT	North Queensland Dry Tropics
NRM	Natural Resource Management
NSW	New South Wales
OGBR	Office of the Great Barrier Reef, Department of Environment and Science, Queensland Government
P2R	Paddock to Reef Integrated Monitoring, Modelling and Reporting Program
QDO	Queensland Dairyfarmers' Organisation
QFF	Queensland Farmers' Federation
QG	Queensland Government
RA	Reef Alliance
GGBR	Reef Alliance: Growing a Great Barrier Reef Project
RCS	Resource Consulting Services
RFQ	Request for Quote
RTIII	Reef Trust Phase Three Investment Programme
SCYC	South Cape York Catchments
TOR	Terms of Reference
WQ	Water Quality
WQIP	Water Quality Improvement Plan
WQRF	Water Quality Risk Framework
WTSIP	Wet Tropics Sugar Industry Partnership

CONTENTS

Acknowledgements	2
Summary	3
Acronyms	7
Contents	9
1 Introduction	10
1.1 Purpose of this Report	10
1.2 Background	10
2 Structure	16
2.1 Organisations	16
2.2 Governance and Decision-making	17
2.3 Improved Efficiencies	21
2.4 Performance	26
2.5 Approach and Impact Pathway	27
3 Achievements and Legacy	44
3.1 Impact Targets	44
3.2 Practice Change and DIN Reduction Achieved	44
3.3 Engagement	47
3.4 Incentives	49
3.5 Other Impacts	50
3.6 Legacy	52
4 Lessons	53
5 Where to from here	57
6 Appendices	60
Appendix 1: Monitoring & Evaluation Logframe	60
Appendix 2: KEQ Summary Response and Rating Table	63

1 INTRODUCTION

Reef Alliance: Growing a Great Barrier Reef Project

“Advance farmer practices beyond industry best management practice and fast track the implementation of innovative practices”

1.1 Purpose of this Report

This is the final report for the Reef Trust Three funded project “Reef Alliance: Growing a Great Barrier Reef Project (GGBR)” which commenced May 2016 and was completed December 2019. The project was funded by the Australian Government.

1.2 Background

1.2.1 Reef Trust Three

The \$140 million investment program for Reef Trust Three² was described as being directed towards *the long term protection and conservation of the Great Barrier Reef World Heritage Area – with funds being invested in a range of programs that address the highest priority threats to the Reef.* It was noted that the Reef Trust was *one of the key mechanisms assisting in the delivery of the Reef 2050 Plan, the Australian and Queensland Government’s overarching framework for protecting and managing the Great Barrier Reef from 2015 to 2050.*

It was explained that an *Independent Expert Panel chaired by the Commonwealth Chief Scientist provided advice on the implementation of the Reef 2050 Plan, Reef Water Quality Protection Plan and the Reef Trust* which endorsed the development approach for Phase Three and Four of Reef Trust investment. The primary focus of these phases was on improving water quality with themes of reducing nutrient and pesticide loss from intensive agriculture and reducing sediment loss from erosion hotspots through Phase Three investments. Reference was made to the Scientific Consensus Statement 2013 which *indicated that losses from agricultural land in the Reef catchments, including sediments, nutrients and pesticides, is having a detrimental impact on Reef water quality and the overall health and resilience of the Great Barrier Reef.* The Program was described as consisting of *a suite of integrated components that will seek to engage agricultural industries operating within the Great Barrier Reef catchments to facilitate the increased adoption of specific management practices to reduce pollutant loss.* It was noted to be delivering against its objective to:

Provide cost effective, strategic investment which goes above and beyond existing programmes to address key threats to the Great Barrier Reef and catchments for the long-term protection and conservation of the outstanding universal value of the Great Barrier Reef.

² Reef Trust Phase Three Investment – Applicant’s Guidelines 2015-16

Principles around delivery were given as:

- Additionality and complementarity
- Clear outcomes and targets
- Cost effectiveness
- Collaboration and partnerships
- Effective delivery
- Evidence based and defensible
- Strategic on-ground change

Expected outcomes of the program were described as:

- 10% reduction in the Reef-wide anthropogenic dissolved inorganic nitrogen (DIN) load.
- 5% reduction in the Reef-wide sediment load derived from grazing land.
- 10% annual average reduction in sediment and associated particulate nutrient loads from grains and broad acre cropping (excluding sugarcane) in the Fitzroy and Burdekin regions.
- Continued management practice improvement.
- Demonstration of innovative industry engagement and on-ground activities.

1.2.2 Reef Alliance Proposal

The Reef Alliance³ (initiated in 2008) was described on the QFF website as bringing together *industry and regional NRM bodies and conservation sector with a common goal of assisting to secure the future health of the GBR and supporting engaged and prosperous communities*. This was said to be achieved by improving the *condition of natural landscapes and water quality flowing off catchments including through land manager knowledge and understanding of the benefits in the adoption of best management practice and land use toward improving farm viability and sustainability*. The partnership is made up of 15 organisations with a commitment through the Memorandum of Understanding signed by all parties in March 2016.

Twelve of the 15 Reef Alliance partners chose to work together to submit one collaborative bid for the Commonwealth Reef Trust III funding which had the aim of *supporting cane farmers to move beyond industry best practice, reduce erosion loss from grazing lands and maintaining water quality improvement momentum in grains, dairy and horticulture*. The participating organisations were: AgForce; Australian Banana Growers' Council; Burnett Mary Regional Group; CANEGROWERS; Cape York NRM; Fitzroy Basin Association; Growcom; NQ Dry Tropics; NRM Regions Queensland; Queensland Dairyfarmers' Organisation; Queensland Farmers' Federation; and Terrain NRM. The scope of the project was summarised as:

This project will undertake to improve water quality across the GBR by enabling landholders to change practices in cane, grazing, dairy, horticulture, bananas, grains and cropping. Delivered, by an integrated GBR wide consortium of farmers, graziers, NRMs and industry

³ <https://www.qff.org.au/projects/Reef-alliance/>

groups, this project will establish links between Reef programs, regions and industry BMP by delivering an integrated 'whole of reef' programme of training, extension and on-ground support to agricultural land managers and the broader reef community. This holistic approach will eliminate duplication, boost sharing and provide consistent project support systems, maximising Reef water quality outcomes while ensuring profitable, productive agricultural landscapes.

The project described its outcomes in two key areas:

Model Performance

By June 30, 2019, the Reef Alliance Model is recognised as Australia's most cost-effective and strategic model for delivering large scale, integrated programs

- GGBR improves Reef-wide collaboration for more effective on-ground delivery
- GGBR delivery effectively targets investments to maximise WQ outcomes
- GGBR outcomes and impacts are nationally recognised

Key elements included to maximise efficiencies, support collaboration and achieve the outcomes were:

- Reef-wide data systems ensures consistent quality and efficient data management
- Reef-wide M&E framework ensures a Reef-wide consistent approach to measuring outcomes and impacts
- Reef Alliance governance framework ensures collaboration, learnings and Reef-wide prioritisation of investment
- Reef-wide communication and messaging of catchment and Reef-wide outcomes are increased across all media

Targets

By June 2019, 1,219 farmers and graziers covering 1,917,186 ha⁴ in 33 GBR catchments have improved farm management practices to contribute to a 4.4% (169Kt) reduction in sediment load, 6.9% (345t) reduction of dissolved inorganic nitrogen and a continued reduction in pesticide load generated from broadscale agriculture in priority Reef catchments.

- *On-going pesticide load reduction Innovative land management practices have been developed, trialled and implemented by early adopters (Innovation land management practices have been included in industry BMP programs).*
- *Innovative engagement methods have increased the reach of land manager engagement in practice change.*

Targets were proposed and accepted at the outset (marked in red in the table below) with a variation agreed to via a Deed of Variation (marked in bold) as the project progressed and it was clearer as to what was achievable given the context and the greater reliance on extension rather than incentives only.

⁴ Modified from original as per table below.

Table 1: Contracted outcomes – original (red) and modified (bold)

Cane	The project will move approximately 800 779 cane farmers and 105,000 60,000 ha to more efficient and sustainable practices.	Management Practice Change (estimated number of land managers to be engaged) <ul style="list-style-type: none"> • Burnett Mary 86 41 • Burdekin 294 313 • Wet Tropics 399 425
Grazing	The project will work with approximately 154 178 graziers across 1,396,500 1,476,500 1,588,500 ha to improve their Hectares of improved land management by region.	Management Practice Change (estimated number of land managers to be engaged) <ul style="list-style-type: none"> • Burnett Mary 18 • Burdekin 60 66 • Cape York 46 26 • Fitzroy 60 68
Dairy	The project will engage with 100 dairy farmers and improve the management practice on 60 dairy farms across 12,000 ha .	Management Practice Change (estimated number of land managers to be engaged) <ul style="list-style-type: none"> • Burnett Mary 30 • Wet Tropics 30
Grains/ Broadacre cropping	The project will work with 80 84 growers across 240,000 250,000 ha to improve their management practices from moderate to low risk sustainable practices.	Management Practice Change (estimated number of land managers to be engaged) <ul style="list-style-type: none"> • Burnett Mary 10 • Burdekin 15 • Fitzroy 45 49 • Wet Tropics 10
Horticulture	The project will work with 424 116 general horticulture and banana growers across 9,270 6,686 ha to improve their management practices from moderate to low risk sustainable practices	Management Practice Change (estimated number of land managers to be engaged) <ul style="list-style-type: none"> • Burnett Mary 30 • Burdekin 40 • Cape York 3 • Fitzroy 8 • Wet Tropics 40 35

The collaborative application was successful and in May 2016, the Reef Alliance: Growing a Great Barrier Reef project (GGBR) commenced. GGBR was described as *a balanced and integrated approach to advance farmer practices beyond industry best management practice (BMP) and fast track the implementation of innovative practices. It builds on the last eight years of collaborative partnership to implement one integrated project that encourages consistent approaches, creates efficiencies and avoids duplication.* It aligned to targets within the Reef 2050 Long-Term Sustainability Plan⁵ and the Reef 2050 Water Quality Improvement Plan⁶.

The total budget allocated to the project was \$45.6M over 3.2 years. This is broken down by purpose in Table 2 below.

⁵ <https://www.environment.gov.au/marine/gbr/long-term-sustainability-plan>

⁶ <https://www.reefplan.qld.gov.au/about/>

Table 2: Annual allocation of funds

Activity	2015/16	2016/17	2017/18	2018/19	2019/20	Total
Monitoring, Evaluation Reporting and Improvement 5%	\$274,002	\$707,838	\$707,838	\$492,843	\$100,829	\$2,283,350
Project Administrative Costs -10%	\$548,004	\$1,415,677	\$1,415,677	\$985,684	\$201,658	\$4,566,700
Project Activities	\$4,256,599	\$10,369,635	10,569,883	\$9,137,712	\$1,714,090	\$36,047,919
Innovative Management Practices and Engagement	\$43,050	\$710,900	\$710,900	\$535,150	\$0	\$2,769,024
Total	\$5,121,655	\$13,024,050	\$13,404,298	\$11,259,447	\$2,016,577	\$45,666,993

1.2.3 Unique and Complementary Contribution

The delivery of Reef Trust III through the GGBR project provided some unique as well as complementary contributions to addressing on-farm improvements in water quality management. The following table shows some of the links and contributions of related projects / programs.

Table 3: Program/project linkages with GGBR

Program or Project	Focus	Features	Linkages with GGBR
GGBR Reef Trust III	On-ground practice change (type and area) relevant to P2R frameworks across Reef regions (excl Mackay-Whitsunday) and commodities - and development of innovative practices. Mapping and reporting of changes.	Collaborative administrative approach across participating regions and industries. Focus on 1-1 extension, flexible use of incentives, some training. Use of a common collating and reporting platform.	
Reef Catchments Reef Trust III	On-ground practice change (type and area) relevant to P2R frameworks in Mackay-Whitsunday	Focus on 1-1 extension, flexible use of incentives, some training.	Member of Reef Alliance. Interaction around potential use of common platform. Joined GGBR 2 Proposal to GBR Foundation.
Reef Trust II	Directs funds to sugar cane farmers in the Burdekin and for gully erosion in the Burnett Mary, Fitzroy, Burdekin and Cape York regions.	Uses market-based reverse auctions for flexible reduction of N load from cane farmers and for gully erosion control activities using low cost techniques, such as the revegetation of gully habitat, the erection of fencing and building minor structures.	One of the GGBR partners - NQDT – is managing the cane tenders and the gully program is being delivered across NRM regions.

Program or Project	Focus	Features	Linkages with GGBR
Reef Trust IV	Focuses on 3 key water quality projects in the Wet Tropics and Burdekin.	Uses reverse auctions for nutrient reduction and trials of enhanced efficiency fertilisers on sugar cane farms; and management of stream bank and gully erosion.	Seen to build on Reef Trust II and III.
BMP programs	[SmartCane BMP; Grazing BMP; Grains BMP; Hort 360; Bananas BMP] Provision of BMP frameworks for farm/property self-assessment – with some accompanying training opportunities.	Comprehensive frameworks over whole property operation – some water quality related modules – can be related to WQRF and linked to other programs. It is not necessarily accompanied by one-one extension or incentives.	Direct link to some GGBR activities – pre-requisite for participation/incentives in some cases.
NESP Tropical Water Quality Hub	Undertakes/supports research for practical solutions to maintain and improve tropical water quality from catchment to the marine environment with a particular focus on supporting the priorities of the Reef 2050 Long Term Sustainability Plan and the Reef Trust.	Includes project topics such as reducing sediment and also social research such as encouraging landholders to participate in BMP programs. Resources and outputs relevant to on-farm practice change.	
Queensland Water Quality Taskforce	The taskforce guides investment within the Queensland Reef Water Quality Program.	The QRWQP includes the Major Integrated Projects; BMP Programs; Reef regulations; extension and education programs.	GGBR partner membership of the Taskforce Review Panel and participation in various working groups and workshops
Major Integrated Projects	Funded by the State Government to address hot-spots in cane, grazing and bananas.	Strong multi-stakeholder participation. Overlaps with priority areas for water quality improvement.	Occur in two regions and managed by GGBR partners – involving commodity groups as well.
DAF Reef Extension	Water quality focused extension support to cane farms in Reef regions.	Relatively low number of staff – focus on on-farm trials and demonstrations. Supports other initiatives.	Participation in regional coordination groups along with GGBR extension deliverers.
RP 161	This project is a State Government funded partnership involving Farmacist based in the Burdekin and focuses on working with growers individually to develop and act on farm management plans.	Based on translating the '6 easy steps' to individual farms and providing support through the change process.	Farmacist is a delivery partner for NQDT – so also delivers on GGBR engagement and has experience in one-to-one support approaches to improve water quality.
Cane Changers	A voluntary initiative of CANEGROWERS to recognise and support cane growers in their commitment to addressing water quality issues.	Based in the Wet Tropics and using activities and strategies based on behavioural science.	CANEGROWERS is also a partner in GGBR – other partners e.g. WETSIP also involved. Used as an input for guidance around the change process.

Participating Reef Alliance members joined together through an MOU because of a joint belief that improved communication and collaboration across Reef regions and commodities could result in more efficient and effective outcomes for reef water quality. The Reef Trust III funding provided a practical opportunity for this vision to be realised and also enabled industry to be more directly involved in delivery to their members.

The 2019 Evaluation (Coutts J&R) concluded that (the GGBR project) *provided a robust working framework for (the involved) members of the Reef Alliance to work under a common contract to deliver complementary Reef water quality outcomes. This did however come with accompanying concerns about loss of 'line of sight' (between individual partners and the Commonwealth Government – in both directions) and collective responsibilities for poor performances.*

The evaluation also concluded that the *Reef Alliance: Growing a Great Barrier Reef project (GGBR) could be considered a significant leap forward in addressing the fragmented roll-out and coordination of projects directed at on-ground change on farms / properties.*

2.2 Governance and Decision-making

2.2.1 Governance Arrangements

Oversight of the delivery was provided through strong governance and management arrangements with GGBR structured around a three-tier governance framework. High-level (Tier 1) governance was provided by QFF on behalf of the Reef Alliance and included:

- Regional and industry coordination;
- Core support systems in MERI, reporting, communications, quality assurance, data gathering;
- Reef-wide liaison with government, science, P2R and stakeholders; and
- Contractual and performance management.

Tier 2 governance was provided through commodity and other working groups. Their purpose was to support the effective delivery of projects on the ground, together with the transfer and promotion of best practice between extension and delivery providers.

Tier 3 governance was supported by internal governance and management arrangements within each of the delivery partners. This included policies and procedures covering WHS, HR, financial management, auditing, contract management, and community engagement.

Continuous Improvement

Continuous improvement was a cornerstone of the Reef Alliance approach. As such, this project built on previous investments through a number of enhancements, including:

- Targeted focus on priority pollutants and priority GBR basins as identified in the Reef 2050 Water Quality Improvement Plan;
- Full integration of recently developed pollutant calculators, enabling both improved targeting of investment, and near real time reporting of load reductions. This is an important advance, as validation of and confidence in these calculators have, until recently, impeded reporting against load reduction targets.

- Improvements in delivery arrangements. For instance, in the Burdekin, NQ Dry Tropics is introducing delivery arrangements that incentivise whole of farm uptake of practice change.

QFF as Single Contract Holder

The GGBR project proposal mooted the role of a central coordinating organisation: *QFF will report directly to the Australian Government and subcontract delivery at the local industry and NRM level for training and extension, incentives, innovation and partnerships. RA members will be responsible for leadership of [project] delivery, accountability and communication. There will be clear roles, responsibilities, transparent management and accountability for RA members and local delivery partners.*

The Commonwealth guidelines were that no more than 10% was to be used for administration as the emphasis was on on-ground delivery. QFF was paid 2.46% of funding partner allocations for their coordination role. They held the contract and were responsible for the project's coordination, data collation and reporting.

Management Committee

A Management Committee of the funding partners was established to oversee the project. QFF chaired the Committee which also included a combination of CEOs, senior managers and/or operational staff of the partners. It met four times per year with two of the meetings following the six-monthly reports to the Commonwealth. The Committee reviewed progress and considered results, risks and responses.

These governance arrangements allowed all partners to have a voice and effectively deal with operational issues as they emerged and negotiate changes to targets. QFF provided regular internal GGBR updates to partners to keep them informed about activities, key meetings, action dates and opportunities to participate in activities. These fortnightly updates were sent to 45 staff from the 12 GGBR partner organisations.

Commodity Working Groups

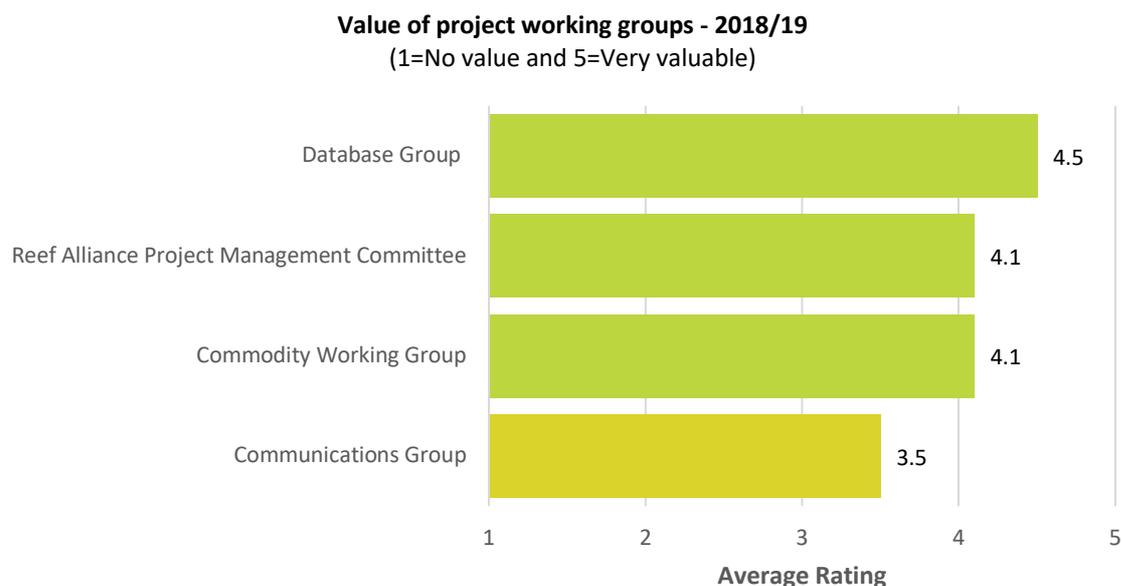
Commodity working groups were established to provide cross-regional technical guidance into the project and included senior managers and/or operational staff. These were the: Grazing Working Group (GWG); Grains/Broadacre Cropping Working Group (GrWG); and Cane Working Group (CWG). There were also dairy and horticulture meetings held for this purpose. Commodity groups met regularly (mainly in the first half of the project period) with the goal being at least once every six months. They were seen to play a role in the prioritisation framework and to provide ongoing input into the project. The leaders of the cane (Scott Crawford - NQDT and Matt Kealley - CANEGROWERS) and grazing groups (Andrew Freeman - AgForce and Elyse Riethmuller - FBA) endorsed and approved the MERIT commodity reports to the Commonwealth.

The groups also contributed to the variation of targets requested part-way into the project and to determining innovation projects. It was noted in the July-December 2018 MERIT report that *several commodity meetings were held this term addressing important adaptive management issues like responding to unexpectedly slow uptake and reallocating innovation funds.*

Partner Experience with Management and Working Groups

The 2018/19 partner survey showed a high level of satisfaction with the Management Committee and working groups within the GGBR project with ratings of 4.1/5 for the Management Committee and commodity working groups and 4.5/5 for the database working group.

Figure 2: Partner responses to management arrangements



The following table shows the changes in ratings for these groups over the life of the project by partners. Despite the variation, ratings generally reflected a high level of satisfaction with the different management and working groups.

Table 4: Average ratings on the value of project working groups (1-5 rating)

	2016/17	2017/18	2018/19	Change
Reef Alliance Project Management Committee	4.0 (n=9)	4.7 (n=10)	4.1 (n=10)	▲▼
Reef Alliance Project Operatives Group	2.8 (n=13)	N/A	N/A	
Commodity Working Group	3.3 (n=14)	4.5 (n=12)	4.1 (n=11)	▲▼
Communications Group	3.8 (n=5)	4.3 (n=6)	3.5 (n=6)	▲▼
Database Group	4.0 (n=7)	4.4 (n=8)	4.5 (n=6)	▲▲

The 2019 Evaluation (Coutts J&R) reported that *the administrative arrangements of the single contract with QFF managing the common reporting and the GGBR Management Committee overseeing the operational management with support from Commodity Working Groups, were viewed as effective. However, partners largely worked independently on their specific targets and there was missed opportunity for greater cross-regional support and learning.*

It was also noted that, *while QFF was seen as fulfilling the role of central project contact and administrator very well, the risk of managing such a large contract without accountability levers with the delivering partners was an issue and a limitation.*

Partner Experience with Decision Making

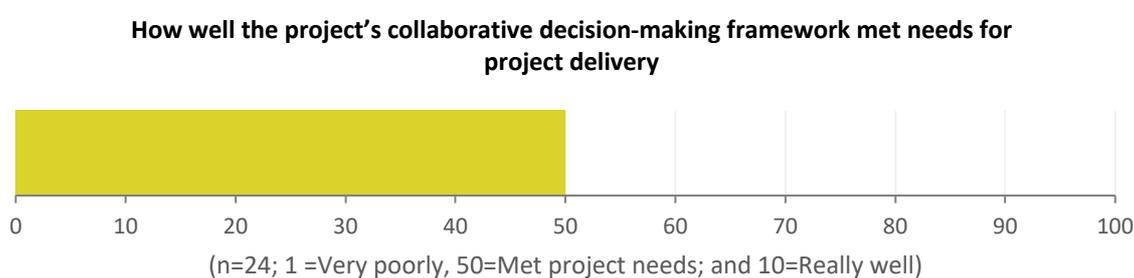


The ability to move funds and targets to another region (same commodity) provided greater flexibility in a multi-region and multi partner program. We would otherwise not been able to do that if we were delivering our own regional project and would have had to hand funds back to the AG. (Burnett Mary Regional Group 2019)



The 2018/19 partner survey showed that partners rated the effectiveness of the collaborative decision making across the full spectrum from 2 to 94/100 – with an average of 50/100 ('met project needs').

Figure 3: Partners' average response to collaborative framework



Partners were also asked to rate different aspects of the decision-making process during the project roll out (2016-2018). Average responses were all greater than 3/5 – showing general satisfaction, but also reflecting the difficulty of organisations to feel that they were fully included in the processes of such a complex arrangement.

Table 5: Average ratings to decision making statements from 2016/17 and 2017/18 surveys (1-5 rating)

	2016/17	2017/18	Change
I understand the decision-making processes for the project	3.9	3.8	▼
I believe the decision-making process is collaborative	3.5	3.7	▲
I have been provided with opportunities to participate in decision-making processes relating to the project	4.1	3.7	▼
My comments and opinions have been considered in the decision-making process	4.0	3.4	▼
I am happy with the decision-making process	3.6	3.4	▼
The decision-making process is completed in a timely manner	3.3	3.0	▼

The responses showed concerns around the time taken for decision making. The July-December 2018 MERIT reported that *partnership governance can be slow*. The comment was that while the partnership approach ensures *the buy-in from multiple partners into decisions, delivering as a partnership can also result in slow decision-making due to the need to get information, endorsement or opinions from multiple partners to progress*. It pointed out that this was *affected by partnership governance at the level of the Reef Alliance Project partnership as well as at the level of some regional delivery partnerships*. Some partners commented on the need for greater collaboration and incorporation of different ideas as well as a need for more consistent templates and reporting.

2.3 Improved Efficiencies

2.3.1 Common Database

The 2019 Evaluation (Coutts J&R) reported that all parties saw a major benefit of the GGBR project as being the common reporting platform (GGBR database) and the ability to collate data across commodities. This platform and the associated Collector for ArcGIS App (which permitted in-field capture of engagement and practice change) allowed the monitoring and reporting of targets under the contract and provided data in the required P2R format. All Commonwealth and State funded Reef projects (including GGBR) are required to report to P2R in a set format. Paddock to Reef provided the base reporting schemas (based on polygons) and GGBR contracted out assistance to merge this with the capacity for reporting on extension (based on people engaged). Details captured included extension hours spent working with individual producers to develop property management plans and prepare the pathway for practice change. This is the first time that this type of data has been collected and provides an evidence basis for future resource allocation for one-on-one extension in this context.

The database working group covered quality issues, processes, and the updates of the P2R questions. It also considered the inclusion of social indicator questions for P2R processes to improve quality, consistency and timeliness. There were some teething issues and initial complaints of double handling, complexity and time demands, however, the platform generally facilitated ease of data collation and reporting across commodities and regions. It also helped evolve the conversations needed to work towards better understanding terminologies and interpreting what constituted practice changes under the P2R guidelines.

Partner comments on the database were:



Use of Collector App for spatial mapping of practice change data by our delivery partners. RAP [GGBR] database Scripts very useful for ensuring QA of data. (NQ Dry Tropics 2019)

...the transition to a whole of GBR collector system has been an improvement for P2R and data management generally... (Terrain NRM 2019)

I think it was great that there was one person who was in charge of data management and was able to tweak the database to suit regional differences. (Terrain NRM 2019)

... We would not have had the knowledge, expertise or resources to create our own database, for example... (Australian Banana Growers' Council 2019)

Main concern was whether we would be able to develop a database that would work well enough to measure our outcomes. This is no longer a concern as the database achieves what it was meant to. (Terrain NRM 2019)

All reef catchments now capture project data of a consistent standard which streamlines data management and quality control processes. (Burnett Mary Regional Group 2018)

Reporting is more efficient with one person collating all info and data. (Terrain NRM 2018)

The reef alliance database has been a success even though it was developed on a shoestring budget. (Burnett Mary Regional Group 2018)



2.3.2 Integration

The GGBR project framework and approach impacted on the processes and capacity of partners to deliver this project as well as better equipping them to deliver on future projects. Partners were asked about how well the project was integrated in with their own systems and the extent to which it impacted on the way they delivered on other projects. All responses in the table below are greater than 3.1/5 showing a good level of integration.

Table 6: Average ratings on project integration

	2016/17	2017/18	2018/19	Change
I believe the GGBR project is well integrated with other programs my organisation delivers	3.8	3.7	n/a	▼ -
The project's systems and processes are well integrated with my organisation's systems and processes	3.5	3.7	3.7	▲ -
We do things differently now - the collaborative approach used by the Reef Alliance has improved my organisation's capacity to plan and/or deliver other WQ projects	3.4	3.1	3.5	▼▲

Once it was determined that the RA GIS database was going to be online, we made the decision to move all of our other GIS project data into ArcGIS Online. (Fitzroy Basin Association 2019)



2.3.3 Cross Organisational Learning



I have learnt many things about how to create a reef related project, effective application of M&E, ideas on extension delivery, how to partner with other organisation and use their existing processes and systems rather than duplicate, database rules. This whole project has been a positive experience in collaboration. (Australian Banana Growers' Council 2019)



Another outcome of organisations collaborating to deliver the GGBR project was the scope to learn from each other – both in a technical and process sense. Eighty-four percent of partners in the 2018/19 survey reported that had an opportunity to learn from others – growing slightly over the life of the project.

Figure 4: Partner learning from others

Percentage of respondents indicating there was an opportunity to learn from other partners through the Reef Alliance's collaborative approach - 2018/19 (n=25)

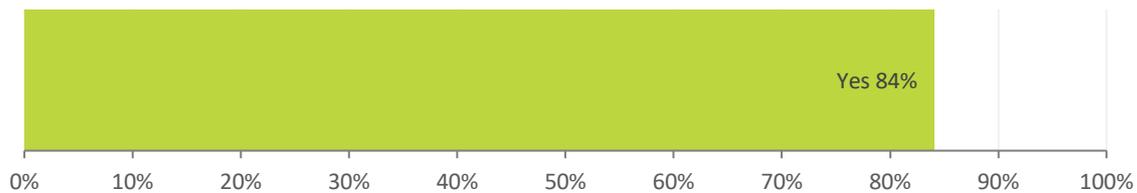


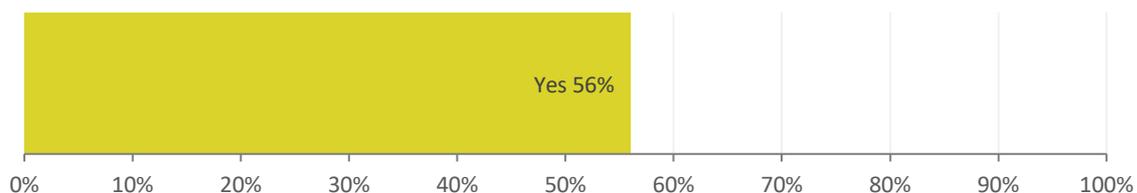
Table 7: Opportunity to learn from other partners through the Reef Alliance's collaborative approach

	2016/17	2017/18	2018/19	Change
Percentage of respondents answering yes	80%	83%	84%	▲▲

Reference was made to opportunities taken to share ideas and problems, joint workshops and training days and learning about data management and monitoring and evaluation.

Figure 5: Adoption of GGBR processes

Percentage of respondents indicating their organisation adopted any GGBR project processes or systems- 2018/19 (n=25)



Fifty-six percent of partners in the 2018/19 survey reported that they had adopted some of the processes and systems – for example, around the GGBR Database, use of the Collector App and delivery methods. Sixteen percent responded had not because GGBR processes and systems were not relevant to other activities in their organisation and 28% had not, citing 'other reasons.'

Table 8: Adopted any GGBR project processes or systems

	2016/17	2017/18	2018/19	Change
Percentage of respondents answering yes	68%	70%	56%	▲▼

It was suggested that the decrease over time over time may have been because there were new staff answering the survey who may not have been aware of changes made in the first years of the project.

Comments from partners in relation to benefits of cross-organisational learning include:

“ *Extension training and workshops with other partners provided an opportunity to hear about how other organisations do things and to share how we do things. (Australian Banana Growers’ Council 2019)*

Shared learnings between the Grazing delivery partners at the working group meetings and also by visiting each others’ regions. (Fitzroy Basin Association 2019)

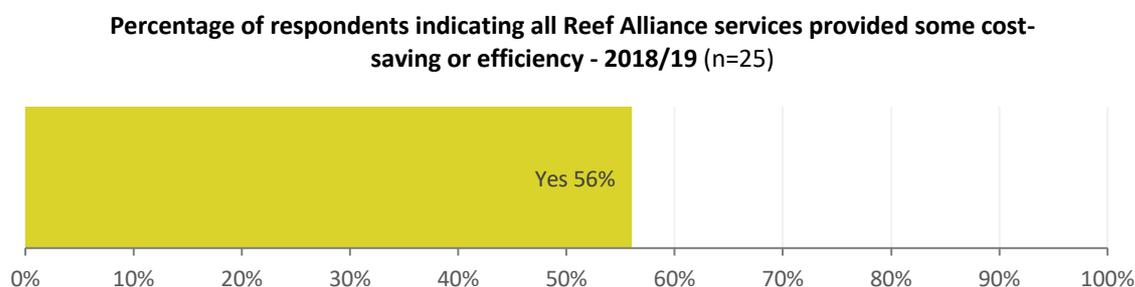
Symposiums in relation to what is working well and what is not working well - furthering the benefit of collaboration (NQ Dry Tropics 2019)

Face to face meetings with staff from other locations to understand what they do and how they do it (NQ Dry Tropics 2019) ”

2.3.4 Cost-Effectiveness

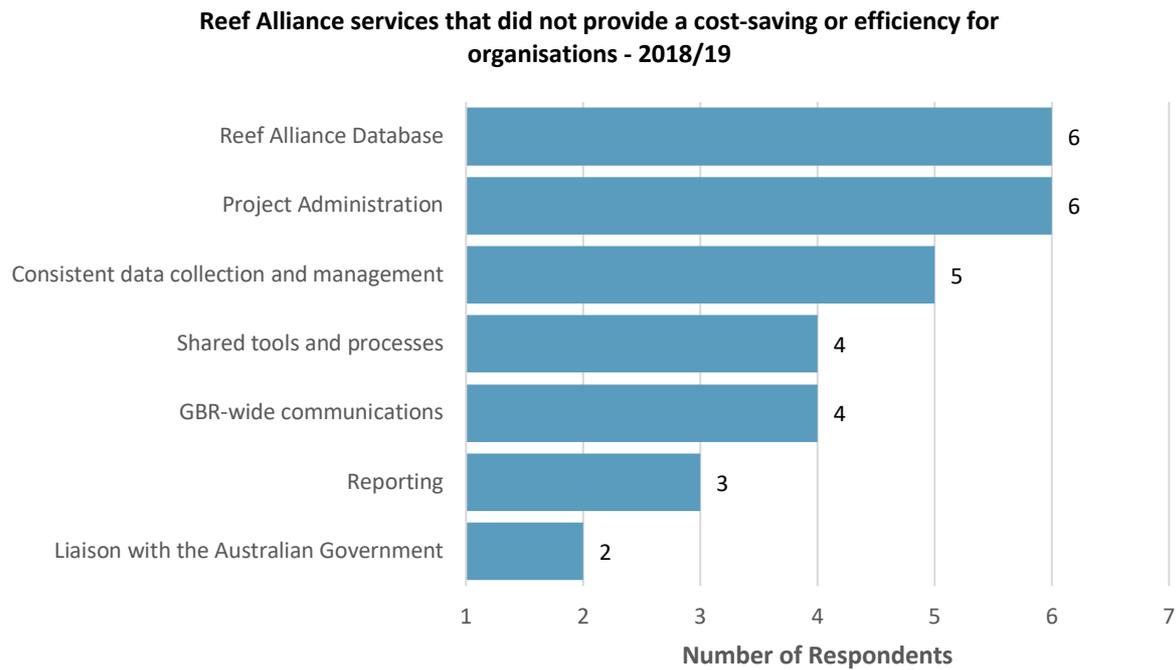
Efficiencies also had the potential to result in cost savings for organisations – for example, use of a common database, shared training and other opportunities. Fifty-six percent of partners in the 2018/19 survey indicated that their organisation had gained cost-savings or efficiency.

Figure 6: Partner Feedback on cost-efficiency



The areas that were nominated *not* to have provided efficiencies are highlighted in the following graphs from the 2018/19 Partner Survey (note the responses are shown in order of the greatest number who nominated these – with, for example, only 6 of the 31 responses nominating the database and administration and 2/31 nominating liaison with the Australian Government).

Figure 7: Services not providing cost-efficiencies



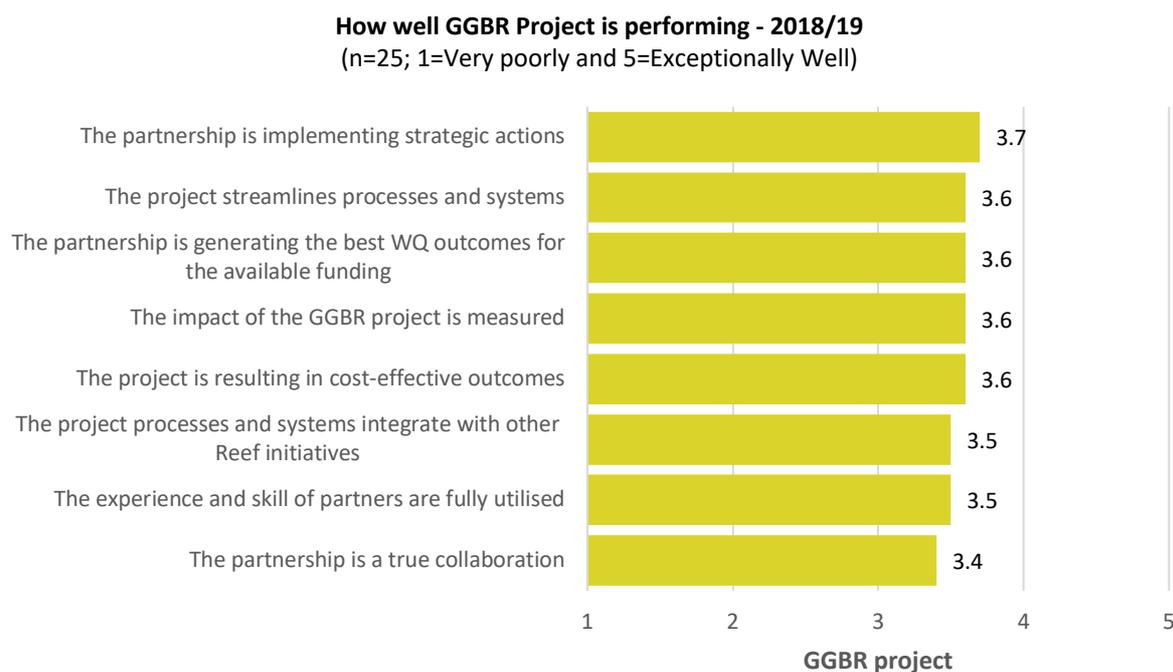
The lack of reported efficiencies with project administration and reporting by some partners was noted in the 2019 Evaluation which explained: *reporting demands of partners was not seen to have been lessened by the arrangements as they were required to report to QFF at the same level that they would have reported to the Commonwealth. QFF had significant reporting in pulling the commodity and overall reports together.* The responses in the above graph, however, show that benefits and efficiencies were found around the central reporting function to the Commonwealth, consistency of data collection and shared tools and resources.

2.4 Performance

2.4.1 Model Performance for Partners

When taking an overview of the project, partners on average, have consistently rated the different overall performance areas as positive (above 3.2/5) as shown on the below graph.

Figure 8: Partner ratings of project performance



This consistency has been seen over the life of the project – with an upward trend in the final year after a slight drop mid-project.

Table 9: How well the GGBR project is performing over time (1-5 rating)

	2016/17	2017/18	2018/19	Change
The partnership is implementing strategic actions	3.6	3.4	3.7	▼▲
The project streamlines processes and systems	3.6	3.3	3.6	▼▲
The partnership is generating the best WQ outcomes for the available funding	3.6	3.4	3.6	▼▲
The impact of the GGBR project is measured	3.7	3.5	3.6	▼▲
The project is resulting in cost-effective outcomes	3.4	3.3	3.6	▼▲
The project processes and systems integrate with other Reef initiatives	3.6	3.2	3.5	▼▲
The experience and skill of partners are fully utilised	3.6	3.3	3.5	▼▲
The partnership is a true collaboration	3.3	3.6	3.4	▲▼

2.4.2 National Recognition

An aspirational goal was that *GGBR outcomes and impacts are nationally recognised*. The analysis of communication outcomes earlier demonstrates that there was a reasonably high level of communication between partners and directed at broader stakeholders within the Reef regions. This included the successful Reef Champions Awards. There was high recognition of GGBR within the partners and immediate stakeholder groups but a lack of information about how much recognition there is of GGBR or its achievements outside of these groups.

There did not appear to be strong intentional communication activities outside of Queensland – beyond the involvement of the Commonwealth department responsible for Reef Trust III – who obviously recognised the GGBR and were aware of its model and contributions to date. There is acknowledgement that social media posts of course transcend geography and there would have been some recipients of the e-newsletters who were not Queensland based. Additionally, there was some international media interest in the Reef Champion Awards resulting in coverage in France for example. However, this cannot be translated to Australian recognition of GGBR.

A paper was presented about GGBR to the National Coastal Conference in Hobart and the GGBR was also presented at the 2017 APEN Conference in Townsville and then again at the 2019 APEN Conference in Darwin – both of which included many interstate and international participants. Jeff Coutts referred to GGBR at the European Symposium on Extension and Education in Crete in 2017 as an example of cross stakeholder participation in delivering outcomes in a complex situation.

2.5 Approach and Impact Pathway

The project proposal stated that: *the highest priority activity will be training and extension, with the majority of activity focussed on one-on-one extension. Training and Extension represents 60% of the total budget, with the emphasis on extension, as training has been delivered extensively over the past five years*. In describing the delivery approach, the proposal went on to say:

- *Delivery will be a mix of extension, incentives and innovation with an average across industries of 51% of funding for extension, 13% for innovation and 21% to incentives.*
- *Incentives will only be provided in high priority locations, based on clear action plans that eliminate a significant barrier to change. They must accommodate justifiable regional/industry differences and ensure efficient and consistent delivery of funds across the whole GBR.*
- *There will be clear links between specific on-farm or cross-farm actions and sub-catchment NRM and WQIP targets and Reef water quality outcomes reported through P2R.*
- *The project will include reasonable costs for central and efficient management, administration, monitoring and project coordination for RA members.*
- *The project will be flexible to maximise the investment return on extension activities as highlighted through BMP programs.*

2.5.1 Extension and Incentives

The fundamental extension approach used in cane and grazing was one-on-one assistance to develop a farm/property improvement plan (or Nutrient Management Plan or similar) and benchmark practices against the relevant P2R WQRF to identify where improvements could be made. Expertise, training and/or incentives were then used (not in all cases) to facilitate change where producers were willing and able to act on the opportunities. Other commodities relied wholly on incentives and linking support for practices identified against their industry environmental benchmark frameworks (e.g. Hort 360). Bananas used incentives as a motivation to get growers involved in extension and workshops that led to practice change.

Those working with farmers in developing plans reported a great deal of satisfaction with this approach and its effectiveness. It was also appreciated by the producers engaged in this way. Some complementary extension approaches were used – but these were not very widespread. There was a greater opportunity to have had more impact on the broader producer population with group approaches while still focusing on one-on-one engagement and incentives in higher priority farms and properties.

The change to incentives levels (mostly lower amounts than previous rounds of the Reef Rescue and Reef Program) added some extra challenges where producers were used to the incentive-based approach. Lower incentive caps reduced their usefulness where this was the primary change tool (although this was not the case in all industries). Additionally, new and existing extension staff needed to develop (new) contacts, relationships and build trust. It was observed that the need to seek out new producers rather than simply funding those who wanted to make changes was potentially challenging for extension officers.

Across some commodities there were issues where small farms (even in priority areas) had less access to extension and incentives which affected relationships with the extension deliverer. There was tension between delivering on the hectares in priority areas versus producers across the region. The extension effort was mainly directed at one-on-one working with producers to develop Nutrient Management Plans or Property Improvement Plans (Grazing) to encourage identified practice changes that could benefit the enterprise and meet industry best practices to improve water quality outcomes.

In practice, there was a more diverse pathway to change. In some cases, rounds of grants were advertised at different stages of the project and were independent of the extension process. In other cases, grants were dependant on being linked to an extension developed plan or successful grant applicants were required to undertake some level of training. Given the time it takes to appoint new extension people, equip them and then take their actual work on-ground into account, an early grants round was seen by some as a way of achieving more immediate engagement and better progress in the first year. Others used incentives to help plug gaps in meeting required hectares and practice changes towards the end of the project.

2.5.2 Industry specific approaches, practices and issues

CANE

There were differences between regions and between districts in terms of the context of the industry, availability and skills of extension providers and the priorities chosen for practice change. For example, in the Burdekin, the focus was on irrigation improvements; in the Wet Tropics the focus was Nutrient Management Plans; and in the Burnett Mary, there was also a focus on the Six Easy Steps. The main method used was one-on-one extension although in some cases training was offered or provided. There were also differences in the way incentives were used with extension. As noted above, in some cases incentives were not directly linked to extension (independent rounds) and in some cases were not limited to high priority areas. In other cases, one-on-one extension was complemented by demonstrations (e.g. HPCSL in the Wet Tropics) as well as training (e.g. the Six Easy Steps).

In the Wet Tropics, WTSIP provided the coordination of the extension effort and in other cane regions, the NRM bodies took on this role directly. Delivery was either through sub-contractors (for example Productivity Services or private companies) and/or by NRM body staff/specially appointed extension officers (see diagram at the front of this report). 'Numbers of farms to engage' was tendered for or allocated to meet the contract requirements for the regions. These numbers were reduced with a contract variation early in the project when they were deemed to be too high, and in some cases, underspent funds were reallocated to other regions. There were still mixed views about the achievability of revised levels by extension deliverers.

Regions undertook a prioritisation process. For example, NQDT held a stakeholder workshop to help decide on priorities for irrigation in the Burdekin and the Wet Tropics developed a prioritisation strategy and reporting to WTSIP.

HORTICULTURE (AND BANANAS)

Growcom delivered on the horticulture component of the GGBR project (other than bananas). The total across all 'other' horticulture was \$300,000 per year for the three years – so there was little to work with. The loss of some on-ground staff limited the ability to undertake extension and a request was made to convert some of these funds to incentives which were seen to be needed to encourage engagement. QFF assisted in gaining this variation but it took six months for this to be approved which impacted on delivery.

A variation was approved from May 2018 for Growcom to offer an incentive package of \$5,000 to growers to implement practices of benefit to nutrient, pesticide or sediment management. There was a proviso that this still resulted in the same outcomes. It was pointed out that this meant that *all the project funds from GGBR to Growcom were invested in incentives while the Queensland Government project funded extension staff. This way, the two programs ran complementarily.* Hort 360 was used to determine the practices to be supported with the incentive packages being advertised through the Growcom magazine, commodity group communications and VegNet. A working group was used at the initial stages of the process.

The uptake of incentives was slow. It was pointed out that targeted capital projects required significant grower outlays (e.g. \$40-50k) and the small incentives on offer were not a lot to trigger decisions. The hope was that the increase from the original \$2,000 limit to a \$5,000 limit would help the process in this last phase. Capital items supported included such things as drones (for mapping), spray applicators and compost spreaders. It was noticed that between the central coast and southern

regions (Burdekin, Fitzroy and Burnett Mary), most of the interest is in the Burnett Mary with growers appearing to be more receptive to the smaller grants.

The Australian Banana Growers Council (ABGC) managed the banana industry directed GGBR funds. The industry has their own Water Quality Risk Framework (although not as well developed or as well researched as cane) to guide practice change. Its focus was on the use of incentives to facilitate change. As noted in the section on the innovation projects, most of the initially approved innovation projects were unable to continue because of Panama disease. Funds were able to be reallocated for use as grants related to a workshop in sediment management. The workshop was the basis for obtaining a free one-on-one visit and also meant growers were eligible for incentive funds. A nutrient management workshop was also run where attendance was required to be eligible for incentive funding for nutrient projects.

It was noted that budgeting was easy when related to purchase of specific machinery – but more difficult when addressing an issue such as sediment. The banana industry reported that they found it frustrating they could not work with the growers who needed the incentives the most, to take them from a D to a B practice. The Commonwealth's belief that it is in the financial interest of the grower to get themselves to a C practice was described as not working for sediment in bananas the same way it worked for Nitrogen application. It was noted that this restriction also made it hard to achieve targets.

There was also some frustration with the Commonwealth focus on grower numbers and hectares as many of the larger growers tended to be the ones 'switched on' and often beyond the scope of the Reef Trust III criteria.

GRAINS

The FBA took the lead role in delivering the grains component of GGBR. As with grazing, Property Improvement Plans were used to identify needs for projects, training and extension and on-ground works aiming to produce practice change.

FBA worked with the cotton industry in the Fitzroy region as part of the grains project to support 23 growers managing over 23,000 hectares (these growers and associated hectares do not count towards the grains project target and will not be reported to P2R).

GGBR funding also enabled Barron Catchment Care (BCC) to promote the multi-cropping BMP manual (that was produced by the group in conjunction with farmers) by showing on-ground cases of improved sediment management.

DAIRY

The Queensland Dairy Organisation (QDO), which has a membership base of 70% of the industry, managed this component of the GGBR. A part-time extension officer in North Queensland and in the Burnett Mary were involved in on-ground delivery. Experts (e.g. from Department of Economics and Development) were also brought in. Dairy was the only commodity that had engagement targets separate from practice change targets. There was a recognition that dairy was considered a minor player in the GGBR project which impacted on resourcing.

There were staff changes which caused some disruption to the delivery. The targets for dairy were considered very optimistic by staff based on the low (and reducing - 400 to 300 across Queensland) numbers of dairy farms in the Reef regions. It was considered that while the *enterprise targets* were realistic, the *area targets* were not because: management targets did not always extend across the whole farm and farm sizes are quite small in coastal Northern Australia (100-150 ha).

There is no WQRF for dairy at this point (and no plans to develop one due to the industry's relatively small contribution to water quality issues). The dairy Better n Better modules / Dairy Sat are being used to identify priorities and assessments – although this does not easily correlate with the P2R requirements (which are seen as quite rigid). An example was given where a producer might have three bridges over a stream, but requires one more, and the difficulty with lining this up to the needs of P2R. It was explained that many dairy producers are already at 'best practice' and so it was not easy finding scope to make changes.

A workshop was held and an action plan developed resulting in the advertising of rounds of incentive funding in Stage 6. Farmer participation in targeted workshops was one factor that was taken into account in the selection process. Issues identified as working against practice change included: poor seasonal conditions; drought; business viability challenges; high costs (e.g. grain); and loss of people in the industry.

GRAZING

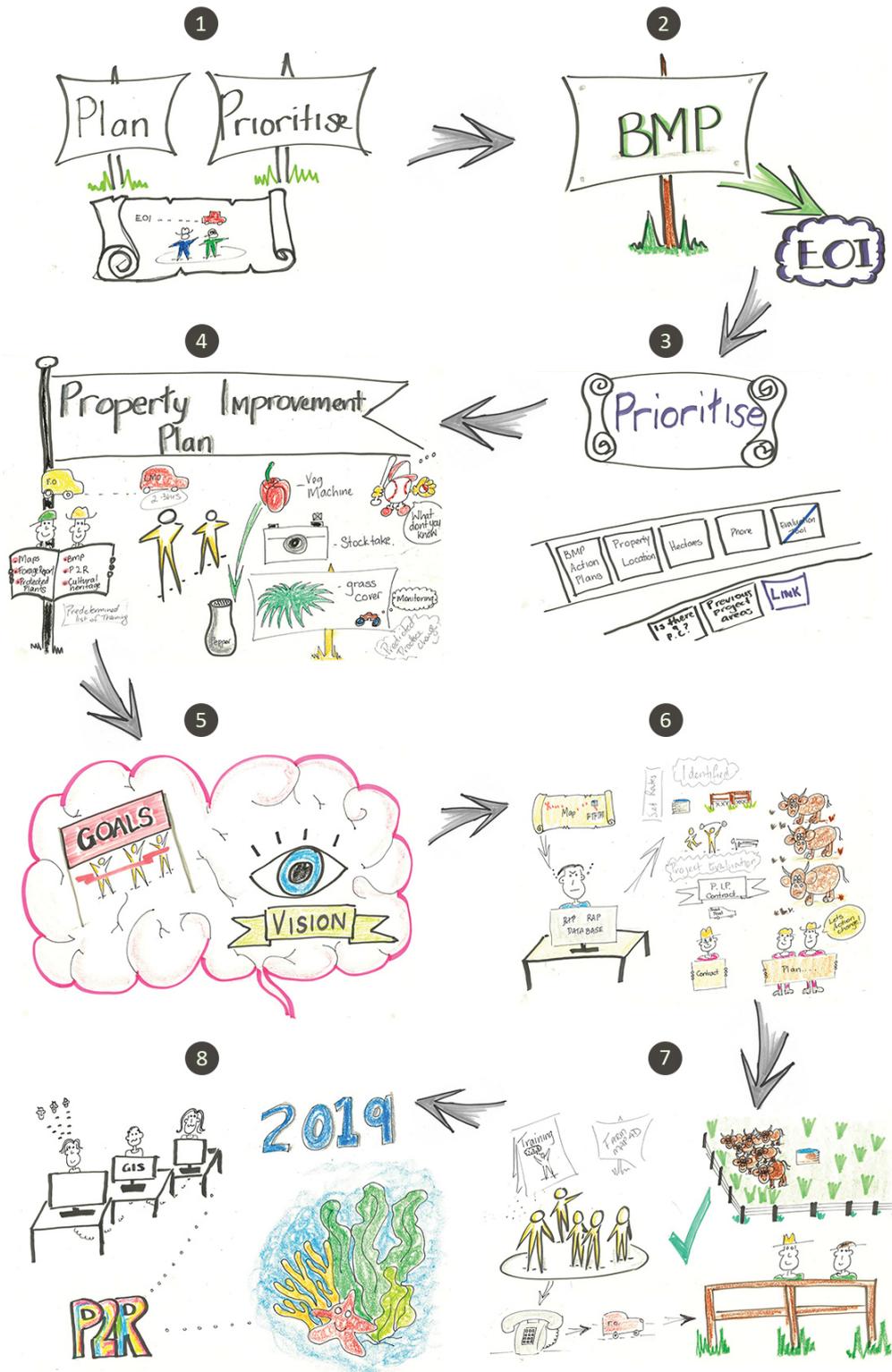
FBA, NQDT, BM and Cape York all had a role in the grazing component of GGBR. RCS was noted as one of the deliverers into grazing outside of the GGBR project (positive feedback by the Commonwealth). There was generally a long history of NRM body staff working with graziers in their regions with previous Reef Trust rounds and more broadly. A number of graziers were reported to have participated in Grazing BMP workshops and other training opportunities. Identification of producers was either through Expressions of Interest (EOIs), word-of-mouth, by advertising in other grazing events or directly approaching landholders in strategic locations.

The average property size of participating grazing enterprises is smaller than in the past. As recent science has reduced the priority of this practice change in delivering sediment reduction targets, the level of incentive funding available in GGBR has dropped from 60% to 40% on the sliding scale.

The Cape York region is smaller (20 properties, 800,000 ha) which allowed for stronger support and eventually engagement of all landholders. Priority areas as such were not an issue for this region as all properties were included – although hot spots for sediments on properties were highlighted. The Mary River Catchment and other districts in the Burnett Catchment were raised as a concern because of the lower priority given to them this round – *resulting in a loss of momentum for change*.

The focus was for extension staff to work one-on-one with producers to develop management plans and training and identify available funding through that process. This is illustrated in the series of illustrations from FBA in Figure 10 below (courtesy of Barbara McKechnie).

Figure 10: Grazing extension approach



Practice Change Takes Time

The following graphs show the lag between engagement and achievement of the practice change targets in cane. They highlight the time needed to establish the project (including employing of extension and support staff, organising contracts etc) and then the time required to work with growers to establish opportunities for improvements and their implementation and for incentive projects to be funded and underway. While the lag caused some concern in the initial years, the groundwork undertaken resulted in the objectives largely being met across regions and industries.

Figure 11:

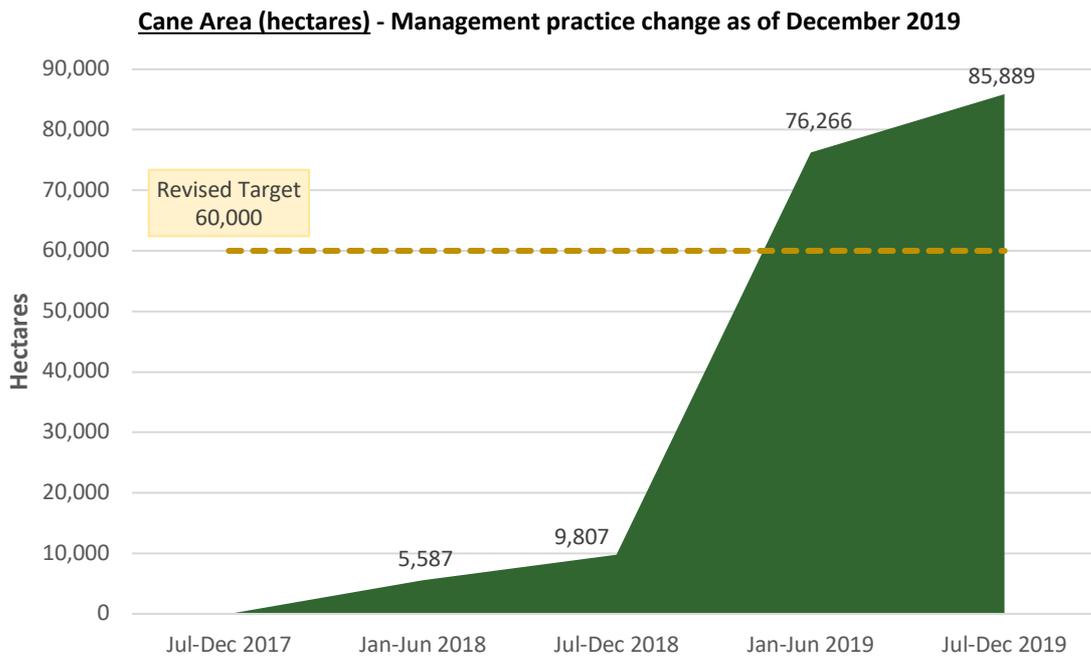
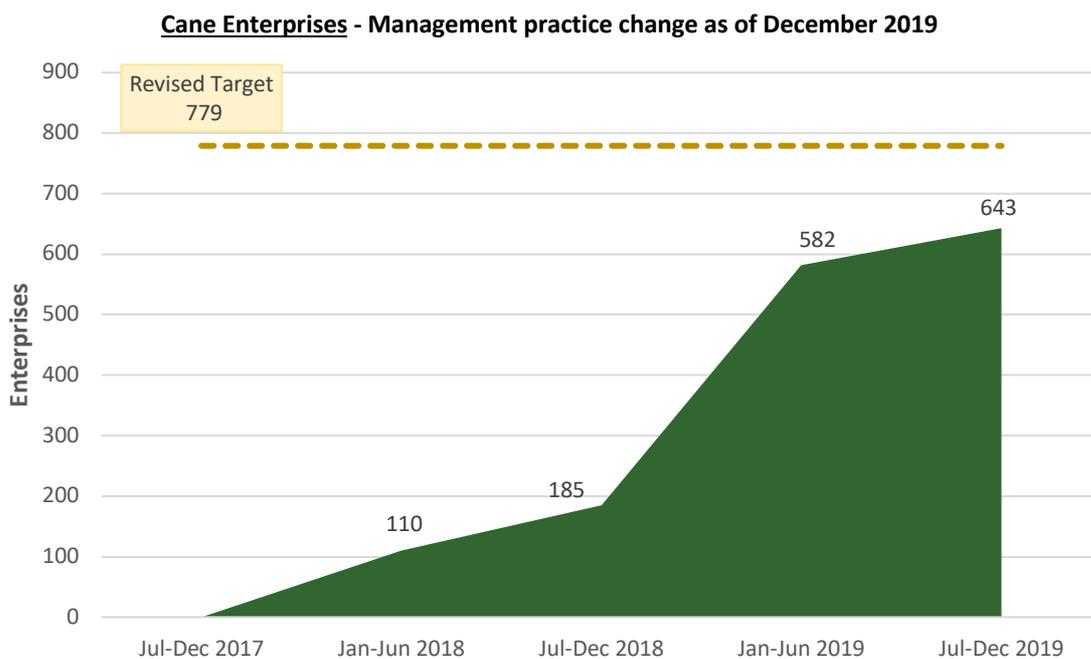


Figure 12:



2.5.3 Reef Champion Awards



I think the Reef Awards are a great way to learn through the experience and actions of others... (Fitzroy Basin Association 2018)

The Reef Alliance Awards are a valuable exercise - not just for our organisation, but for participants in our program. (Fitzroy Basin Association 2018)

From a communications point of view the Reef Awards seem to be the only reef-wide vehicle that grabs the attention of stakeholders. (Queensland Farmers' Federation 2018)



The Reef Champion Awards was an initiative of the GGBR project with support from the Australian and Queensland governments, which recognised and celebrated the achievements and efforts of outstanding individuals and organisations who have taken action to improve the quality of water entering the Great Barrier Reef.

The Reef Champion Awards were a key communication activity for GGBR which received strong and positive media coverage about landholders taking action to protect the Great Barrier Reef. This was the project's key large-scale communication initiative. In 2017, the awards were presented as an add-on to the Reef Synthesis workshop. They also recognised too the important contribution made extension officers in supporting practice change at a grass roots level.

2017 Award Winners

- ★ **Reef Nutrient Management Award category**
Christopher Russo, Farnsfield, for his innovative modification of a high clearance tractor and nitrogen injection bar to apply liquid nitrogen subsurface, allowing later nitrogen application.
- ★ **Reef Sediment Management Award category**
Dan Bishop, Hill End Farms Pty Ltd, Rockhampton, for on-farm efforts to address gully erosion reducing sediment loss by 123 tonnes per year and increasing on-farm productivity.
- ★ **Reef Conservation Award category**
Gary & Angela Spotswood, Inkerman, for restoring the ecological function of Mt Alma's 100 ha lagoon providing important habitat for wildlife including migratory wader birds and fish species such as Barramundi.
- ★ **Reef Extension Officer's Award category**
Debra Telford, Mourilyan, for her instrumental role in delivering grants and extension support to growers to reduce their impact on water quality over 20 years in the sugar industry in Far North Queensland.
- ★ **Prince of Wales Environmental Leadership – Reef Sustainability Award**
Frank & Dianne Sciacca, Innisfail, for co-founding the innovative Ecoganic™ farming system, which enables fungicide reduction of 60-100%. Their 'Wax Tip Bananas' are available in nearly all Australian states and territories.

In 2018, there was a desire for a larger event to celebrate the International Year of the Reef and recognise the broader community's involvement in protecting the Reef. This led to an enlarged awards activity, jointly delivered by the GGBR and the OGBR. The 2018 awards achieved: strong partner buy-in and a driver of collaboration; good relationship building with the OGBR as co-organiser; increased categories and entry numbers (50 across 8 categories) and widespread media coverage (particularly broadcast and social media). This may have also been boosted by involvement of the Princes Trust Australia. Partners generally viewed the awards very positively and as a good opportunity to promote landholder achievements. Post the 2018 awards other organisations (e.g. GreenFleet and Griffith University) contacted GGBR partners to get involved in the Reef work.

2018 Award Winners

★ Reef Nutrient Champion Award

David Defranciscis for working collaboratively with government, industry and fellow cane farmers, to drive change on his property and within his community to achieve real results for the Great Barrier Reef and the viability of cane farm businesses in the Burdekin catchment in Queensland..

★ Reef Sediment Champion Award

Bob Harris for projects undertaken to fence riparian areas and land in fragile condition and the implementation of Holistic Management principals which has resulted in increased plant production, improved water infiltration and retention, less land degradation and improved lifestyle and profitability.

★ Reef Conservation Champion Award

Mt Pleasant Station Management for a strategic decision to move away from a production-based business model to focus on landscape function and environmental health resulting in enormous economic and environmental rewards through both ecological enhancement and improved productivity.

★ Reef Pesticide Champion Award

Phillip Deguara for being one of the Sandy Creek growers responsible for implementing the grower-led water quality monitoring conducted with the Department of Environment and Science Water Quality Investigations team as part of RP144C Sandy Creek project and using his experience to inform other growers about pesticide movement.

★ Reef Extension Officer Champion Award

Joint Winner – **Allan Blair** – who has spent a lifetime working with growers in the wet tropics of Queensland including the design of a sprayer that can apply two different types of herbicide at the same time reducing the potential for contaminated run off that can impact water quality in the reef catchments.

Joint Winner – **John Day** whose career represents over 35 years of achievements working with landholders to enhance their land management practices including recently directly overseeing the remediation of over 54 sites throughout the region in construction works. He has been instrumental in promoting landholders' uptake of best practice soil conservation practices including for example: groundcover and water management; rehabilitation of actively eroding sites; gully, track and hillslope erosion and deteriorating contours bank in cropping areas.

★ Reef Community Champion Award

Mulgrave Landcare And Catchment Group – for having achieved landscape scale change in the Mulgrave catchment with the recent conclusion of a five-year biodiversity project - 33,000 trees were planted, much of which was riparian revegetation which helps prevent streambank erosion and blocks nutrients and sediments from entering the water column.

★ **Reef Youth Champion Award**

Joint Winner – Nicole Nash – who after watching thousands of people use single-use plastics everyday as a marine biologist working on various reefs around the world, Nicole Nash launched The Last Straw on the GBR campaign. Through a partnership with Wet Tropics Healthy Waterways and Terrain Natural Resource Management group in Cairns, Nicole has taken action to raise awareness that 80% of marine debris actually enters the ocean from a land-based source and encouraged venues within a 200km radius of the QLD coast to go plastic straw free.

Joint Winner – Gavin Rodman who grew up on a sugarcane farm in Deeral and is well known and respected by the local farming community. He has worked for Sugar Research Australia (SRA) as an Adoption Officer for over three years, based at both Tully and Meringa in the Wet Tropics engaging directly with industry to make a tangible impact to environmental sustainability and agricultural productivity.

★ **Reef Youth Champion Award – Under 15**

Sid Crawshaw - Ten-year-old Sid Crawshaw is significantly improving the quality of water that flows to the Great Barrier Reef by reducing the use of single-use plastic straws in his coastal home-town of Tannum Sands. Sid has encouraged his fellow school students and family members to say 'no' to straws and three local business owners challenged themselves to make a change.

★ **The Prince of Wales Environmental Leadership Reef Sustainability Award**

Gerry Deguara for being a leading figure in promoting stronger natural resource management within the Australian sugar industry with major changes to his farm water infrastructure and the successful use of centre pivots for irrigation and implementing a controlled traffic farming system maximising the growing area of his paddocks, reduce fossil fuel use, improve yields, improve soil health and reduce the volumes of chemical and nutrient run-off in water leaving the farm.

The awards continued in 2019 (same categories as in 2018) although this was through a separate funding stream from the Australian Government and not as a part of the GGBR project.

Impact of Awards on Producers

Three past winners (from 2013-2017⁷) were followed up to better understand the impact of the awards on the producers involved. All agreed they had benefited from participating, that it was worth the investment and that they had probably received some recognition amongst the industry. They had mixed reactions to the broader industry impacts of the awards with one commenting that the awards mostly reach those already aware of environmental issues. All had shared their learnings and experience with others in the industry. The 2017 award winner interviewed provided the following comments in relation to the award value:

“

The recognition from the awards gives a degree of credibility and makes it clear that certain growers are not just “beating their own chest...I believe there is a big disconnect between government, growers and the community – the awards help to tie these parties closer together...The awards were fantastic, well organised and I enjoyed them thoroughly – a great way to bring different groups together, and for growers to help each other.

”

⁷ Reef Award Outcomes – Project Summary, 26/07/2018

2.5.4 Other Communication Activities

Communication was a key feature of the GGBR project, both within and outside of the partners. It was seen as important to maximise understanding and collaboration around the project's approach and benefits.

The previous section highlighted the role of the Reef Champions Awards as a key communication tool. Other communication activities undertaken over the course of the project are summarised in the following table together with reported reactions and outcomes.

Table 10: GGBR communication activities

Activity	Details	Reactions / Outcomes
Communication of [project] successes, learnings, progress & impacts through various mediums	<ul style="list-style-type: none"> Reliable 5 Newsletter (every 3 weeks, approx. 540 subscribers, (30-35% open rate; 8-10% clicked links) Quarterly Reef Alliance e-newsletter (484-504 email addresses; 32-39% open rate; 7-9% clicked links) Internal GGBR updates to 46 staff from 12 Partners (fortnightly) 	Outside of newsletter open statistics and click through rates, feedback has been anecdotal (generally positive) and ad hoc.
	Regular social media engagement	Social media mentions over 2018 were seen on Meltwater ⁸ with clear peaks particularly in November (announcing the Reef Champion Award winners). This indicates that social media posting was happening as part of the GGBR communication activities. However, without viewing the posts it is difficult to ascertain their content and the level of engagement and sharing that may have happened.
	Meeting attendance (e.g. Reef 2050 Communication meetings, National Coast to Coast Conference April 2018)	There is no information about reaction to/impact of attendance at these meetings.
	GGBR management committee meeting updates	Opportunity at management committee meetings to update on relevant GGBR project activities – including summary of partner survey findings.
Annual presentation to key stakeholders highlighting GGBR outcomes & impacts	GGBR Impact Statement flyer (produced 2017 and 2018)	Short summary brochures of impact across the project distributed to partners and other stakeholders. The slower than expected start limited their value in the first years of the project.

⁸ Meltwater is a media monitoring service which provides a dashboard of online media coverage sourced using keywords. Coutts J&R were provided with a link to the 2018 dashboard. A chart showing coverage volumes indicated a spike of 26 articles in November mostly linked to the Reef Champion Awards (6 were focused on National Ag Day which is not linked to GGBR).

Activity	Details	Reactions / Outcomes
Annual Reef Summit and Reef Awards (17/18 & 18/19)	Reef Champion Awards: 2017 and 2018; 3 videos developed from March 2018 Heron Island Research Study tour	As above, this was viewed as the project's key large-scale communication opportunity.
Cross-regional collaboration to share information, challenges and successes	Communication Group formed including partner communication officers with mostly quarterly meetings. Involvement in forums including OGBR Synthesis Forum (QFF member of 2018 Steering Committee) QFF involvement in Reef Extension practitioners Forum (August 2018)	The Communication Group was felt to be valuable by 2018 Partner survey participants for generating broader awareness of regional activities. There was potential for it to be better used to generate content for broader communications and gain feedback about the process more consistently.

The 2019 Evaluation of the project included an assessment of how well the communication goals were being met. These are summarised in the following table.

Table 11: Evaluation of communication goals

Goal	Impact
Build awareness of the Reef Alliance delivery model, what it aims to achieve and the success to date.	<p>Based on the Partner survey responses (2017 and 2018), the internal project communications have been partly successful in building partner awareness of the Reef Alliance delivery model, what it aims to achieve and its success to date. There was a general agreement that the project's impact was being measured at a moderate to good level and the decision making process was mostly understood. Partner respondents generally agreed the governance structure was easy to understand.</p> <p>Without a broader survey of the primary external audiences⁹, there is little evidence around any changes in their awareness of the GGBR delivery model resulting from the communication activities. Those receiving the Reliable 5 and quarterly e-newsletter and opening the email (regularly over one third of subscribers) could be assumed to have increased their awareness over the life of the project so far. Additionally, stakeholders attending conferences and meetings (noted above) where GGBR has presented could also be assumed to have gained some knowledge and awareness of the project.</p> <p>The Reef Champion Awards (described earlier) were a key communication activity for GGBR which received strong and positive media coverage about landholders taking action to protect the Great Barrier Reef. They also fostered a stronger relationship with the OGBR communication team in 2018.</p>

⁹ From the Communication Strategy July 2018 – Australian and Queensland Government Ministers and agencies, Landholders, Conservation groups, research and science institutions.

Goal	Impact
<p>Encourage a high level of collaboration between partners involved in the project</p>	<p>Respondents to the partner surveys (2017 and 2018) agreed there was a moderate to good level of true collaboration between partners involved in the project and that the decision making process is collaborative. The effectiveness of internal communication processes will have contributed towards this rating. As noted above, the internal communications also included fortnightly partner GGBR updates informing of QFF activities, key meeting and action dates and opportunities to participate.</p> <p>There was agreement from QFF that regular communication meetings have contributed to a broader awareness of what is happening across the regions. The Reef Awards were particularly felt to have driven collaboration between partners around their interest in nominations resulting in increased 2018 entries.</p> <p>A member of the OGBR communication team also attributed the on-ground nature of GGBR's network partners and their linkages to people as a key reason for the increased positive entry response to the Reef Champion Awards.</p>
<p>Highlight the work and investment of landholders to improve the quality of water flowing to the Reef</p>	<p>The Reef Champion Awards (particularly 2018) has been the key communication activity contributing towards this goal. The winners were publicised in a range of regional media outlets as noted above – with CANEGROWERS in particular receiving good regional coverage for its story on the winner. It is clear this communication opportunity has been particularly successful at highlighting the work of landholders in Reef regions.</p> <p>The Reliable 5 newsletter (approx. 540 subscribers) also contributes stories highlighting work of landholders (e.g. October 2018 story about Bundaberg potato grower Mark Fritz). The Reef Alliance E-news were also distributed to partners, stakeholders and wider community</p> <p>A QFF team member noted that a key learning to date was the opportunity to <i>further utilise Reef Award recipients in promoting their work to foster a culture of change.</i> This could include follow up industry and NRM body publicity opportunities, developing in-depth industry case studies and potentially farm walks on winning farms (those who are willing).</p>

2.5.5 Innovation Projects and Approaches

Innovative Practices

The GGBR project also had the scope to trial and validate innovative practices which improved water quality. The proposal said: *In addition, the project will support trialling and validating innovative practices in order to establish new practices to bring “on-line” for future delivery. This project will also trial innovative approaches in extension and engagement in order to reach the broadest range of farmers.* A number of guidelines were included that would inform the selection of these practices and also warned that not all might succeed after testing. Any individual project over \$40,000 had to be approved by the Commonwealth (which also applied to incentive funded projects).

The cane and grazing commodity groups provided the forums to review proposals for innovation projects. There was some degree of ‘back and forth’ between the Commodity Groups and the regions and industries as well as with the Commonwealth. This resulted in an extended approval process and some frustration for partners.

Horticulture (excluding bananas) and dairy decided not to use innovation funds. Bananas initially had three innovation projects approved after a short delay which was then disrupted because of Panama disease which limited machinery moving between properties. Two of the projects were withdrawn. Funding intended for a bioreactor trial for bananas was reallocated into sediment grants - allowing ABGC to utilise these funds for water quality outcomes. A project directed at a new 'bagging machine' continued.

Grazing and grains advertised industry magazines and newsletters for their initial call for innovation projects. Processing took an extended period with no proposal deemed suitable, so a second call was made. Three grazing and two grains innovation projects ended up being funded, however, the delay in finalising meant that the projects had a relatively short timeframe – which limited their potential success. Negotiation was needed to reallocate unspent funds to regions to help with reaching practice change targets.

The general consensus was that this element of the GGBR project did not achieve as much as it could have. The calls for projects were under-subscribed and there were issues around how innovative they were. The approach was not thought to be a good model as producers did not necessarily know how to develop such a proposal. A measure of these concerns was that there was no interest to include innovation funding in the Alliance's proposal to GBRF.

Innovation projects funded were:

CANE

- Engineering modification of Dual Liquid application machinery and equipment to create efficiencies in the split application of Nitrogen and targeted Confidor application
- Evaluating the potential of using high-clearance spray tractors to do a late/split nitrogen application (100 days post emergence) to improve Nitrogen Use Efficiency (NUE).
- Weather forecasting
- Advanced irrigation systems for automated flood and trickle irrigation
- Modify and trial a bed renovator to do zonal tillage and form a raised bed to suit the spectrum of soil types found in Mossman/Daintree area form a raised bed
- Design, manufacture and trial a piece of machinery, a 'Sub Zonal Infiltrator', that will allow zonal ripping at a depth of 1 meter
- Investigate the use of Soil Information Services and Red Edge Technology to map soils across properties for the optimisation of fertiliser and agrochemical applications.
- Purchase a strip tillage machine to share among grower groups for tillage with less soil disturbance resulting in better soils and better N cycle. Adapted for 'bed-top'
- Purchase a strip tillage machine to share among grower groups for tillage with less soil disturbance resulting in better soils and better N cycle. Adapted for inter-row.

GRAZING

- Developing partnerships for managing late-season wildfire
- A trial of a soil aerator and a seeder to improve soil structure and water retention, with the ultimate aim of increasing health and productivity of the pasture, reducing soil loss and run off, and improving water quality.
- Testing normalised difference vegetation index (NDVI) to analyse remote sensing measurements. Trials and demonstration. The project is setting up NDVI handheld sensors to be used as a pasture budgeting tool to graziers on the Burdekin catchment area. This involves calibrating the sensors against pasture yield and pasture quality, writing standard operating procedures for their use, trialling with a group of graziers, developing training materials, delivering training, and finally, promoting them to a wider audience. By helping graziers better budget the pasture, stock is likely to be better managed, resulting in better retention of pasture and minimising soil loss.

GRAINS

- Deliver access to robotic technology (SwarmBot, software and attachments) to farmers, at reduced financial risk, for the purpose of trialling new technology that uses robotic technology to kill weeds with less chemical use and less soil compaction than conventional methods.
- Increase adoption rate of Variable Rate Application (VRA) and water drainage tools to farmers in reef catchment areas by providing access to tools and systems that can break the barriers that currently hold farmers back

BANANAS

- There were three innovation projects approved for bananas - although with short time frames. The breakout of Panama disease meant that projects were disrupted – as there was a ban on movement of machinery/equipment). Projects included: Track bagging (reduce inter-row sediment loss); and pivoting-head slasher for use on their farm to reduce the time needed to slash their inter-rows.

Innovative Extension Approaches

The project also planned to explore innovative approaches to change because of the perceived 'saturation' of current efforts – and saw more use of social science and behavioural analytics as potential areas to explore for future initiatives.

A call was put out for innovative engagement proposals, however no proposals considered innovative were received. Some partners did however, try different approaches as part of their delivery. The July-December 2018 MERIT report included information on the strategies being used in grazing to engage a larger number of enterprises including:

- *A series of "over the fence" demonstration projects to stimulate additional interest in whole of farm extension opportunities. This meets the significant interest in peer-to-peer learning opportunities and that trust in peers is often stronger than outsiders. These projects involve friends and neighbours' field days intended to disseminate the story of improved practice change for water quality, and the simple changes landholders can make to their management to achieve these outcomes.*
- *A field tour of the NSW Southern Highlands to look at sites where landscape rehydration techniques have been implemented. This meets the interest amongst the grazing community to undertake landscape rehydration activities – and was seen as especially useful when it connects more experienced farmers (who carry out better management, such as being competent in forage budgeting) with less experienced ones and build their capacity and confidence in improving these practices. The project is taking a focus on exploiting peer-to-peer learning models for getting interest in changing practices.*

NQDT reported the use of the newly developed P2R Projector Tool to enable extension officers to forecast and communicate the resulting water quality improvement of grower proposed changes. Project Officers found it a very useful engagement tool which helped growers to bridge the gap between farming practices and water quality outcomes in a visual and readily understandable format allowing extension staff and growers to fine tune projects and optimised the water quality benefits and return on investments.

3 ACHIEVEMENTS AND LEGACY

3.1 Impact Targets

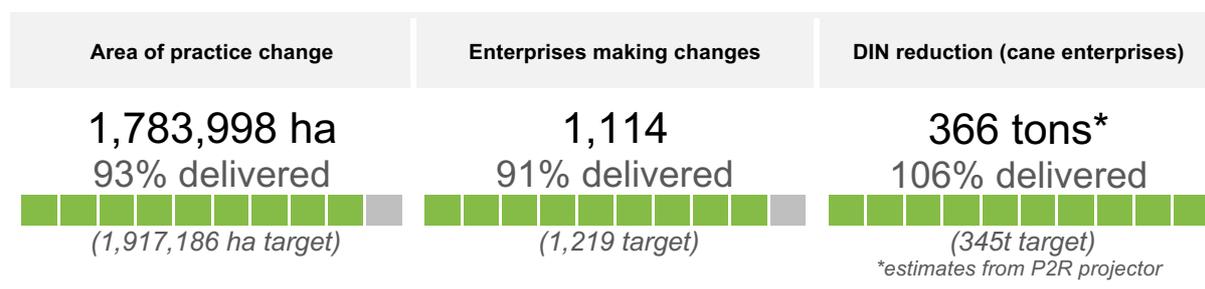
By June 2019, 1,219 farmers and graziers covering 1,917,186 ha in 33 GBR catchments have improved farm management practices to contribute to a 4.4% (169Kt) reduction in sediment load, 6.9% (345t) reduction of dissolved inorganic nitrogen and a continued reduction in pesticide load generated from broadscale agriculture in priority Reef catchments.

- Ongoing pesticide load reduction
- Innovative land management practices have been developed, trialled and implemented by early adopters
- Innovative engagement methods have increased the reach of land manager engagement in practice change

Targeted WQ practices implemented by farmers and graziers:

- 38 banana growers over 1,616ha
- 78 other horticulture growers over 5,070ha
- 779 cane growers over 60,000 ha
- 84 grain growers over 250,000 ha
- 60 dairy farmers over 12,000 ha
- 180 graziers over 1,588,500 ha
- Innovation land management practices have been included in industry BMP programs

3.2 Practice Change and DIN Reduction Achieved



As of December 2019, the GGBR project had recorded management practice changes to 1,114 enterprises across almost 1.8 million hectares of land – falling just short of the overall revised targets (1,219 enterprises across 1,917,186 hectares). By industry, grazing accounted for 90.8% of the total hectares impacted, while cane (57.5%) and grazing (20.4%) contributed to the majority of enterprises making changes.

It should be noted that in the context of the GGBR project, a practice change is based on a positive shift in the specific Water Quality Risk Framework categories – practices outside of this definition also occurred but were not recorded.

Each of the five industries were set delivery targets based on previous experience with grants in the earlier rounds of Reef investment (Reef Programme and Reef Rescue), with expected hectares based on the average farm/property size of those anticipated to make a change. The original outputs and outcomes were revised down (except for dairy) based on early project experiences – achievement of these revised targets by industry were:

- Grazing:** 227 graziers made management practice changes across 1,619,910 hectares – exceeding both the hectare and enterprise targets (102% of 1,588,500 ha and 126% of 180 enterprises). Improved practices included: fencing of riparian areas and access to off-stream watering points; erosion remediation works; improved management of grazing pressure; and installation of infrastructure (e.g. water pipes, solar pumps, water troughs) to better manage stock movement.
- Cane:** 643 cane farmers made management practice changes across 85,889 hectares – well exceeding the hectare target (143% of 60,000 ha) and almost delivering the enterprise target (83% of 779 enterprises). Improved practices included: fertiliser optimisation; improved irrigation infrastructure and management; and use of GPS technology.
- Grains:** 79 growers made management practice changes across 70,061 hectares – falling well short of the hectare target (28% of 250,000 ha), though almost delivering on enterprises (94% of 84 enterprises). Improved practices include on-ground works to reduce sediment run-off.
- Horticulture:** 102 growers made management practice changes across 5,248 hectares – almost reaching both hectare (78% of 6,686 ha) and enterprise (88% of 116 enterprises) targets. Improved practices included: automated fertigation systems; improved irrigation systems; inter-row remediation; lower volume pesticide sprayers; use of GPS to establish permanent beds with good sediment management; sediment traps; and soil profiling and installing equipment to monitor soil properties.
- Dairy:** 63 dairy farmers made management practices changes across 2,890 hectares – not meeting the hectare target (24% of 12,000 ha), though exceeding the target enterprises (105% of 60 enterprises). Improved practices included: soil testing resulting in more effective use and placement of fertiliser; changes to laneways and tracks.

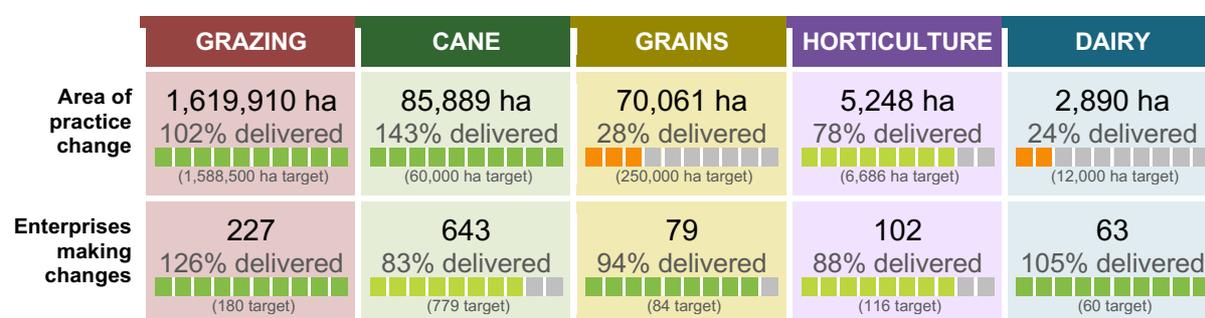


Figure 13:

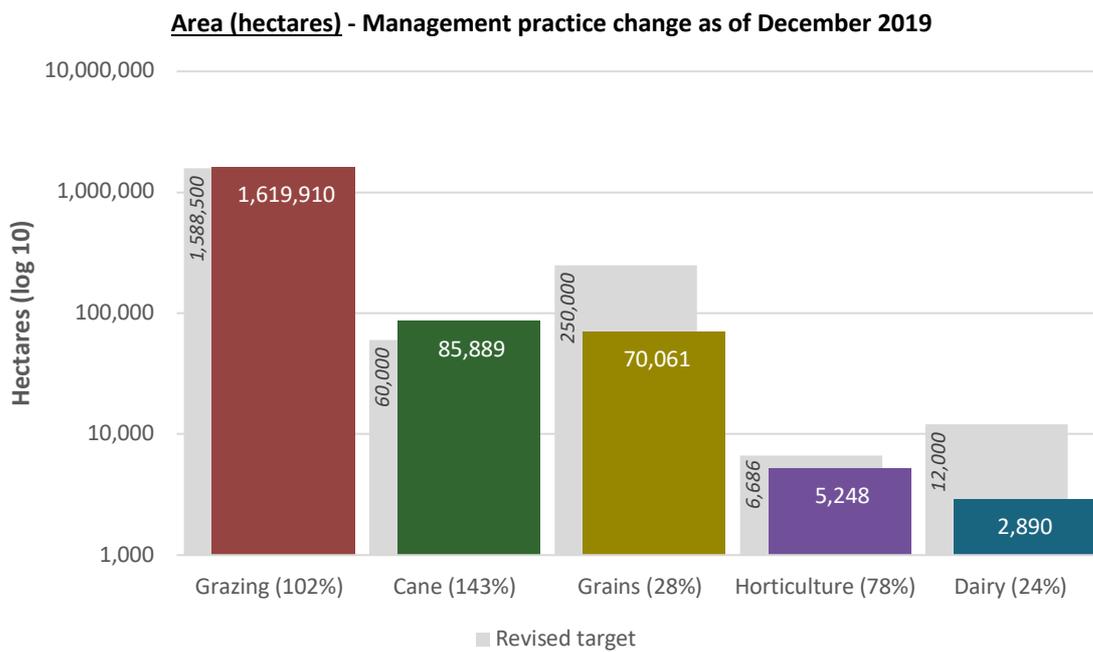
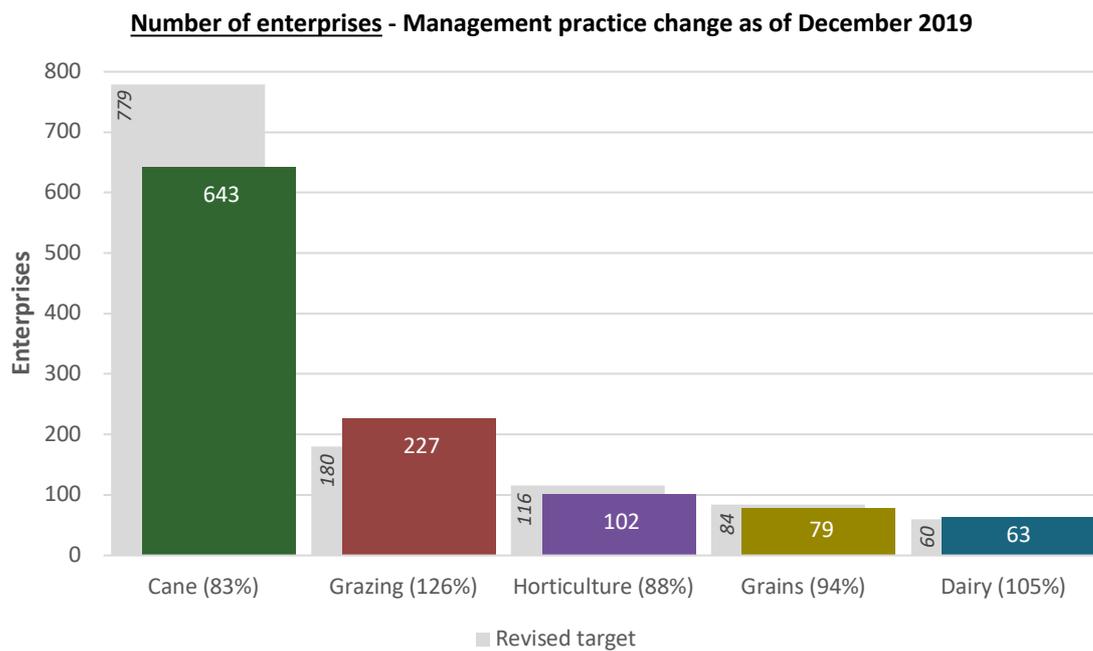


Figure 14:



3.3 Engagement

Growers engaged one-on-one	Total Engagement
<p>1,588 22,412 hours <i>(14hr/grower avg.)</i></p>	<p>1,782</p>

Engagement by the GGBR project as of December 2019 included one-on-one extension with 1,588 farmers and graziers constituting 22,412 hours of effort at an average of 14 hours per individual.

	GRAZING	CANE	GRAINS	HORTICULTURE	DAIRY
Growers engaged one-on-one	<p>339 6,161 hours <i>(18hr/grower avg.)</i></p>	<p>885 13,927 hours <i>(16hr/grower avg.)</i></p>	<p>143 1,198 hours <i>(8hr/grower avg.)</i></p>	<p>164 446 hours <i>(3hr/grower avg.)</i></p>	<p>57 660 hours <i>(12hr/grower avg.)</i></p>
Total people engaged	367	1,034	151	166	64

Figure 15:

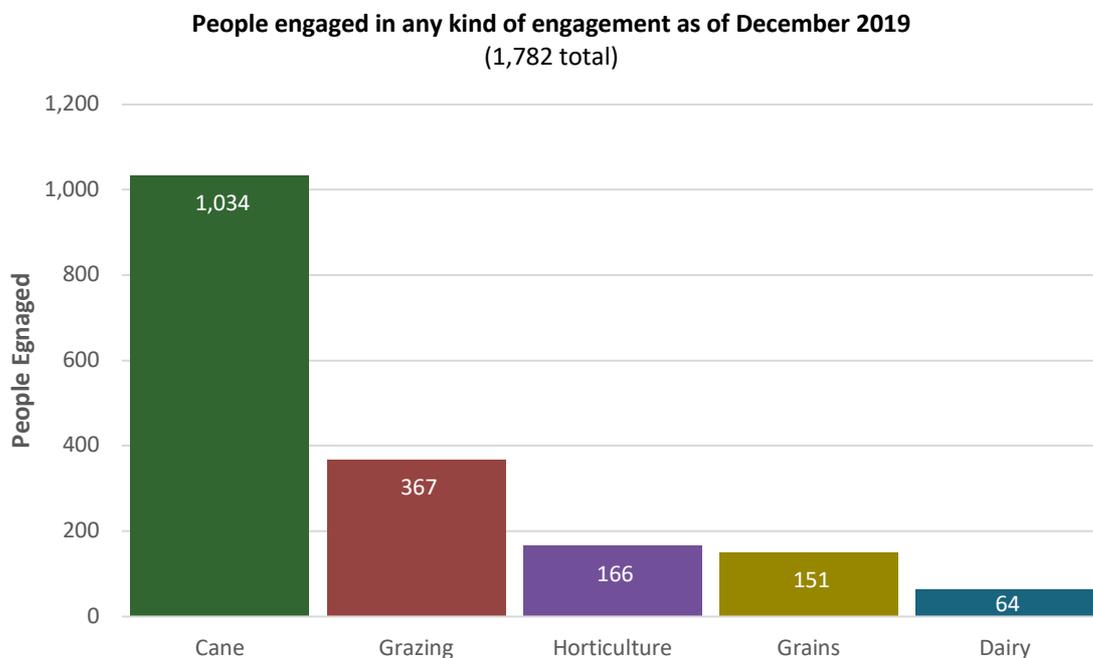


Figure 16:

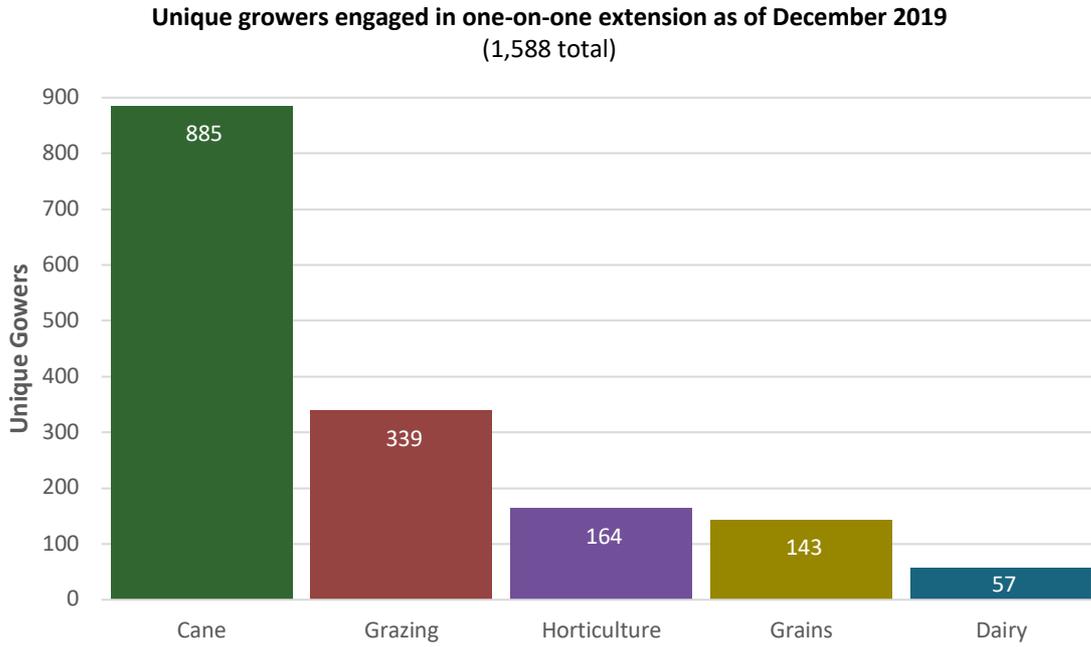
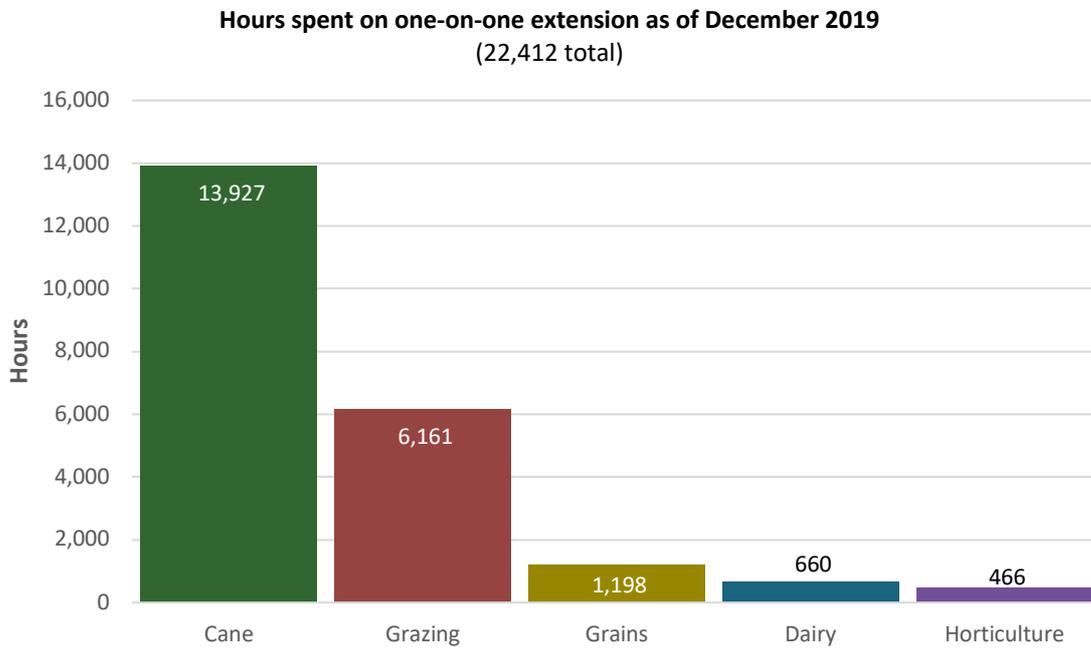


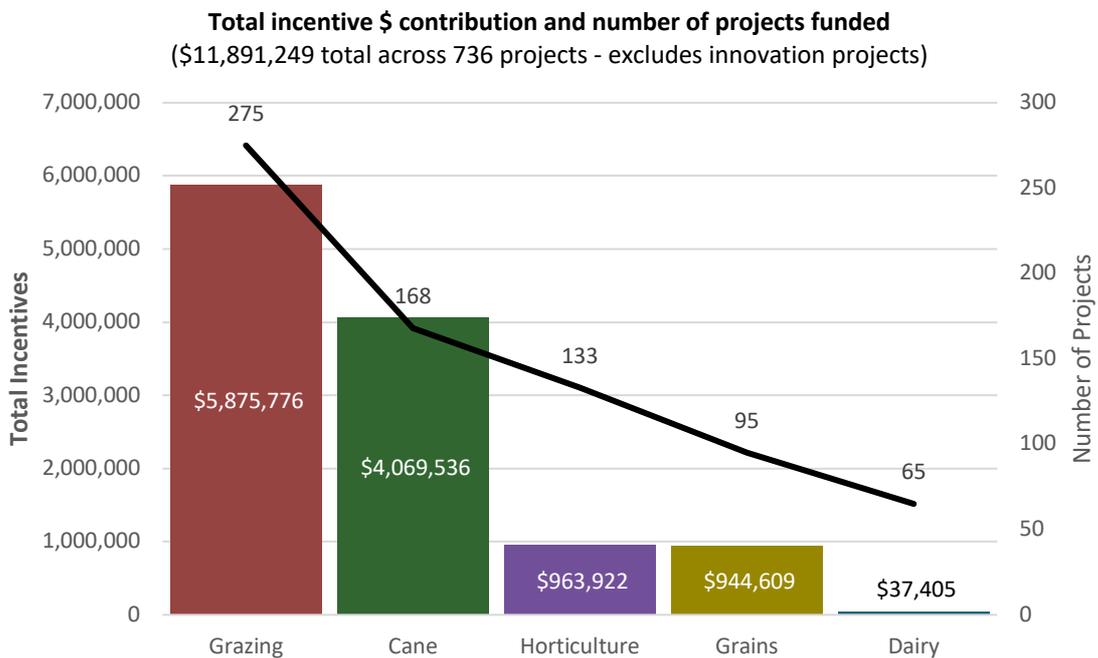
Figure 17:



3.4 Incentives

Total incentives	Total farmer cash and in-kind contribution	Ratio of farmer cash and in-kind contribution to \$1 invested	Total projects that received incentives
\$11,890,249	\$16,721,380	1.41	736

Figure 18:



3.5 Other Impacts

3.5.1 Environmental

The main aim of the project was to impact on water quality going into the Reef – and in particular, DIN Reduction. The industries involved in GGBR also reported a range of other environmental impacts.

- **Cane:** Reduced losses of Nitrogen to the environment; improved water use efficiency; reduced soil compaction; and farm run-off capture.
- **Grazing:** Improved pasture utilisations and ground cover; healthier soils and greater water infiltration; revegetation of degraded lands; improvement of riparian areas and remediation of gullies; and improved wetland, waterway and marine ecosystem health in the GBR area.
- **Horticulture (and bananas):** Sediment reduction; reduction in pesticide and Nitrogen application and run-off.
- **Grains:** Sediment reduction is the main benefit from the project with resulting water quality improvements; improved soil health and infiltration.
- **Dairy:** Reduction and/or more strategic spreading of fertiliser has reduced run-off and leaching; reduced sediment loss.

3.5.2 Economic

Management practice changes also aim to positively impact on profitability as well as environmental outcomes by reducing input costs and maximising efficient productivity.

- **Cane:** Benefits through more effective use of Nitrogen fertiliser; improved water use efficiency (also reduced electricity and water costs); increase to crop yield and productivity; and employment of extension staff and provision of incentives for local investments. The co-investment by producers has also made the project more cost-effective.
- **Grazing:** Landholders developed more sustainable farm business skills and are able to make better and more profitable choices (e.g. less stock would benefit ground cover and be more profitable in the long run); financial assistance for on-ground works has enabled producers to progress projects that may not have otherwise happened due to cash-flow limitations; and materials have also been purchased from the local community helping the regional economy.
- **Horticulture (and bananas):** The management changes are expected to impact on profitability of the enterprises; purchase of materials and contractor services; and the co-investment has added to the impacts.
- **Grains:** Improved sustainable farm business skills are expected to result in increased profitability; improved resource use from on-ground works (improved water use efficiency); and reduced input costs; increased crop uniformity and hence production.
- **Dairy:** Improved fertiliser management has maximised pasture growth and benefit/cost of fertiliser usage.

3.5.3 Social Impacts

Interest and Trust by Producers

The cane industry found that working one-on-one with growers developing Nutrient (and Irrigation) Management Plans proved to be very positive in developing interest from growers and trust in the recommended practices. This interest went beyond what the GGBR project could provide within the time and scope and prompted growers to take up opportunities in other programs and/or to directly seek assistance from providers to update plans.

Grazing also found that one-on-one visits built trust and confidence between producers and advisers and a willingness to continue to participate and make changes over time.

Increased Skills

There was an increase in the ability of growers to effectively use new technologies resulting in better management outcomes and time and labour savings. There has also been an increase in extension staff and managers' skills in terms of practices to benefit water quality and their implementation.

Many producers have now undertaken relevant BMP modules with a number receiving accreditation.

Confidence in Meeting Standards

All participants in the irrigation innovation projects that were run in the Burdekin are in a position to achieve 'above industry standard' accreditation under the Smartcane BMP Irrigation and Drainage Module. Those completing Nutrient Management Plans reported relief that they were in a position to meet impending Reef regulations.

Strengthened Rural Communities and Extension Delivery Capacity

As a result of the GGBR project, extra professional extension and advisory staff were employed and developed skills (with training support, mentoring and shadowing) in working with producers and supporting management practices that benefit farming and water quality outcomes. The project also strengthened NRM bodies, industry and private organisations in their capacity to deliver outcomes to their members and regions. The incentives and improvements made also meant producers sourced equipment from local suppliers which impacted on local economies.

The grazing component reported a strengthening of relationships between extension delivery organisations across regions allowing access to properties beyond what any individual organisation could achieve. Stronger social networks were also found to have been established.

3.6 Legacy

There are some significant legacies likely from the GGBR project. The collaboration continuing as part of the GBRF project is an example of where the partners now have a tested framework in which to operate together – although the focus only on high priority areas in cane and grazing limited participation amongst RA partners. There has been a strengthening of networks between regions and commodities as well as a building of capacity of partner staff and extension delivery partners which will allow for more informed collaboration in future projects.

The multi-organisational use of the GGBR database and its ability to directly input into P2R will be an ongoing part of the legacy. Even if the GGBR project as such does not continue in the same way (funding and relevant joint project being needed to maintain current approach), some individual partners are already using the platform in other areas. The potential is there for the database to provide a platform for all projects addressing on-ground change in Reef areas. The GBRF has shown interest in maintaining/ using the database.

While the GGBR project has had Queensland focused communication activities, there is little evidence that it is acknowledged nationally as a successful collaborative approach. However, there are lessons that have been gained over its life that can be shared more widely, and it is hoped this is supported. These are included in the next section.

4 LESSONS

The GGBR project was a significant new initiative – in terms of scale, collaboration (cross regional and cross sectoral) and the increased emphasis on extension to achieve the outcomes (rather than mainly incentives). It provided many benefits (including the single reporting to the Australian Government and the use of the common database) but also much learning about what such an approach entails and what could make it even more effective. This section documents some of these learnings – several of which have been incorporated into funding provided to Reef Alliance partners by the Great Barrier Reef Foundation.

1. Multiple partners across regions and sectors provides efficiencies but requires a significant input of time to establish an effective and collaborative understanding of project processes.

Collaboration in a multi-partnered project such as this is important, but it creates delays or partners don't respond at all (Australian Banana Growers' Council 2019)

- Bedding down a new governance model while ensuring rapid project start up, was challenging for QFF and all partners.
- The GGBR provided a robust working framework for (the involved) members of the Reef Alliance to work under a common contract to deliver complementary Reef water quality outcomes. This did, however, come with accompanying concerns about loss of 'line of sight' (between individual partners and the Commonwealth Government – in both directions) and collective responsibilities for poor performances.
- The administrative arrangements of the single contract with QFF managing the common reporting and the GGBR Management Committee overseeing the operational management with support from commodity working groups were viewed as effective. This was very time intensive and appropriate resourcing is needed.
- While QFF was seen as fulfilling the role of central project contact and administrator very well, the risk of managing such a large contract without accountability levers with the delivering partners was an issue and a limitation. Reporting demands of partners was not seen to have been reduced by the arrangements as they were required to report to QFF at the same level that they would have reported to the Commonwealth. QFF had significant reporting in pulling the commodity and overall reports together.
- Alternative leadership models should be considered within the Alliance and certainly within any large project that is being undertaken by partners. This could be a clear rotating leadership and a specially appointed joint-funded leader for large projects. Future sub-contracts should include stronger accountability clauses to aid project management and minimise risk to the contract holder.
- Future funding agreements with the partners should contain specific conditions on mandatory financial tracking and reporting that allows the prime contract holder to meet its financial and reporting obligations to the Commonwealth. This information would also be useful in

evaluating the financial performance of the project (including possibly benchmarking to similar projects).

- Partners largely worked independently on their specific targets, and there was a missed opportunity for greater cross-regional support and learning.
- Adaptive Governance approaches should explicitly be built into future collaboration. This includes overt regular opportunities for joint partner reflection, shared learning and exploring opportunities to maximise efficiency and effectiveness.

2. The common database was a major contribution to improved efficiency in reporting and quality control.

- There were some teething issues and complaints of double handling, complexity and time demands, however, the platform facilitated ease of data collation and reporting across commodities and regions. It also helped evolve the conversations needed to work towards a better understanding of terminologies and an interpretation of what constituted practice changes under the P2R guidelines.
- Getting everyone to use the same database was an issue – even though there was recognition of its value – as some partners already had their own systems.

3. It takes time and resources to establish, develop and maintain the extension capacity needed for practice change activities.

“

There needed to be more time in the planning stage of this program before we had to launch into showing a change in practice on the ground. I think that would have helped everyone to realise what could be done in the time available and what outcomes to expect when. It may also have given us the opportunity for some more collaboration around regional delivery planning. (Terrain NRM 2019)

”

- Barriers against targets being met included: the time taken to build extension staff numbers and capacity; staff changes; reduced incentive caps in some commodities; competing projects; a stricter definition of what constituted a practice change in Paddock to Reef compared to previous years; and challenges facing producers (drought, prices, floods, capacity to contribute to project costs and in-kind).

4. While extension increases the learning and skills of producers during the process, practice change is less direct and takes a longer time than incentives.

- The original targets set by Reef Trust had to be modified once the project had commenced and had a more realistic understanding of what could be achieved (given the start-up activities and shift to extension).
- The idea of set engagement and practice change targets (by the Commonwealth) reflects 'SMART' goals and ensures that projects are outcome focused and defines the return on investment. However, this project has demonstrated that estimating what is achievable with an extension focused approach is at best an educated guess. In the past where there has been an incentive (or grant-based) approach, there was more control over the allocation of funds to meet required targets. Initial practice change targets were optimistic with some of the reduced targets remaining a challenge.
- Under GGBR/Reef Trust III, the bulk of the effort was put into one-on-one extension to directly impact on individual property practice change. While valued by many producers, the question is whether this limited the use of group and peer-to-peer approaches which provides the learning support environment central for driving broader cultural change. It is noted that there was flexibility to choose approaches, and some partners involved their stakeholders to determine the mix best suited to their context (e.g. Burnett Mary graziers mostly opted for one-on-one tailored advice, and NQDT included a peer to peer approach).
- Extension has demonstrated that it has an important part to play in the change process, however, it needs to be supported through a strong link to incentives and by utilising the full range of extension approaches available

5. The competing demands on producers from a range of programs reduces their interest and availability to be involved in new programs.

- There are a range of programs directed at practice change by producers. Those producers open to change and seeking assistance are often overwhelmed with opportunity. The challenge is with those who are reluctant to engage or are not in a position to make changes. Programs with a focus on quantitative levels of practice change in a relatively short period risk putting pressure on the former group and lacking penetration into the latter group.

6. While the project saw the value and included support for the development of innovative technologies and extension approaches, there were significant challenges in achieving this.

The innovation trial was incredibly time consuming and took a long time to commence due to a lot of unforeseen circumstances. I would suggest getting these up and running as early as possible in life of the project so there is enough time to trial them properly. (Australian Banana Growers' Council 2019)

- The innovation projects did not go as well as hoped. This was a result of the process used and differences in understanding the definition of innovation in this context.
- Although there were some differences between commodities, the process for developing innovation projects was quite ineffective with time lags, multiple sign-offs required, lack of clarity about definitions, lack of local ownership and a flawed approach to developing proposals.
- The notion of supporting innovation projects should continue to be considered but with a changed emphasis to 'technology adaptation' (i.e. on trialling, adapting and applying technologies or approaches for best use in the local farming or grazing context as an extension aid). This would include building on promising approaches already being looked at that require further development and demonstration. Success indicators and contract arrangements for innovation projects should also be linked to the innovation cycle with less emphasis on immediate practice change outcomes.

7. Demonstrating value of the approach and evaluation of impacts was a challenge.

- The benefits of the GGBR project and its legacy include the impact on producers with whom extension staff have worked, strengthening of networks between regions and commodities and the building of capacity of partner staff and extension delivery partners. An estimate of the impact on water quality compared to desired outcomes will only be possible once the final practice change records are provided.
- A longer-term view is needed to incorporate broader culture change and having lead social indicators (gains in awareness, knowledge, gains in attitude and commitment) as measured precursors to continuous improvement rather than only SMART targets based on practice change per hectare in narrowly defined priority areas.
- Intermediate indicators for demonstrating and measuring progress towards objectives should be included in collaborative multi-partner projects. There should be a requirement for these to be entered promptly into a central database to provide partners with a clearer picture of gains made or concerns to be addressed. These indicators could include completion of farm/irrigation/nutrient management plans; successful applications for grants; gains in understanding; and commitment to act.

5 WHERE TO FROM HERE

5.1 Build on Collective Experience

The Reef Alliance partners involved in the Reef Trust III funded Growing a Great Barrier Reef (GGBR) project have many years of individual and collective experience in managing and delivering proven reef-related programs including:

- *WT Major Integrated Project (MIP)* – Terrain NRM and relevant WTSIP partners
- *Landholders Driving Change (Dry Tropics MIP)* - NQ Dry Tropics
- *Reef Trust 1*
 - *Promotion of A-class grazing management practice* (NQ Dry Tropics, FBA and BMRG and industry partners)
 - *Reef Trust Tender* (Terrain and industry partners)
- *Reef Trust 2*
 - *Gully Erosion Control Program* (NQ Dry Tropics, FBA and BMRG and industry partners)
 - *Reef Trust Tender Burdekin* (NQ Dry Tropics and industry partners)
- *Reef Trust 4*
 - *Repeated auctions to reduced nitrogen losses to the Reef* (Terrain NRM and NQ Dry Tropics and industry partners)
 - *Addressing gully and stream bank erosion – reducing sediment loss in priority Reef regions* (Terrain NRM, NQ Dry Tropics, Reef Catchments, FBA and industry partners)
- *Reef Rescue* – NRM and various Alliance industry partners
- *Australian Government Reef Programme* – GBR NRM regions and various Alliance industry partners

This combined experience provided the capacity for and underpinned the GGBR's project's ability to capitalise on the achievements and delivery infrastructure already established by Reef Alliance partners. It also means that the Reef Alliance has created a unique infrastructure for the delivery of integrated reef water quality outcomes across priority basins in the Great Barrier Reef. Key elements include:

- Regionally-tailored extension capability and capacity;
- Strong project governance and management arrangements;
- Standardised data collection and management;
- Integrated performance and impact reporting;
- Coordinated and aligned delivery across all GBR NRM regions and multiple NRM and industry organisations;
- Linkages to other relevant reef water quality initiatives; and
- Ready access to the spatially-explicit guidance within respective GBR NRM Region Water Quality Improvement Plans.

Investment in future Reef projects needs to leverage this infrastructure and ensure that capacity, capability and momentum is maintained. This would help deliver significant cost savings and a greater return on investment. Similarly, the GGBR infrastructure means that new investments will be able to 'hit the ground running'.

The Reef Alliance intends to undertake a rigorous evaluation of the GGBR project with the aim of laying the foundations for future work under the GBRF Reef Trust Partnership. As part of this adaptive management process, the Alliance will look to learnings from other reef investment programs, such as the Major Integrated Projects and the Queensland Government's RP20 and 161 programs, with the aim of improving and accelerating practice change across the GBR.

5.2 Build on the Partnerships Developed

The GGBR project was a significant step in bringing together government, agricultural industry and NRM organisations to address Reef water quality initiatives across industries, regions and catchments in the Reef regions. It demonstrated what was possible and the gains that could be made. As the previous section demonstrates, it also provided major learnings on how to manage such a broad and complex partnership and how to maximise synergies and outcomes as a result.

The combination of the GGBR and the Queensland Government Graduate and Extension Enhancement projects has resulted in an increase in the number and skill level of extension staff in the Reef Regions. As noted in this report, it has taken time to establish and develop this capacity.

The Reef Trust III funding for the GGBR project was intended to finish in June 2019 but was extended to December 2019 to allow for the lag time in practice change. There has been no direct follow-up Commonwealth funding at this stage to build on the gains made and collaboration developed as a result of the GGBR project.

The Reef Alliance, including the Reef Catchment NRM (who did not participate in the GGBR project), applied for funding through the Great Barrier Reef Foundation (GBRF) to build on the gains made by the partnership. Although the proposal was successful (known as RAP 2), it was a much reduced level of funding and in line with their strategy, funding was limited to 'hot spot catchments' and excluded some industries (e.g. Horticulture, grains and Dairy). The funding did allow some organisations to maintain the extension capacity developed during the GGBR Project but with reduced support. Initially the funding was to finish in February 2020 but continued funding was made available to two of the five partners (NQDT and Terrain) to November 2020.

5.3 Key Considerations Going Forward

This project experience highlights a number of key considerations for funding and delivery of projects directed at water quality improvements from agriculture and grazing in the reef regions:

1. **A long term perspective is necessary to meet the 2050 goals for reducing agriculture's impact on the reef and a high level of social capital and capacity needs to be developed and maintained in the Reef regions to achieve the changes needed.**

It takes time to develop effective partnerships, develop delivery capital and for landholders to understand and be able to make the suite of practice changes needed. *The Reef Alliance partners will continue to seek opportunities to build on the collaboration model which was a feature of the GGBR.* The Reef Alliance will also be in a better position now to support members in individual projects which they are delivering – although the splintering of the collaborative reef-wide model will limit the cross-organisational collaboration and learning.

- 2. While there are some efficiency gains with a focus on one-one extension with landholders in high priority areas, there is need to complement this with an on-going whole of region approach to extension (including group and peer to peer learning) and education.**

This is about cultural and generational change and ensuring a well-educated and informed agricultural and grazing community. While the Paddock to Reef Water Quality Risk Framework provides a structured and quantitative way of directing and tracking change, it does not address the need for continual improvement and effective and ongoing maintenance of changes made. *The Reef Alliance will continue to promote and support this regional-wide approach to long term change in any way that it can.* It is hoped funding agencies will continue to support this important broader need.

- 4. With the investment focus of the Great Barrier Reef Foundation (GBRF) now on hotspots and only the cane and grazing industries, there is a risk of losing the momentum and capacity gains made towards long-term practice change in other Reef catchment areas / industries.**

Balancing this approach with more holistic programs will ensure the ongoing legacy from the significant investments made in the GGBR's project model.

6 APPENDICES

Appendix 1: Monitoring & Evaluation Logframe

GGBR Goals & Outcomes Key Result Areas	Activities	Performance Measures	M&E Methods
<p>KRA 1 – Model Performance</p> <p><i>By June 30, 2019, the Reef Alliance Model is recognised as the Australia's most cost-effective & Strategic model for delivering large scale, integrated programs</i></p> <ul style="list-style-type: none"> GGBR improves Reef-wide collaboration for more effective on-ground delivery GGBR delivery effectively targets investments to maximise WQ outcomes GGBR outcomes and impacts are nationally recognised <p>→ Reef-wide data systems ensures consistent quality and efficient data management</p> <p>→ Reef-wide M&E framework ensures a Reef wide consistent approach to measuring outcomes & impacts</p>	<p>Communication activities</p> <ul style="list-style-type: none"> Communication of project successes, learnings, progress & impacts (to...?) through various mediums Annual presentation to key stakeholders highlighting GGBR outcomes & impacts Annual Reef Summit and Reef Awards (17/18 & 18/19) Cross-regional collaboration to share information, challenges and successes <p>Tools & resources</p> <ul style="list-style-type: none"> Standardised Reef-wide communication templates Case studies and other informative material Reef-wide communication strategy DSS support tools to assist consistent delivery <p>M&E and coordination</p> <ul style="list-style-type: none"> Development of new, consistent Reef-wide data system framework with RA, QG & AG 	<p>Relevant KEQs <i>Improving collaborative on-ground delivery</i></p> <ul style="list-style-type: none"> 2.What progress would have been made in the absence of GGBR? 7.How effective is the GGBR itself compared with what might have been achieved through individual partner programs? 3. What, if any, unanticipated positive or negative changes or other outcomes have resulted from GGBR? [<i>What worked well, what didn't, what has been learned going forward?</i>] 8.How is the GGBR demonstrating that it is improving over time? <p>Effective targeting investments to maximise outcomes</p> <ul style="list-style-type: none"> 4.To what extent have funds been spent as intended? [<i>What has been the overhead costs compared to that spent on on-ground delivery?</i>] 11.How are decisions made about project allocations within and between partner 	<ul style="list-style-type: none"> Secondary Data Analysis from provided Milestone reports and other documents provided by QFF and partners. Communication strategy analysis Interviews with partners and stakeholders – including those outside of the project itself Comparisons to benchmarks in comparable projects Google and media search Quantitative analysis looking at cost efficiencies

GGBR Goals & Outcomes Key Result Areas	Activities	Performance Measures	M&E Methods
<ul style="list-style-type: none"> ➔ Reef Alliance governance framework ensures collaboration, learnings and Reef-wide prioritisation of investment ➔ Reef-wide communication and messaging of catchment and Reef-wide outcomes are increased across all media 	<ul style="list-style-type: none"> • Develop and maintain one central database with coordinated reporting • Development of Reef-wide M&E standards • TOR for all GGBR Working Groups • Reef-wide learning & adaption of delivery methods • Quarterly GGBR management committee meetings to oversee progress and work through issues consensually • Biannual Commodity Working Group meetings to discuss technical delivery and address commodity-specific issues, as well as strive for consistency across all partner delivery within a commodity • Database technical working group for discussing data and database specific issues 	<p>agencies? [To what extent do they reflect established need and priorities?]</p> <ul style="list-style-type: none"> • 12.Are the governance arrangements robust and appropriate given the size of the project? [How effective have they been] <p>Outcomes and impacts nationally recognised</p> <ul style="list-style-type: none"> • 9.How can the coordinated GGBR demonstrate it is more efficient than funding being provided to individual agencies? • 14.What are likely to be the enduring benefits resulting from the GGBR overall? • [To what extent is the project known nationally and how is it viewed?] 	
<p>KRA 2 – Achievement of Targets</p> <p><i>By June 2019, 1,219 farmers and graziers covering 1,917,186 ha in 33 GBR catchments have improved farm management practices to contribute to a 4.4% (169Kt) reduction in sediment load, 6.9% (345t) reduction of dissolved inorganic nitrogen and a continued reduction in pesticide load generated from broadscale agriculture in priority Reef catchments</i></p> <ul style="list-style-type: none"> • On-going pesticide load reduction 	<p>Landholder engagement and extension delivery</p> <ul style="list-style-type: none"> • Engagement of farmers & graziers • Provision of extension services to eligible and interested farmers & graziers – including development of farm management plans • Coordination of training for participating farmers & graziers • Provision of grants implementing high priority actions in high priority areas • Access to property-specific specialised technical advice 	<p>KEQs:</p> <p>Impact targets</p> <ul style="list-style-type: none"> • 1.To what extent were the stated project outcomes (numbers, areas, reductions) met? • 5.To what extent have outputs (extension officers, practice change, areas etc) and milestones in delivery plans been met? • [To what extent was the innovation support program utilised (\$ spent in support compared to budget), extent of engagement, type of innovations trialed 	<ul style="list-style-type: none"> • Secondary Data Analysis from provided Milestone reports and other documents provided by QFF and partners. • Interviews with partners and stakeholders – including those outside of the project itself • Interviews with delivery partners – including on-the ground deliverers and producers involved

GGBR Goals & Outcomes Key Result Areas	Activities	Performance Measures	M&E Methods
<ul style="list-style-type: none"> Innovative land management practices have been developed, trialled and implemented by early adopters Innovative engagement methods have increased the reach of land manager engagement in practice change <p>Targeted WQ practices implemented by farmers and graziers:</p> <ul style="list-style-type: none"> 38 banana growers over 1,616ha 78 other horticulture growers over 5,070ha 84 grain growers over 250,000 ha 60 dairy farmers over 12,000 ha 180 graziers over 1,588,500 ha <p>Innovation land management practices have been included in industry BMP programs</p>	<p>Supporting of innovation</p> <ul style="list-style-type: none"> Reef wide technical groups to select projects Provision of support for eligible farmers & graziers to trial & validate innovative practices Support for early adopters of validated practices Innovative engagement methods investigated re feasibility to extend reach and trialled – and implemented where successful Work with industry to integrate new validated practices into Industry BMP. <p>Underpinning planning and organisation</p> <ul style="list-style-type: none"> Identification of regional priorities and actions for investment Collaboration with regional BMP officers, regional partner organisations and delivery agents Collection of project and extension data Active partner in Reef wide extension network 	<p>and broader take up and integrated into BMP programs?]</p> <ul style="list-style-type: none"> [To what extent were innovative engagement methods identified, trialled and spread?] <p>Effectiveness of approach</p> <ul style="list-style-type: none"> 6.How effective were the extension programs [and approaches used] in changing farmers knowledge & skills? [What worked well, what didn't, lessons learned for carrying forward?] 10.How closely aligned with economic theory (policy tool choice alignment with public and private benefits) was adoption of particular practices? <p>Legacy</p> <ul style="list-style-type: none"> 13.How likely is practice adoption likely to continue once the GGBR funding ceases? 14.What are likely to be the enduring benefits resulting from the GGBR overall? 	<ul style="list-style-type: none"> Comparison to benchmarks in other adoption programs Quantitative analysis of practice changes per type, industry and region Use of Adopt re Key practices Theory of change compared to literature / other practice approaches

Appendix 2: KEQ Summary Response and Rating Table



Level of KEQ achievement or positive GGBR contribution or influence

Note: The ratings assigned to each KEQ are based on the reviewer's assessments of what emerged from the process during the extension evaluation of the project based on progress to December 2018.

KEQ		Rating	Comments
Impact			
1	KEQ1: To what extent were the stated project outcomes (numbers of farmers, areas, sediment and DIN load reduction and pesticide targets) met?	4	Good engagement; targets were adjusted down from start; some revised targets will require extra time. Impact on load will need to be calculated where possible at the end of the project.
2	KEQ2: What progress would have been made in the absence of the GGBR?	3	Progress in the regions would have been similar if delivering outside of GGBR. Without Reef Trust III there would have been a huge loss of momentum (e.g. unlikely that the banana industry would have participated in Reef Trust III without GGBR).
3	KEQ3: What, if any, unanticipated positive or negative changes or other outcomes have resulted from the GGBR?	3	Positives included the success of the common GGBR database, the basis for on-going collaboration, and the impact on capacity in producers and extension deliverers. There were no identified negative outcomes.
Effectiveness			
4	KEQ 4: To what extent have funds been spent as intended?	3	Budgeted funds were allocated as planned; some were reallocated following underspending in some areas; no clear information on actual spend split.
5	KEQ 5: To what extent have outputs (e.g. extension officers, practice change, areas etc.) and milestones in delivery plans been achieved	3	As for KEQ 1 – engagement targets were reasonably well met – converting to practice change was not always as easy. Innovation projects underachieved.
6	KEQ 6: How effective were extension programs in changing farmers' knowledge/skills?	4	Knowledge and skills were not recorded as such. The one-on-one extension was reasonably successful in developing plans for actions – with many converting to practice change (which assumes gains in knowledge and skills). More supporting group processes would have strengthened the process to broaden long-term cultural change.
7	KEQ 7: How effective is the GGBR itself compared with what might have been achieved through individual partner programs?	3	While GGBR added value to the process, it did not impact significantly on actions and approaches used by individual partners (some specific examples of where this did happen). It did however improve data consistency and understanding of what was happening on the ground.
Efficiency			
8	KEQ 8: How is the GGBR demonstrating that it is improving over time?	3	Partner surveys were undertaken, efforts were made to modify the GGBR database and provide training and

			support and targets were modified. Group learning and application was otherwise limited.
9	KEQ 9: How can the co-ordinated GGBR demonstrate it is more efficient than funding being provided to individual agencies?	3	The single contract provided proposal time and some reporting efficiencies – although partners still had to provide the information. The common GGBR database added efficiency and value. Partners worked together to ensure as little duplication as possible occurred. The ability to move funds assisted with efficiency. GGBR enabled ABGC to have Terrain undertake the contract management for them.
Appropriateness			
10	KEQ 10: How closely aligned with economic theory (i.e. policy tool choice alignment with public and private benefits) was adoption of particular practices?	4	The use of extension combined with incentives was a good choice and aligned well with adoption and economic theory. Incentive caps were too low in some cases and the lack of direct links to extension in some cases limited extension effectiveness.
Program management			
11	KEQ 11: How are decisions made about project allocations within and between partner agencies?	4	Allocations were largely determined by the Commonwealth and apportioned based on commodity presence. Modifications were made within the GGBR Steering Committee.
12	KEQ 12: Are the governance arrangements robust and appropriate given the size of the program?	4	The governance arrangements worked well – with QFF administering and providing overall reporting and the GGBR Management Committee (GGBR MC) making operational decisions.
Legacy			
13	KEQ 13: How likely is practice adoption likely to continue once the GGBR funding ceases?	3	Producers who developed farm or property plans have the basis on which to continue improving; Improved extension capacity and improved networks should assist future projects to be more effective. Access to future funding will have a bearing on the extent of the collaborative legacy.
14	KEQ 14: What are likely to be the enduring benefits resulting from the GGBR program overall?	3	The GGBR database is already being used for other projects and provides the basis for a common Reef platform. This will require a rationale and funds to continue in its current form. As for KEQ13 – improved networks, a framework for cooperation and increased capacity will be a result.