Wet Tropics Major Integrated Project

Putting Local Knowledge into Reef Action

Final Performance Report

12 October 2021

Purpose:

This report is to advise on final performance of the Wet Tropics Major Integrated Project (WTMIP) towards key outcomes outlined in the WTMIP's Monitoring & Evaluation (M&E) Strategy. This final report is cumulative in nature, reflecting performance for the whole project. It therefore contains elements from previous performance reports that have not changed and are still relevant against the evaluation questions. The report includes end-of-project learnings, as well as aspects relating to transferability.

Information contained in this performance report will be used to:

- Report to senior managers in the Department of Environment and Science and government stakeholders about how the WTMIP has progressed towards achieving their outcomes.
- Support business cases and transferability to other projects.

Alignment with WTMIP deed requirements:

The WTMIP deeds require a final performance report to be submitted, which is to include the:

- outcomes for each activity area for the whole project, including results of collaborative activities
- key achievements for each activity area
- compliance with objectives
- any other information reasonably requested by the department.

PROJECT TITLE:	Implementation of Wet Tropics Major Integrated Project in the Tully and Johnstone catchments of the Wet Tropics region

REPORTING START DATE:		1/10/2020	
REPORTING END DATE:		30/9/2021	

PROPONENT [Recipient]:	FNQ NRM LTD (trading as Terrain NRM)
PROJECT MANAGER [Terrain NRM]:	Fiona George (Acting)
PROJECT MANAGER [OGBR]:	Mel Shepherd

Table of Contents

List of technical reports and other documentation

The following documents have been developed during the WTMIP and may be referred to in this report, and provide more information and detail on its activities:

- Adame M F and E Kavehei (2021). Ongoing efficiency of nitrogen processing in treatment wetlands in the Wet Tropics. ARI Report No.2021/004 Australian Rivers Institute, Griffith University, Brisbane
- Alluvium (2021). WTMIP Catchment Repair: Detailed data analysis (HES Basin).
- Askildsen, M., Baheerathan, R., Waters, D., Pollett, A., Dougall, C. (2020). Catchment Modelling for Wet Tropics Major Integrated Project. Department of Natural Resources, Mines and Energy, Brisbane.
- AWC (2021). Wet Tropics Major Integrated Project Data analysis (vegetated drain study – Year 2).
- Enderlin, N (2019). MIPs soil characterisation report. Department of Natural Resources, Mines and Energy. Mareeba.
- Kavehei , E. and M.F. Adame. 2021. Vegetated drains for water quality improvement in the Wet Tropics. ARI Report No. 2021/007 Australian Rivers Institute, Griffith University, Brisbane
- Kavehei, E., Hasan, S., Wegscheidl, C., Griffiths, M., Smart, J.C.R., Bueno, C., Owen, L., Akrami, K., Shepherd, M., Lowe, S., Adame, M.F. (pending) Cost-effectiveness of treatment wetlands for nitrogen removal in tropical and subtropical Australia. Water Journal.Lait, R (2021). Groundwater flow update, Syndicate and Leichhardt Road sites. Rob Lait and Associates.
- Manca, F and P Grace (2021): Data analysis of performance of the woodchip bioreactors installed in the Wet Tropics Region of North Queensland. Queensland University of Technology.
- Manca, F., Wegscheidl, C., Robinson, R., Argent, S., Algar, C., De Rosa, D., Griffiths, M., George, F., Rowlings, D., Schipper, L., Grace, P. (pending) Nitrate removal performance of denitrifying woodchip bioreactors in tropical climates. Water Journal.
- Shaw, M (2020). Modelling trials of improved management of sugarcane in the Wet Tropics. Department of Natural Resources, Mines and Energy, Brisbane.
- Smart J.C.R. (2021). Cost-effectiveness analysis of nitrate removal by constructed treatment wetlands and bioreactors: Wet Tropics Major Integrated Project. Australian Rivers Institute, Griffith University, Brisbane.
- WTMIP (June 2021). Catchment Repair Treatment Systems Trials.
- WTMIP (June 2021). Catchment Repair Treatment System Legacy and Maintenance.
- WTMIP (Sept 2021, in draft). Wet Tropics Major Integrated Project – Local Scale Monitoring – Final Technical Report: For the reporting period October 2018 to March 2021. Terrain NRM.
- WTMIP (2018-2021) Case studies prepared by the WTMIP team including:
    - Johnstone – Bioreactors
    - Johnstone – HES basin
    - Johnstone – Demonstration sites
    - Johnstone – Reef Smart Farming Network
    - Tully – Demonstration site (T1)
    - Tully – Clusters: East Feluga
    - Tully – Tully Valley bananas
    - Tully – Technical report and case study: T2 demonstration site
    - Reef Credits

Executive Summary

1.1. Overview and context of Great Barrier Reef Water Science Taskforce Report

The problems relating to Great Barrier Reef water quality are biophysically and socially complex and long-term, and it is recognised that they won't be solved overnight, or without on-going innovation. More than a decade of investment in Reef water quality in support of industry best practice has delivered demonstrable results, but it is clear that 'more of the same' will not deliver sufficient progress towards the targets. In recognition of the need to explore new solutions and new ways of engaging with industry and communities, the Great Barrier Reef Water Science Taskforce (the Taskforce) concluded in its Final Report released in May 2016 that:

"Major integrated projects are needed in a small number of hot spots that integrate and evaluate the combined effectiveness of a range of tools and innovative approaches. Once up-scaled they will deliver accelerated progress to the targets and inform ongoing investment across the Reef catchments."

The Taskforce's Recommendation 8 proposed the following:

"Implement two, well facilitated major integrated projects (MIPs) in pollutant 'hot spot' areas to evaluate the most effective combination of tools to inform the design of future programs."

The Wet Tropics and Burdekin MIPs were designed to specifically address this Taskforce recommendation, with a focus on ensuring local stakeholders and landholders were actively involved in the design of the project and the interventions being tested. The expectation was that the MIPs would trial new approaches and interventions, and that the learnings would then be transferred more broadly.

The Taskforce also recommended that the government "*consider ongoing support to maintain and extend the successful outcomes of the MIPs approaches and tools*". This report advises on the final performance of the Wet Tropics Major Integrated Project (WTMIP) towards the outcomes specified in the WTMIP's Monitoring and Evaluation (M&E) Strategy. Importantly, the report includes end-of-project learnings, as well as considerations relating to transferability of successful interventions and approaches, and recommendations for their future application.

This report is informed by a range of sources including:

- The ***external evaluation*** undertaken by First Person Consulting (FPC) [1]
- Other external data sources such as the CSIRO interviews
- End-of-project landholder surveys (see below)
- Data from the 'business-as-usual' monitoring systems, such as trackers
- Internal reflections by WTMIP team members, the Project Panel and MIPs' Steering Committee.

End-of-project landholder surveys

End-of-project landholder surveys were conducted in both the Johnstone and Tully basins to determine the impact the WTMIP has had on landholder attitudes and aspirations - 65 in the Johnstone Basin and 38 in the Tully Basin - a total of 103. True to the place-based model, there was a slight difference between the surveys of the Johnstone and Tully. Where questions aligned, the results are presented together; otherwise, the results from just one basin may be presented.

[1] Where the ***external evaluation*** conducted by First Person Consulting has been referenced in this report, bold and italics have been used to highlight and draw attention to their findings. The full evaluation report is available as a supplementary document to this Performance Report.

1.2. Performance against outcomes of WTMIP

Overarching finding of the *external evaluation*

"Within the complexities of the spatial and temporal scale of the MIP, and the diverse expectations of project stakeholders, the MIP has successfully contributed to its intended outcomes, and has multiple sources of evidence to demonstrate its achievements. Underpinned by the five core MIP principles, the project has demonstrated the value of place-based, grassroots approaches to encouraging water quality stewardship outcomes among local growers. **But the achievement of long-term outcomes intended though the WTMIP will depend on future investments building on the momentum and foundational achievements of the project.**

The approach of the WTMIP **has been valued,** based on a range of evidence from diverse stakeholder perspectives reflecting on the core principles enacted throughout the project. **The MIP approach and its underpinning principles represent a model that can inform future place-based approaches to Reef water quality projects." (First Person Consulting, 2021)**

Improved land management and water quality outcomes

Over the life of the WTMIP **30, 26** and **36** WTMIP landholder participants have recorded Paddock to Reef (P2R) practice change within the 2018-19, 2019-20 and 2020-21 reporting years, respectively. Some landholders may be represented in more than one year. A total of **23,966** hectares of improved land management made by WTMIP landholder participants has been registered in the P2R system in the past three reporting years. In addition, the 16 catchment repair sites contributed **540** hectares of improved land management.

Modelled water quality outcomes are reported in the table below. Due to recent changes in the P2R Projector App, figures reported prior to 2021were re-calculated for the purpose of this report under Version 3 of the app. Catchment repair extraction figures are presented as an *annual* modelled reduction once the system is fully functioning.

Note: 30 of the 42 WTMIP Tully landholders surveyed provided specific examples of changes they had already made. Only four of these registered as changes in P2R.

Modelled DIN outcomes to which WTMIP has demonstrably contributed	
Data source	Total kg DIN modelled
P2R practice change (2018-21) coded to WTMIP from current dissolved inorganic nitrogen (DIN) Projector App* (42,399.5kg) Reef Credits purchased (18,000 from WTMIP, additional from other pilot projects Source: GreenCollar) (24,295kg) Catchment repair estimated DIN reduction for five modelled sites (once fully functioning) (6,800kg/year) **for at least one year**	73,494.5

**This figure differs from that previously reported due to changes in the Projector App, which now calculates two to three times lower than the earlier App (see Table 2). This needs to be considered in the context of WTMIP outcomes, and when making comparisons with other water quality projects.*

79% of the 103 landholders surveyed across both basins scored their level of benefit from participating in the WTMIP as 8/10 or greater. The landholder survey confirmed that the local-scale water quality monitoring and the shed meetings to present this data have been a "game changer" in attitudes and motivation. However, other aspects of the project (e.g., demonstration sites) are equally important for delivering improved land management, and a key learning is that the integrated, flexible, and tailored nature of the WTMIP is a key success factor.

Increasing Water Quality Stewardship

The ***external evaluation*** identified strengthened stakeholder engagement as the most significant outcome of the WTMIP. Furthermore, it concludes that the strength of engagement with growers in the WTMIP is linked to their reported increases in water quality knowledge and practice changes (both intended and actual).

Multiple lines of evidence support this finding:

- **325** unique landholder participants representing **39,503** hectares of cane and banana land.
- Of these **133** (representing 28,656 hectares) participated in three or four out of the four WTMIP years.
- **1,403** participation records have been registered.
- Growers in the Johnstone Basin were asked "Have your thoughts or beliefs about water quality changed since the start of the MIP?". **84%** of growers (47/56) responded "**Yes**".[2]
- As reported above, **30** of the 41 WTMIP landholders surveyed in the Tully provided specific examples of the changes they had already made because of participating in the WTMIP.
- In the Johnstone, **64%** (35/55) of landholders surveyed scored their motivation for change because of the WTMIP at 6/10 or higher, and **27**% (15/55) provided scores of 9 or 10.
- The ***external evaluation*** reported that increased ownership of water quality issues among growers was identified by **half (50%, 19/38)** of the interviewees as an outcome of the WTMIP.

Given the external context including low commodity prices, industry concerns around Reef regulations, the historically high level of industry/landholder distrust in Reef water quality science and COVID-19, sustaining this level of interest and voluntary participation in a project that was focusing explicitly on water quality validates the WTMIP approach and underpinning principles, but also the quality and dedication of the WTMIP team.

To sustain and build on this engagement and commitment, WTMIP stewardship legacy initiatives include:

- The Local-Scale Monitoring (LSM) program responded to the question "Is it my nitrogen (N)?" building understanding and motivation to take water quality into account in decision-making.
- Demonstration farms showing the water quality and productivity results of known improved practices, providing evidence for decision-making beyond the life of the WTMIP.
- The leadership program supported growers to share a wide range of knowledge with confidence and provide ongoing support to others.
- Peer-to-peer networks (e.g., shed meeting and soil health groups) may continue to support grower stewardship and improved land management beyond the WTMIP.
- A collaborative and coordinated extension network with water quality knowledge and the capacity to make the connection with farm practices will have a legacy beyond the WTMIP.
- The training and employment of local Mamu and Gulngay Kinjufile Traditional Owners in water quality monitoring activities, not only building capacity, but supporting their connection to Country.
- Employing and building the knowledge and capacity of local contractors ensures the expertise to continue WTMIP initiatives (e.g., cost-effective catchment repair treatment systems) remains in the community beyond the WTMIP.

Facilitating Change – addressing barriers to accelerate change

Reef Credits: In the short life of the WTMIP, the idea and vision of a market-based system which could support ongoing water quality outcomes has been realised, with the establishment of the Reef Credits Scheme. This has addressed the major barrier of reliance on conventional, project-based, short-term and often rigid government funding to deliver change. To date, almost 25,000 Credits have been generated, purchased and retired. This paves the way for increased corporate investment in Reef water quality, enabling accelerated progress towards the targets, as recommended by the Taskforce.

Local-scale water quality monitoring: The distrust of water quality science and lack of understanding of the connection between water quality and farming practices is a major barrier to change. Even though water quality

[2] Not all landholders answered every question in the survey. The figures for each statistic relate to that specific question.

had become 'dirty words', growers have shown that they want to know about ***their*** water quality, and this knowledge is a key motivator. The LSM program has been a key enabler in the WTMIP basins.

Local extension collaboration and alignment: Benefits from WTMIP's investment in collaborating with other extension providers have been sustained throughout the project. While the need for attribution of effort remains an issue, more integrated planning for future investment has been undertaken because of this collaboration. Canegrowers organisations in both Tully and Johnstone took a place-based, integrated approach to developing their Great Barrier Reef Foundation (GBRF) project, despite the competitive process employed by GBRF. This collaboration provides a locally driven, lasting solution to the problem of competition, attribution and fragmentation of investment.

Technical influence: The WTMIP has tested a range of treatment systems, identifying innovative cost-effective options that, with further research, can be implemented widely, such as in-drain wetlands.

KASA (Knowledge, Skills, with Attitudes and Aspirations addressed under Stewardship)

A survey of WTMIP shed meeting participants in both the Johnstone and Tully was carried out (N=103):

- **93%** of growers surveyed reported an increase in water quality knowledge because of the LSM program and the shed meetings.
- There has been an improvement in understanding on average from **3.5/10** to **7.4/10**.

Direct feedback from growers and observational evidence indicates that participants are satisfied with the range of knowledge and skills being provided through the WTMIP. The ***external evaluation*** highlighted the positive capacity improvements for local Traditional Owners of the WTMIP. 13 Traditional Owners have been trained in water quality monitoring, and this has helped the Mamu and Gulngay Kinjufile Aboriginal Corporations to recently secure GBRF-funded projects for water quality monitoring and improvement.

Performance against the five WTMIP principles

Through the ***external evaluation,*** stakeholders rated the extent to which the MIP principles have been ***evident*** throughout the project at 7/10 or above. *Grassroots, place-based design and delivery* and *integrated, locally tailored solutions* were the two principles that were considered most evident (scoring 8.5 and 8.3 respectively). Overall, interviewees reported an average 7.4/10 for the ***effectiveness*** of the overall MIP approach as a way of tackling Reef water quality challenges.

The WTMIP leveraged **$8,140,218** towards project delivery, with a considerable proportion of this representing the in-kind contributions from GreenCollar in the design, establishment and implementation of the Reef Credits Scheme including the development of the current methodologies and support for establishment of Eco-Markets Australia. This is an example of a notable high-leverage partnerships established through the WTMIP.

The WTMIP has focused on partnerships with the science, industry, extension providers, corporate and community sectors, with **167** non-landholder unique participants involved, through **513** participation events. This included **82** extension officers and agronomic advisors, a key target audience for MIP partnerships.

Transfer of MIP learnings

Clear examples of where the place-based approach has been adopted in the Wet Tropics, based on the experience and learnings of the WTMIP include:

- ***Reef Trust VII in the Mossman and Murray catchments ($5.6 m):*** A place-based approach was taken to the development of RTVII projects for the Mossman and Murray catchments, with industry in both basins taking the lead in determining what will work in their area based on their own unique context, community, and landscape.
- ***GBRF for the Johnstone and Tully (value TBA):*** The principles of place-based approaches were adopted in the development of tenders for the GBRF investment in the Tully and Johnstone. In both basins, the Canegrowers organisation took the lead in developing collaborative, place-based tenders for the first time.
- ***Technical learnings:*** There are many examples of shared and applied learnings from the Catchment Repair component (e.g., through the Bioreactor and Wetlands networks), LSM program (with Water Quality Technical Advisory Group (WQTAG) members applying and sharing WTMIP products such as the Standard

Operating Procedures), the approach of the Farm Services team in presenting data to growers and the technical learnings from the demonstration sites.
- ***Stakeholders transferring learnings:*** Several interviewees pointed out examples of where they have applied lessons from the WTMIP in their work with other organisations, regions and interstate.

Return on Investment

At present, comparisons between Reef water quality projects' return on investment rely largely on the P2R system, which has current known limitations (see Section **Error! Reference source not found.**). While there has been P2R-registered practice change in the Johnstone and Tully basins to which the WTMIP has demonstrably contributed, this is only a small part of the WTMIP return on investment story. As an experimental approach, the WTMIP represents excellent return on investment, delivering not only direct outcomes and transferable learnings, but also a solid foundation for future investment and on-going returns, including:

- ***Broadscale understanding of the water quality issues*** built with landholders and industry in the Johnstone and Tully basins (not achieved by the Reef water quality science community in the Wet Tropics since the beginning of Reef water quality projects).
- ***A groundswell of landholder engagement and motivation*** built to address water quality issues, find solutions and make the changes, especially notable in the context of Reef regulations and entrenched mistrust in the water quality science.
- ***Practical and locally tailored solutions demonstrated*** that will deliver water quality outcomes without compromising crop productivity, and that can now be extended widely, and with confidence, within these basins.
- ***16 catchment repair treatment system trials established and monitored***, with in-drain wetlands identified as offering potential for widescale, low-cost uptake and the potential to deliver on-going water quality outcomes.
- ***Reef Credits Scheme created and in operation,*** now able to attract significant corporate investment in Reef water quality.
- ***Local capacity built*** in landholders, Traditional Owners, local contractors, local technicians and extension officers and, importantly, local industry organisations, to continue to communicate and support water quality interventions.
- ***Transferable learnings generated,*** both technical and in the design and delivery of grassroots, place-based water quality projects.

The extent to which this foundation delivers on-going water quality outcomes and return on investment may not be known for another five years. **The question of return on investment is therefore not "What did you get for $15M?", but "What did you already get, *plus* what are you going to get in the next five years?".**

Another key question is how the on-going impact of the Office of the Great Barrier Reef's (OGBR) investment through the WTMIP can be reconciled with, and reported alongside, the water quality outcomes that will be claimed by GBRF projects in the Johnstone and Tully. These projects will undoubtedly build on, and benefit heavily from, the WTMIP's foundational work.

1.3. Learnings from the WTMIP

Valuable lessons have emerged from the WTMIP, for individuals, industries, communities and organisations. They include lessons from technical, scientific, project design and delivery and policy perspectives. Within the catchment repair and local scale monitoring programs, there has been a wide range of technical learnings which are discussed in the body of this report (in particular, Section **Error! Reference source not found.**) and documented in detail in a range of technical documents (listed above). This section will focus on the broader learnings from the WTMIP.

The value of the place-based, grassroots approach

The lesson identified most consistently through the ***external evaluation*** is the inherent value and importance of effective engagement and grassroots approaches to Reef water quality issues, particularly considering the challenging context within which the WTMIP was delivered.

Specific learnings include:

A better way of communicating water quality science: The WTMIP has excelled in its approach to communicating water quality science to growers and making it relatable, and the approaches used have already been adopted by other projects and scientists. Most importantly, it has become evident that when science is not only credible, but also well-communicated and relevant, growers understand and embrace it, and it motivates them to act.

Local knowledge is invaluable: Co-generation of knowledge – bringing together traditional scientific approaches with local expertise and experience – results in more sophisticated, locally appropriate solutions and innovation and can avoid mistakes in location, design and relevance. Landholders report a benefit, not only from learning about the water quality in their backyard, but also from being involved in identifying and designing solutions. Locals designing solutions to an agreed problem is more effective than people being told what to do.

Voluntary changes will then happen: The ***external evaluation*** concluded that the WTMIP has demonstrated the link between grower engagement and the achievement of stewardship outcomes and voluntary change. The extent of actual and intended practice changes reported by landholders indicates a shift in attitudes and motivation, demonstrating that landholders are acting on their new knowledge about water quality issues.

The approach takes time: There has been an overwhelmingly consistent reflection on the time it takes to deliver a project through a grassroots, place-based approach. This is compounded by the time it takes for changes in attitude to result in changes in decision-making, and then finally in measurable change in farming practice (sometimes not possible until the end of the current crop cycle). This reflection cuts across all of the WTMIP principles. Collective governance takes time. Integration takes time. Co-generation of learning takes time.

Building a local 'vision': The MIPs Steering Committee reflected on the value of building a local vision through place-based approaches and needing investment by government and others to sustain the vision.

The value of integration, flexibility and adaptative management

All evaluation sources for the WTMIP highlight the value of embedding the principles of integration and adaptation into projects.

Value of integrated solutions: Testing a range of solutions, including catchment repair treatment systems, was strongly welcomed by industry and growers, and led to some unexpected outcomes such as the potential of in-drain wetlands and bioreactors becoming a motivator for practice change itself. Having a range of solutions that are integrated into one package has enabled tailoring to suit the needs of basins, industries, or individual farming enterprises.

Value of integration across industries: Bringing banana and papaw farmers into cane shed meetings and breaking down the information silos between industries was a game changer in addressing the 'blame the other industry' game and in building a culture of 'our water' and 'our solutions.'

Value of integration across projects: The value of collaborating and sharing between extension and project staff within a geographical location was clearly demonstrated through the Reef Smart Farming Network. The desire of extension staff to share information and ideas helped break down the competitive approach to project delivery. It led to all organisations in the Johnstone involved in water quality and extension coming together to prepare an integrated, collaborative GBRF bid under Canegrowers' leadership.

Design and delivery are inseparable: Adaptive management and the flexibility for continuous review and refinement continues throughout the project. The ability to reassess priorities with the landholders themselves was particularly powerful (e.g., "Now that you have seen this data, what do you think we need to do next?").

Tension around differing expectations

All sources of evaluation data identified that differing expectations around certain aspects of the WTMIP have resulted in tensions and, at times, challenges with communicating achievements.

Time versus money: There was an understandable expectation that more funding would result in more change, more quickly, even though 'acceleration towards the targets' was only anticipated once the learnings from the MIPs were able to be scaled up. There was ongoing tension between the time needed for the place-based approach to tackle the barriers in perception of water quality and motivation to change, and the expectation that

demonstrable practice changes and water quality outcomes would flow in a linear manner within the first couple of years.

Behaviour change versus practice change: Similarly, was the differing importance placed on the 'water quality' and 'stewardship' outcomes of the WTMIP. While it was clear that this investment was ultimately about delivering water quality outcomes, the WTMIP team saw building the stewardship foundations to support long-term behaviour change as more important than chasing short-term, easy-win practice change, as is the case with most conventional water quality projects. This underpinned differing expectations and tensions about how success was defined, measured, and reported.

Planning versus delivery: There were also differences in expectation about how much time was required for planning (post-design phase). The pressure to have water quality monitoring and treatment systems in the ground for the first wet season was in tension with the need for quality program planning, including site selection and system design. Feedback from the community also indicated their frustration with the time used for planning, reflecting a lack of understanding about how long project planning normally takes, prior to the community being engaged.

Local expertise versus scientific expertise: Although in general the scientific community recognised the value of the grassroots and co-generated learning approach, there was initial tension about the extent to which scientists had (or had not) been consulted and involved in the project, and concerns that their advice was not being fully taken on board. On the other side, landholders and industry were clear that they wanted to work with local expertise embedded within the project delivery team.

Consortium versus local delivery partners: The original consortium model endeavoured to make sure everyone was 'in the tent' in the WTMIP design, but this also raised expectations about what opportunities and benefits would flow to consortium partners. In the end, the place-based approach (by definition) favoured engaging locally wherever possible, leading to tensions when those expectations were not met.

Scale versus scope: Given the WTMIP was experimental both technically and in its approach, the scope was already large and, coupled with the scale of delivering over two basins, made this pilot project challenging. However, it did emphasise the importance of flexibility, as the project evolved differently across the two basins.

Different expectations about what the project would do: Even late in the project it was clear that various partners still had differing expectations about what the WTMIP was supposed to do. Given the broad nature of its original mandate, it had become many things to many people, and would never deliver on everyone's expectations. The final scope of the project was not communicated effectively at the start of the implementation phase to stakeholders.

1.4. Recommendations from the WTMIP

The following recommendations derive from material from the ***external evaluation***, a MIPs Steering Committee meeting and internal reviews by the WTMIP delivery team.

WTMIP-specific legacy in Johnstone and Tully Basins

Develop a Model of Practice for place-based approaches to Reef water quality projects: The ***external evaluation*** recommends that OGBR fund, and Terrain and partners develop, a formal model of practice for place-based approaches to Reef water quality projects, drawing on the many lessons from the MIPs and similar initiatives. This product can be produced quickly and at relatively low cost and would support the practical application of many of the lessons emanating from the WTMIP, informing future project design, delivery, and investment decisions.

Continue monitoring to evaluate ongoing return on investment: The ***external evaluation*** recommends that the OGBR provide a small amount of funding to monitor ongoing WTMIP outcomes for at least the next three years. There is the unique opportunity to collect evidence of the longer-term effectiveness of grassroots, place-based approaches, which, as identified throughout the evaluation, is not possible within short project timeframes.

Continue with targeted LSM program: Maximise prior investment in infrastructure and capacity by investing in ongoing, local-scale monitoring, taking advantage of its immense popularity with landholders and its impact on motivation and stewardship. The emphasis is likely to move from "Show me it's my N" to "Is what I am doing making a difference?" and "What more can I do?"

ACTION: *Following the success of the local scale water quality monitoring component of the WTMIP, OGBR has committed an additional $3 million to extend this monitoring program for another three years, commencing in late 2021.*

Close the loop on catchment repair and demonstration sites: Also maximising WTMIP investment to date, where beneficial, complete monitoring of promising catchment repair and demonstration sites (including productivity over the full cane cycle). Successful demonstrated practices and treatment systems could then be scaled up to accelerate progress towards targets, as per Taskforce Recommendation 8. This has the potential to complement the government's investment in Reef Credits over the next four years.

ACTION: *The aforementioned additional $3 million OGBR funding will also involve continued monitoring of a select number of catchment repair sites installed through the WTMIP for a further three years, commencing in late 2021.*

Invest in expanding high-potential catchment repair initiatives: In-drain wetlands have the potential for widespread, cost-effective adoption with no impact on productivity. There is strong industry and landholder interest, and development of a Drain Management Best Management Practice (BMP) could deliver considerable water quality results. This is a key area of expansion given it has been acknowledged that practice change alone will not reach the targets. Again, this has potential to complement the government's investment in Reef Credits over the next four years.

Expand work with bananas: Investigate expansion of opportunities within the banana industry (given the GBRF focus will be on cane) and the gains that can be made in initiatives such as water quality-sensitive new farm layout.

Project and program design recommendations

Apply the Model of Practice where appropriate: Promote and utilise the Model of Practice (recommended above) to inform project and program design, maximising the practical transfer and application of MIP learnings. This will profit from the MIP experience and deliver further return on the investment already made in trialling this new approach.

Couple productivity and water quality: While the WTMIP did focus on productivity, industry has identified the opportunity to focus research, demonstrations and engagement efforts more explicitly on raising productivity and nutrient use efficiency rather than fertiliser reduction, flipping the message from 'blame' to 'gain'. Initiatives such as improving soil health (growing in popularity) and managing crop growth constraints will be directly relevant to landholders and maximise uptake, generate sustained change and deliver accelerated progress towards the water quality targets. (*Note: the model being applied to the Reef Trust VII Murray and Mossman project and the Canegrowers GBRF project for the Johnstone and Tully focusses on growing more cane rather than applying less fertiliser).*

Take time to co-design meaningfully: It takes time and resources to understand the community and the context, and to then genuinely co-design the program with that community. Rather than coming to the community with a program design and set activities, come with an idea, and see how this can be informed by local knowledge, priorities, and existing initiatives; but expect it to take time if it is to be done well.

Plan for a technical planning phase: Where projects involve landscape interventions (e.g., treatments system or water quality monitoring), a planning phase (e.g., one year or 'pre-project') could be factored in and funded, which would develop a comprehensive understanding of the landscape context (e.g., in different seasons) and avoid later inefficiencies such as inappropriate infrastructure or equipment purchase, and poorly planned interventions.

Invest locally – support locals: Build, use, maintain and continue to improve the skills and capacity of local people (e.g., growers, contractors, industry staff) as the basis of building local capability, ownership, and ongoing commitment to project initiatives. There is enormous knowledge and experience within local communities that can add value and, in some cases, accelerate the identification and dissemination of locally tailored solutions.

Alignment and integration: Wherever possible, develop, design and deliver projects collaboratively, seeking investment in an integrated program of works, rather than individual competing projects. This will resolve issues of competition for individual project attribution and deliver greater return on investment overall, as well as deliver a better experience for the grower. *(Note: this is the model that is now being applied to the Reef Trust VII*

Murray and Mossman project and Canegrowers have pursued this for their GBRF project bid for the Johnstone and Tully as an example of the transfer of WTMIP learnings and eliminating or minimising the 'Gravitron' effect).

Policy and investment-level recommendations

Innovation and next wave of practices: Invest in projects that focus on the development and trial of new technologies and land management improvements to achieve water quality outcomes. The ***external evaluation*** repeatedly noted the importance of identifying new opportunities for further water quality-sensitive practice change as a key priority for future Reef projects. This aligns with Taskforce Recommendation 6: *Fund development of new ideas and solutions*.

Promote and invest in integration: The ***external evaluation*** recommends that investors should ensure that water quality projects for a specific geographic location are planned and delivered as an integrated package aimed at achieving shared outcomes. This will ensure contributions of different projects and investors work constructively together to achieve collective water quality outcomes. *Contribution* rather than *attribution* then becomes the focus in reporting return on investment. Such an integrated package should include all investment, whether through government itself or third-party groups such as NRM groups or industry organisations.

Re-frame measures of success: Develop a more comprehensive framework for defining success, which includes P2R but also measures achievements in science, knowledge building, stewardship and the long-term commitment of landholders and industry to change. While P2R may be one element of that framework, it only highlights one piece of what is a complex jigsaw. Including industry-defined measures of success will help promote 'win-win' solutions. Ensure that *all* future investment (internal departmental investment programs and projects delivered by external parties) is required to report against these broader measures of success.

Timeframes for investment: Given the renewed international spotlight on the GBR, now is the time for the Queensland and Australian Governments to jointly commit to a **10-year investment plan** to bring funding continuity and enable longer-term initiatives to reap rewards. The ***external evaluation*** notes that the MIP model and similar projects with long-term intended outcomes are limited by short-term funding periods. The short-term, stop-start nature of project funding, and the associated loss of momentum, capacity, relationship, trust and expertise is well known to result in diminished return on investment. The serious issues with this approach have long been emphasised (particularly by industry and extension providers), and now is the perfect opportunity to move the funding policy for Reef to align the investment framework more closely with the long-term nature of the Reef 2050 Plan.