

## Fact Sheet: Report on the costs of achieving the water quality targets for the Great Barrier Reef

### Background

As part of its advice to the Queensland Government, the Great Barrier Reef Water Science Taskforce was asked to consider the costs to achieve ambitious reef water quality targets of up to an 80% reduction in nitrogen run-off and up to a 50% reduction in sediment run-off from key catchments by 2025. Given the scale and complexity of the challenge, the Taskforce wished to consider the range of actions required and the cost and effectiveness of each action.

### About the report

Alluvium Consulting, leading a team of economic and water quality experts, was commissioned to investigate seven policy solutions to determine which would be most cost effective in reducing sediment and nitrogen run-off across key Great Barrier Reef catchments. The study was original and ground-breaking in the use of a large volume of historical research and modelling relating to reef catchments and abatement measures.

### Key findings

There are a number of lower-cost, lower risk solutions (including improving land and farm management practices) that can be pursued immediately and will significantly improve water quality in key catchments.

These solutions closely align with current investments by the Queensland and Australian governments and will go a considerable way to achieving the targets in the highest priority catchments.

The total cost to meet the targets in four out of five regions investigated and to make good progress in the Wet Tropics is estimated at \$8.2 billion. The cost reduces to approximately \$3.86 billion for 75% progress towards the targets and falls further to \$0.623 billion for 50% progress.\*

\*These figures are approximate as they only consider a portion of the possible solutions and don't allow for future innovative approaches.

### What solutions were assessed?

The study considered policy solutions which had a recognised correlation between cost and measured improvements to water quality in the Wet Tropics, Burdekin, Mackay Whitsunday, Fitzroy and Burnett Mary regions.

The seven policy solutions that were investigated were:

- land management practice change for cane and grazing
- improved irrigation practices
- gully remediation
- streambank repair
- wetland construction
- changes to landuse (including conversion to conservation uses)
- improved urban stormwater management.

### What do the results mean?

Using the policy solutions that were investigated, the targets can be met in four out of the five regions. However, implementing the full list of actions in the Wet Tropics would only achieve 75% of the DIN target and 80% of the fine sediment target. Meeting the targets in this region will require an expanded set of policy solutions and the identification of innovative practices for the region.

For most regions, significant progress towards the targets can be achieved at a relatively low cost. However, as the targets are approached, higher cost solutions will be needed and the total cost of achieving the targets increases significantly.

The majority of the \$8.2 billion figure is made up of the more expensive measures that would only become a priority for investment after the lower cost, higher impact solutions had been implemented. This is why the figures are so much lower to achieve 50-75% of the target.

This reinforces the need to implement low cost tools now to allow time to identify cheaper ways to deliver the expensive last steps in improving water quality.

There are significant cost differences across regions and between sediment reduction and nitrogen reduction. The cost of meeting the fine sediment target is \$7.8 billion compared to \$0.4 billion for nitrogen.

For example, around \$5.6 billion (or 68% of the total cost) is associated with just one abatement action - gully remediation – in just one catchment - the Fitzroy. However, work to identify which gullies are the most cost-effective to remediate would give a much more accurate cost figure.

The report also emphasises that if future developments add to existing nitrogen and sediment loads, the targets will be harder to meet and costs will increase.

Investment in innovation work to find more cost-effective solutions is critical and both the Australian and Queensland governments are investing in trials to improve water quality outcomes.

## **Existing funding**

---

The Queensland Government will spend at least \$450 million on reef water quality initiatives over the next 10 years. That level of funding should result in significant progress towards the targets using existing technologies. This is also complementary to investment by the Australian Government, which has committed over \$300 million to 2019, and the private sector.

## **How will the report be used?**

---

The report will provide valuable guidance when deciding investment strategies to improve water quality outcomes for the Great Barrier Reef.

As more information is received from monitoring and evaluating the effectiveness of different tools and as new solutions are developed, the information underpinning the report can be used to refine the cost estimates and the cost-effectiveness of different tools.

## **More information:**

---

Great Barrier Reef Living Wonder website – [www.gbr.qld.gov.au](http://www.gbr.qld.gov.au)