



National Environmental Science Programme

## NESP Tropical Water Quality Hub

### Research Priorities for Multi-Year Funding Call – 2016

#### Research Priorities for 2016 Funding Round

<b>Water Quality Improvement</b>
1a) Provide science to support existing field trials that develop/evaluate practical on-farm nutrient and sediment loss mitigation/capture and land management practices that will influence behavioural change and improve water quality outcomes. Field trials should include key growers and change agents and demonstrate water quality outcomes.
1b) Provide science that demonstrates effectiveness and enables improved targeting of streambank erosion and on-ground remediation works to achieve improved water quality outcomes. This should enable better understanding of cause and effect (where and how investments should be targeted) and may include evaluating past investments.
1c) Examine the fate, persistence and exposure characteristics of existing and/or alternate pesticides used in GBR catchments, in freshwater and marine environments, to develop water quality/ecotoxicity guidelines and to support ecological risk assessments. Specify the rationale or process for pesticide selection.
1d) Innovative approaches for using economic levers for achieving nutrient/sediment loss reductions and/or to encourage land use or practice change.
<b>Improved Monitoring/Reporting/Assessment</b>
2a) Undertake research for the Reef 2050 Integrated Monitoring and Reporting Program (RIMReP) to develop cost-effective indicators and metrics for key GBRWHA biophysical and human dimension values and identification of associated ecosystem thresholds and guidelines for grading scores, linked to specific objectives and targets in the Reef 2050 Plan.

2b) Development of a method to be adopted by the Reef 2050 Integrated Monitoring and Reporting Program (RIMReP) to monitor and assess aesthetics in the GBRWHA. Define/determine how these relate to the ecological health of the Great Barrier Reef environment.

**Improved Management of Key Species/Habitats**

3a) Evaluate the links between water quality and coral bleaching thresholds and how these contribute to management objectives. Water quality parameters evaluated should include those amenable to reductions via catchment management.

3b) Evaluate existing or future management solutions for coastal freshwater wetland systems repair (incl. artificial wetlands and improved irrigation management where this benefits existing natural wetlands). Must examine these management solutions via linkage to existing projects/programmes and must address water quality benefits and/or connectivity with marine habitats.

3c) Define the values of the ecological system of the Great Barrier Reef that lie outside of the GBR marine park and world heritage boundaries (e.g. Torres Strait, Hervey Bay, Coral Sea) and how their management and connectivity does or should be incorporated into GBR protected area management. This is expected to be a scoping study level desktop project.