



National Environmental Science Programme

Project 3.1.6 Exploring trading in water quality credits as a cost-effective approach for managing water quality in the Great Barrier Reef

Project Summary

This project will investigate opportunities for trading in nitrogen and sediment 'credits' as a cost-effective approach for managing water quality in the Great Barrier Reef (GBR) as a key measure in meeting the objectives in Reef 2050 Long-Term Sustainability Plan. Projected future expansion of coastal settlements, industries, agriculture and aquaculture will increase the risk of additional nitrogen and sediment loads to the GBR. Any load increases can only be accommodated within designated load limits if nitrogen and sediment emissions are reduced elsewhere. These reductions could be achieved, for example, through catchment repair and rehabilitation works, constructed treatment wetlands, land-use conversion and changes in agricultural practice. Combining these two complementary aspects in a single integrated framework, this project investigates how appropriately designed trading mechanisms can bring together 'buyers' and 'suppliers' of nitrogen and sediment 'credits' to deliver cost-effective solutions for reducing loads and achieving water quality targets. The project will also estimate how revenues from credit trading could potentially stimulate rural economies and create jobs by incentivising innovative business opportunities.

Problem

Under the terms of the Sustainable Planning Act 2009, economic and population expansion in GBR catchments will have to be accommodated within 'no net worsening provisions' on water quality. This will be challenging and potentially very costly, given the projected expansions in the Reef coast's population and associated initiatives for development of agricultural and non-agricultural activity in the region.

How Research Addresses Problem

The GBR Taskforce Report recognises that market-based approaches such as water quality credit trading offer a potential mechanism for facilitating future economic expansion within end-of-catchment nutrient and sediment load targets. Trading in water quality credits could also help stimulate innovative land-based business opportunities in the GBR catchments.

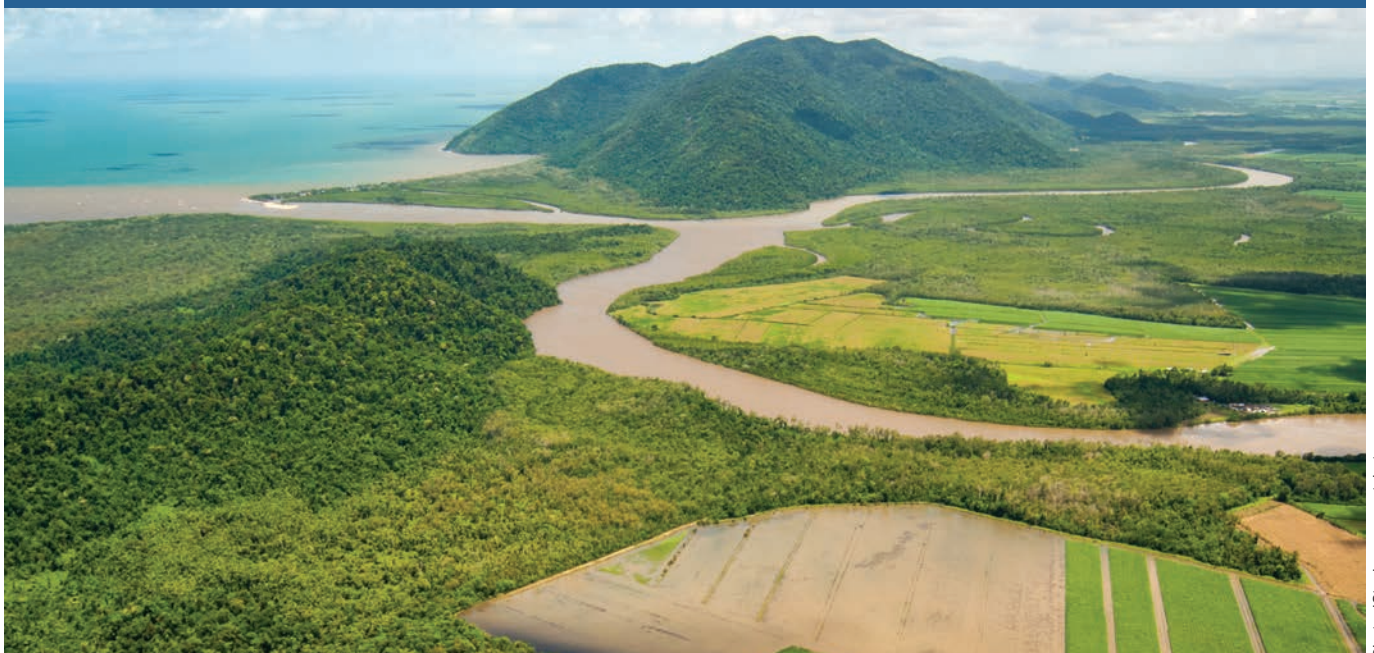


Photo: iStock - greenantphoto



Photo: iStock - davidf

Methods

Step 1

Catalogue regulatory and governance frameworks around water quality credit trading schemes, nationally and internationally. Identify factors which affect success and failure of water quality trading schemes worldwide.

Step 2

Consult with potential credit buyers to identify likely current and future demand for nitrogen and sediment credits, provide information on barriers to participation in credit trading, and explore how these barriers might be overcome through appropriate design of credit trading mechanisms.

Step 3

Consult with potential suppliers of nitrogen and sediment credits to determine their likely willingness to supply credits, provide information on possible barriers to participation in credit trading, and explore attitudes towards risk.

Step 4

Simulate credit trading under different market configurations. Develop proposed implementations for nitrogen and sediment credit trading frameworks in representative GBR catchments.

Step 5

Investigate how revenues from credit trading could potentially stimulate rural economies and create jobs by incentivising innovative land-based business opportunities in emissions reduction.

Further information

See www.nesptropical.edu.au or contact:

Dr Jim Smart – GU

T: +61 (0)7 3735 5290

E: j.smart@griffith.edu.au



This project is supported through funding from the Australian Government's National Environmental Science Programme