# NERP TE Hub Project 12.4

# Governance, planning and the effective application of emerging ecosystem service markets to secure climate change adaptation and landscape resilience in Far North Queensland.

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**Mid Term NERP Integrated Theory Report**

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## Theoretical Background:

The international literature on the management of ecological and agricultural systems has long argued the importance of securing landscape resilience in the face of climate change and other land use and natural resource pressures. Given the increased importance of adaptation debates in global climate negotiations, pressure to achieve biodiversity, food and water security through managed landscape-scale adaptation responses will increase across all nations.

Emerging market-based terrestrial greenhouse gas abatement programs (at international, national and provincial scales) present a real opportunity to secure adaptation to climate change through enhanced landscape resilience. The environmental governance and natural resource management (NRM) literature, however, provide few cohesive examples or critiques of how the world's developed and developing nation-states might be able to take advantage of these opportunities to achieve such landscape-scale transformations in the face of enormous change.

Australia (and FNQ in particular) has a great opportunity to take advantage of emerging market-based programs to achieve landscape-scale adaption. Our national landscape predominantly comprises agricultural (pastoral and cropping), Indigenous and conservation landholders. The regional aggregation of agriculture, forestry and land use (AFOLU) activities carried out by these landholders will be required both to mitigate Australia's greenhouse gas emissions and to secure the transformational changes needed to enable adaptation to climate change in these landscapes and communities that rely on them.

By both good fortune and coincidental design, Australia's national governance arrangements for natural resource management (NRM) are well suited to making regional aggregation (regardless of the biophysical environment and land holding arrangements) possible. This has established the need for development of a stronger theoretical framework concerning the role of regional NRM governance and planning in supporting landscape-scale mitigation and adaptation. Theory is needed to inform those involved in the governance of, and planning for, natural resources to maximise the impact emerging market-based programs might have on building landscape resilience in the face of climate change.

## Project 12.4's Background:

Based on the theoretical thinking outlined above, the strategic aim of NERP Project 12.4 was to partner the region's key stakeholders to review, trial and evaluate the most effective governance systems and regional planning foundations for landscape scale adaptation to climate change. In particular, within the context of these governance systems and planning arrangements, the Project's intent was to focus on the potential application of emerging ecosystem service markets to secure landscape-scale resilience for biodiversity in the face of climate change. In this context, the key intent of the Project has been to:

1) Design/secure the most appropriate regional governance systems and planning mechanisms needed to support regional scale adaptation to climate change;

2) Design/ secure the most effective and integrated planning arrangements for regional scale adaptation for biodiversity; and

3) Guide the carbon market and other emerging ecosystem market investments towards priority biodiversity outcomes within the regional landscape.

As a result, the first key objective of the Project has been to provide theoretically-informed strategic policy advice to regional NRM bodies across the nation concerning the development of emerging carbon-based ecosystem service markets and the use of regional NRM plans to guide market investment and to support both the State and Commonwealth government to develop appropriate policy arrangements in this regard. These collective agenda (adaptation planning and the application and use of emerging carbon markets) present significant policy and delivery opportunities to secure landscape-scale change with regard to terrestrial biodiversity. Given poor theoretical development in this area, however, a short term and focused evidence base was required in the first 12 months of the project.

Through our partnerships between the researchers and decision makers, our intent has been to devise continuously improving regional governance systems and institutional arrangements for climate change adaptation. Consequently, within these systems, regional and landscape scale adaptation planning also sets the foundations required to best facilitate the strategic development and aggregation of priority carbon and other ecosystem service market products (including native reafforestation, managed regrowth, avoided deforestation, improved forest management and biodiversity credits). Such national, state and regional partnerships have enabled the theoretical work developed to have a high delivery impact and to directly inform developing DSEWPAC policy

concerning regional adaptation, and particularly, the role of regional NRM planning in guiding emerging carbon markets in Australia. Consequently, lessons from the research have already influenced national policy and practice concerning regional adaptation and NRM planning.

With these needs in mind, the key theoretical research objectives within that period have been to:

- Develop and test theory concerning the governance and institutional arrangements needed for regional climate change adaptation;

- Develop and test theory concerning the integrated and effective use of regional scale adaptation planning.

These objectives have been and will be critical precursors to the Project's third and fourth objectives. These are:

- Research the most effective linkages between region planning and outcome delivery via the application of emerging ecosystem service markets, including the aggregation of carbon and other ecosystem services at regional scale; and

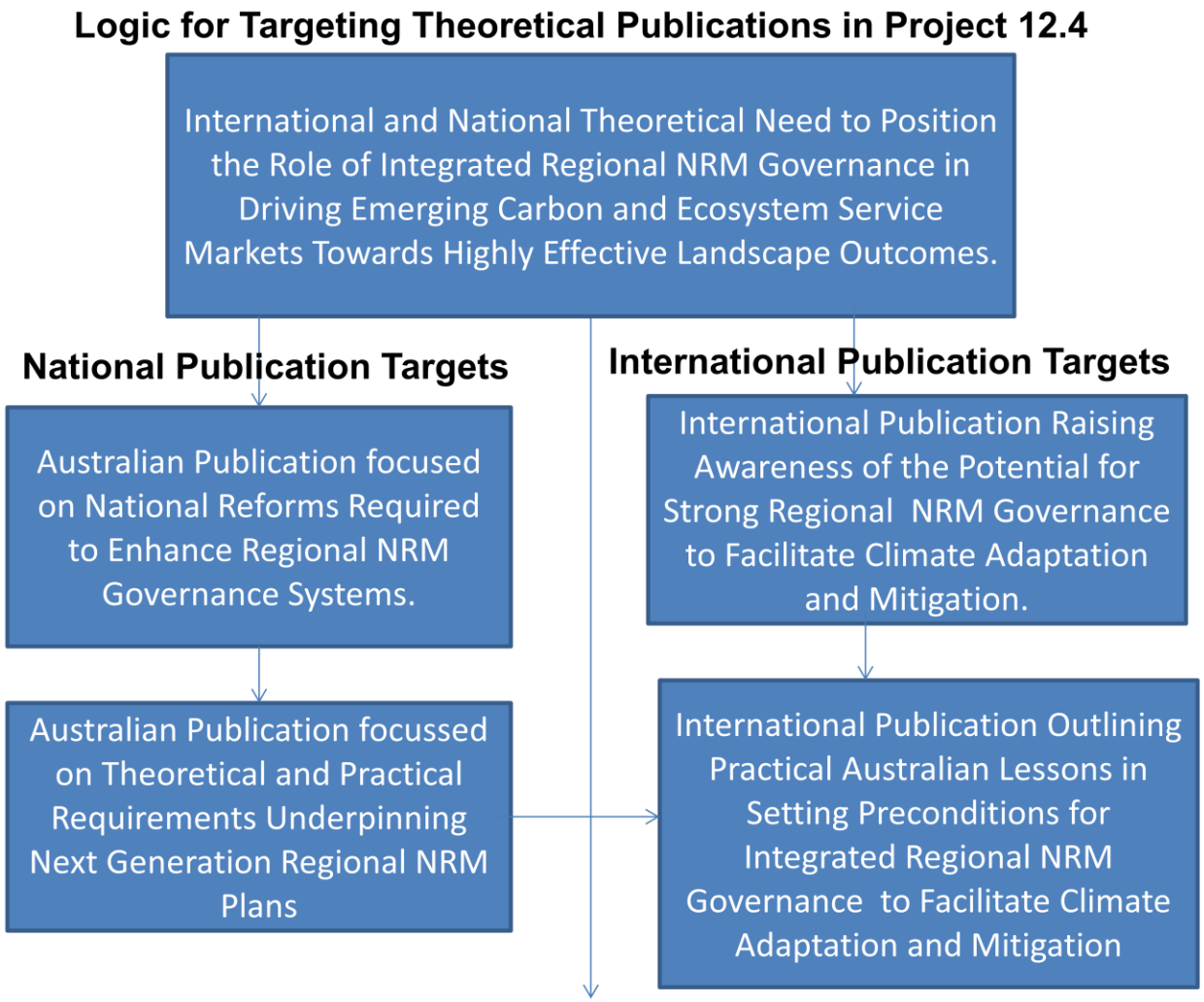
- In partnership with end users, devise the practical reforms required to improve the regional governance and planning systems required and linkages needed to effectively guide carbon-based and other emerging ecosystem service markets.

With much of the theoretical work behind us in the first 12 months, we are now well positioned to project effectively to complete these third and fourth objectives in the second 12 months.

The purpose of this mid-project report is to consolidate the logic behind targeted theoretical writing undertaken and progressed to publication in the first 12 months.

# The Integrated Theoretical Logic Applied:

This project commenced with the view to consolidating theoretical frameworks, national and international experience in regard to governance systems for climate change adaptation and planning. The intent was to then apply this theory to the potential to enhance landscape scale planning in ways that could best guide unfolding ecosystem service markets. To provide the maximum influence of the theoretical material published, we applied the following theoretical logic to our publication targets:




Keeping in mind our purpose, we:

- Wanted to initially raise awareness of the potential for effective regional NRM governance to guide the unfolding international markets in greenhouse gas and biodiversity-based ecosystem services markets;
- Target current reviews with respect to the nation's regional natural resource governance arrangements by exploring reforms need to most effectively guide unfolding markets; and
- Specifically target new national and Queensland policy work concerning the recrafting of next generation NRM plans.

Through our combined strategy of strategic engagement for policy influence and targeted international and national publication, we consider we have achieved this intent. In particular:

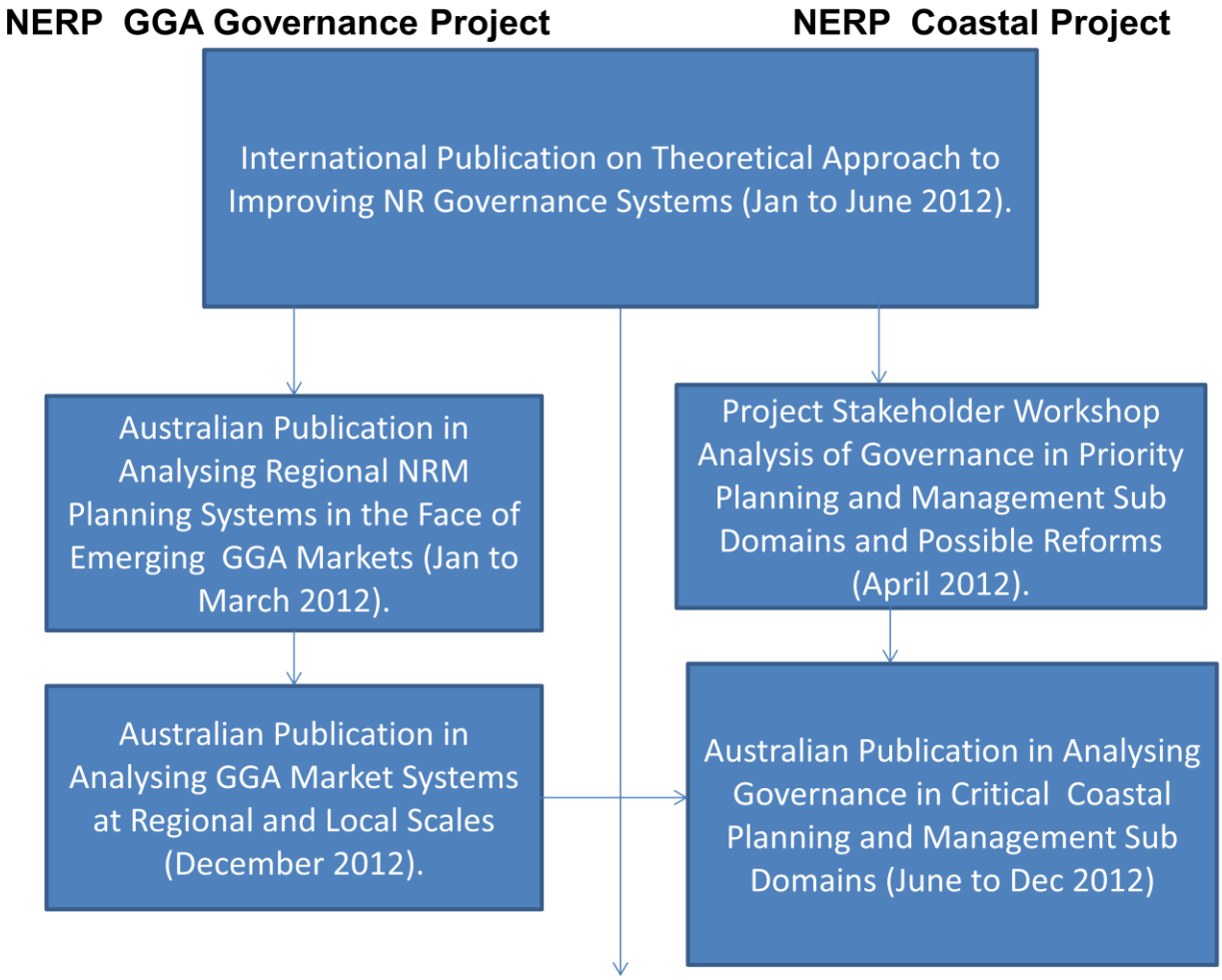
- Timing of the project's commencement coincided perfectly with negotiations between Regional NRM Bodies and the Australian Government with regard to the finalisation of the Carbon Farming Initiative legislation and consequent design of the $1.7 Billion Land Sector

Package. This enabled the project to directly inform and influence the final CFI legislation, the allocation of significant national resources to next generation NRM plans and the preliminary Australian Government principles for such plans;

- Equally, at the international and national scale, this project's timing has dovetailed nicely with significant interest in reforming governance systems for climate adaptation and GGA markets. This resulted in an invitation to contribute to a special edition book chapter on the value of regional scale natural resource management governance in the mitigation of, and adaptation to, climate change. This was followed up with an invitation to contribute to a special edition of *Global Environmental Change* on this topic; and
- Further, because of increasing national debate about national reforms required to enhance a range of multi-scalar governance systems in Australian, we were invited by ANU to contribute a chapter to a national edited book concerning multi-layered governance systems. This enabled us to assess national reforms that will be required to enhance regional governance systems in ways that will enhance the effective operation of carbon and ecosystem service markets.

Because of these theoretical foundations, in the next set of milestones, the Project will be well positioned to focus on local scale governance systems affecting the roll-out of Australia's CFI.

Additionally, while this project has been particularly focused on regional NRM governance and planning and its relationship to unfolding GGA and ecosystem service markets, it is strongly linked to Bob Pressey project around Coastal Zone Governance and Planning (Project 9.4). This project is commencing with a much wider theoretical overview of governance system analysis, with and internationally-focused theoretical paper currently nearing completion. The theory in this paper, has guided the more specific governance analysis work developed in Project 12.4. The following explicitly outlines these links.


NERP GGA Governance Project
NERP Coastal Project
International Publication on Theoretical Approach to Improving NR Governance Systems (Jan to June 2012).
Australian Publication in Analysing Regional NRM Planning Systems in the Face of Emerging GGA Markets (Jan to March 2012).
Project Stakeholder Workshop Analysis of Governance in Priority Planning and Management Sub Domains and Possible Reforms (April 2012).
Australian Publication in Analysing GGA Market Systems at Regional and Local Scales (December 2012).
Australian Publication in Analysing Governance in Critical Coastal Planning and Management Sub Domains (June to Dec 2012)

# The Published Theoretical Results:

In this report, we do not repeat the theoretical foundations developed within the project as they are fully outlined in the attached papers. These papers are listed below:

- Dale, A., Ryan, S. and Broderick, K. (Invited to submit and accepted and final edits submitted to a national edited book on multi-level governance systems by ANU). Integrated natural resource governance: Regional progress and potential national reforms;
- Dale, A., McKee, J. Vella, K and Potts, R. (Submitted to Australian Planner and currently in review). Carbon, biodiversity and regional natural resource planning: Towards high impact next generation plans in Australia.
- van Oosterzee, P., Preece, N. & Dale, A. (2012). An Australian landscape-based approach: AFOLU mitigation for smallholders. *In* Wollenberg E, Nihart A, Tapio-Biström M-L, Grieg-Gran M (eds). *Climate Change, Mitigation and Agriculture*. Earthscan, London.
- van Oosterzee, P., Dale, A. and Preece, N. (Accepted and final edits submitted). Integrating agriculture and climate change mitigation at landscape scale: Implications from an Australian case study. Invited to submit and accepted to a special edition of *Global Environmental Change*.

To understand the linkages to theoretical developments in the Pressey project, the emerging draft paper on the theory of Governance Systems Analysis is also attached. This will be submitted for publication within this milestone period and is titled:

- Dale, A. Vella, K and Potts, R. (In development). Governance Systems Analysis (GSA): An Applied Approach to Analysis and Strategic Reform of Our Governance Systems.