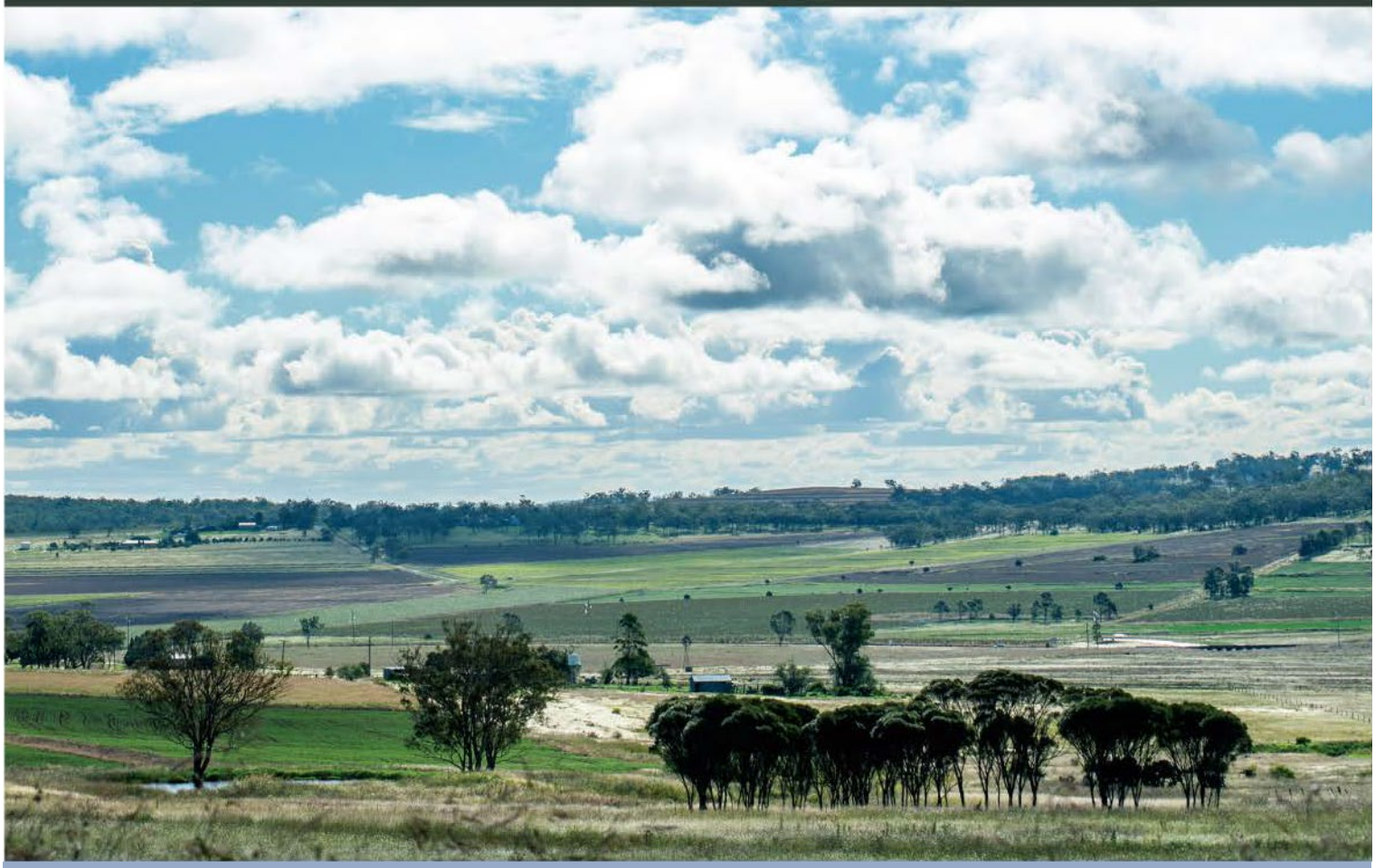
EAST COAST
NRM CLUSTER

CLIMATE CHANGE IN AUSTRALIA

IMPACTS & ADAPTATION
INFORMATION
FOR AUSTRALIA'S NRM REGIONS



EAST COAST CLUSTER ENGAGEMENT REPORT

Background

This report has been produced as part of the Climate Change Adaptation for Natural Resource Management in East Coast Australia project. The project is being delivered by six consortium partners: University of Queensland (Consortium leader); Griffith University; University of the Sunshine Coast; CSIRO; New South Wales Office of Environment and Heritage; and Queensland Department of Science, IT, Innovation and the Arts (Queensland Herbarium) to foster and support an effective "community of practice" for climate adaptation within the East Coast Cluster regions that will increase the capacity for adaptation to climate and ocean change through enhancements in knowledge and skills, and through the establishment of long term collaborations.

Funding for the project is received from the Australian Government as part of the Natural Resource Management Climate Change Impacts and Adaptation Research Grants Program, under Stream 2 of the Natural Resource Management Planning for Climate Change Fund.

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NSW Government Office of Environment & Heritage

SEQ Catchments Healthy Land, Healthy Water

The University Of Queensland AUSTRALIA

gciQ Global Change Institute

Burnett Mary Regional Group Practical Solutions for Natural Resource Management

Griffith UNIVERSITY

University of the Sunshine Coast Queensland, Australia

The University Of Queensland AUSTRALIA

University of Wollongong AUSTRALIA

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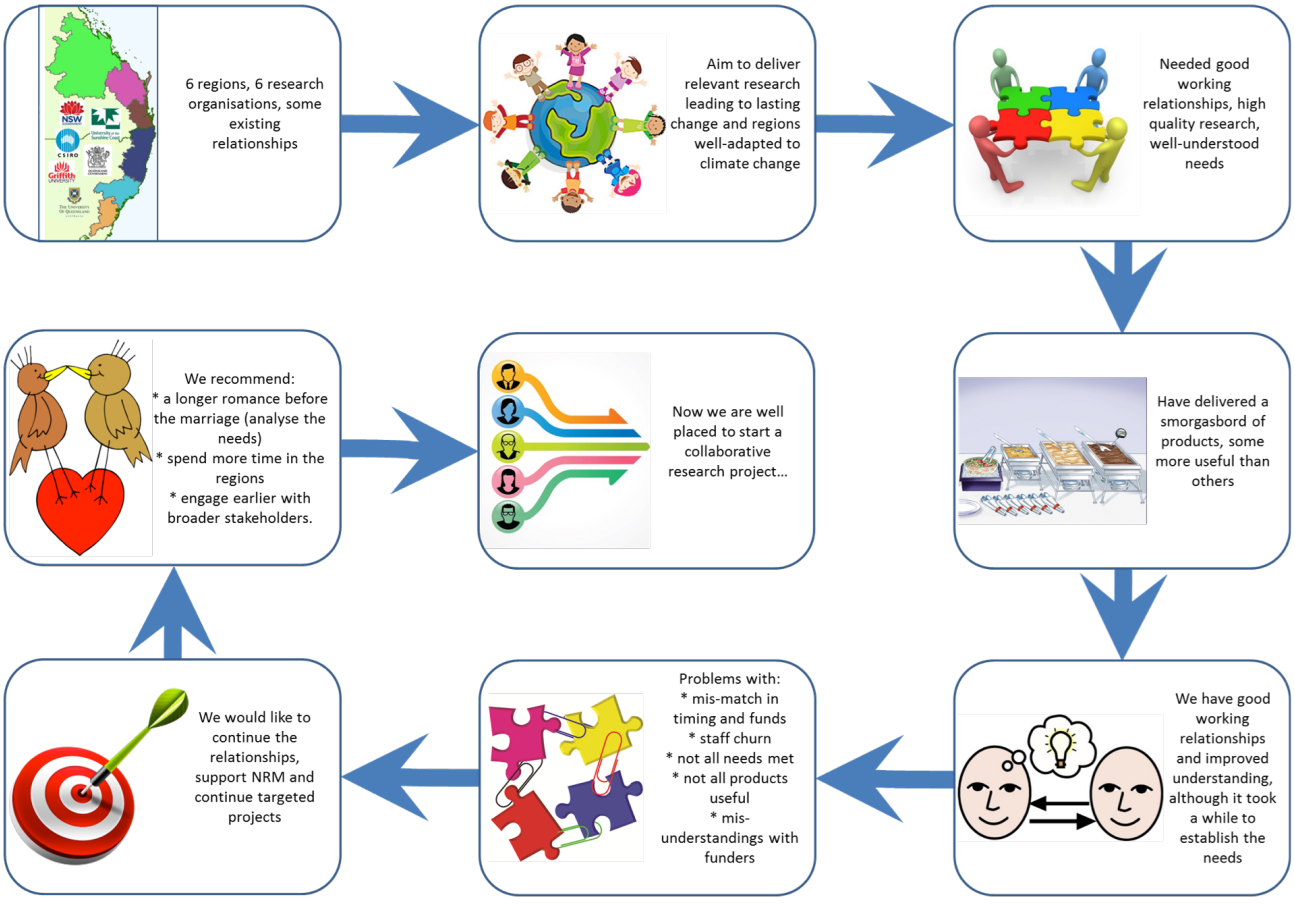


INTRODUCTION

THE GOAL

The **East Coast Cluster** includes six regional NRM bodies and six research organisations **working together** to achieve:

mainstreamed climate change adaptation in NRM planning, based on high quality, useful research.

THE PROCESS

The project was initially developed by the lead researchers from each of the consortium partners, with input from at least one of the NRM bodies. At the start of the project, representatives were identified from each of the 6 regional NRM bodies in the cluster. A **Planners Working Group** and Project Reference Group were established.

The first of the Planners Working Group workshops aimed to identify the needs of the NRM bodies as a focus for research by the consortium partners. Subsequent workshops included presentations and discussions from consortium researchers, researchers from other clusters, the national AdaptNRM team and the national projections project. The workshops were also key in facilitating interactions among the planners as a 'community of practice'.

Outputs from each of the research projects were delivered throughout the project, and interaction between the researchers and the practitioners at the workshops was a key part of the research communication process.

THE FUTURE

Once working relationships have been developed and understanding built and trust established, it is important to maintain the relationships to maximise benefits from the project. Researchers will continue to work on climate change adaptation projects and are keen to continue to support NRM bodies, particularly in developing targeted projects.

THE GOOD

- The Planners Working Group was effective in establishing and building relationships between the researchers and practitioners, broadening the focus of the researchers, sharing project ideas across regions and establishing processes to communicate science for NRM planning. The Planners Working Group formed part of the process to communicate the research for NRM planning.
- The community of practice of planners worked well as it allowed the regions to share project ideas and progress, collaborate on projects and develop spin-off projects.
- Collaborations between researchers contributed to better multi-disciplinary understanding and improved understanding, which will have ongoing benefits for future collaborations.
- The cluster format was useful in facilitating interactions between regions that might not otherwise have occurred, particularly interactions across the state border.

THE NOT QUITE AS GOOD

- Connections between clusters were not as effective as they could have been – this was seen as a missed opportunity.
- There was a mismatch between the timing and provision of funding for the researchers and the regional NRM bodies, which meant research products were often delivered after the planning processes were significantly complete.
- Institutional change and staff churn in the NRM bodies caused disruptions to the ability of the NRM bodies to fully engage in the project.
- The contract arrangements were not always flexible enough to allow researchers to change their projects to better meet the needs of the NRM bodies.
- The 'smorgasbord' of research outputs provided some that were useful and some that were less useful.

RECOMMENDATIONS

Start with the needs

Greater involvement and communication with the practitioners during the scoping phase (before contracts and milestones are agreed) would allow the researchers' to be matched to the needs of the practitioners (not the other way around).

Practice makes perfect

Some of the best learning opportunities came from practitioners sharing their experiences and approaches. Building a community of practice with a clear focus facilitates more rapid spread of good approaches.

Get together

Face-to-face interactions are important in building relationships. Workshops also provide an effective way to communicate research that is far more effective (for those who attend) than writing a report.

Get regional

Any time spent by the researchers in the regions and with the NRM bodies is beneficial. It would also be useful to engage other key stakeholders earlier in the process.

Get national

Greater collaboration and sharing between the clusters could have provided useful information and facilitated greater use of research outputs. Communication **during** the project is at least as important (if not more) as communication **after** the project.

Stay the distance

It is important that both practitioners and researchers are committed to participating in the project for its entire duration. Some degree of churn is expected, but it is best to plan to have everyone involved throughout.

Build on it

Once a project is complete, established relationships make a great foundation for another project.

EAST COAST CLUSTER RESEARCH SUMMARY

Modelling distribution of species under climate change scenarios
Terranova.org.au

Modelling distribution of agricultural commodities under climate change (cropping, grazing and avocado)
Terranova.org.au

Three pass framework for assessing coastal vulnerability
Maps of first pass assessments

Downscaled climate projections
Datasets and maps
http://climatechange.environment.nsw.gov.au/

Updated climate change projections
Datasets, maps and analysis tools
http://www.climatechangeinaustralia.gov.au

Reflection and analysis of research to practice engagement processes

Analysis of adaptive capacity of one regional body

Socio-economic vulnerability of agricultural industries under climate change
Terranova.org.au

Briefing notes for horticulture, grazing, coastal tourism including integrated vulnerability and industry responses

Syntheses including scenario planning, coastal vulnerability, revegetation for use in NRM planning

Report on carbon farming opportunities potential resulting landscape changes
Carbon and biodiversity revegetation (Butler et al. 2014) benefit mapping

Scenario planning workshops for NRM bodies and key stakeholders to build capacity to apply in strategic planning
Terranova.org.au

Modelling of biodiversity persistence under climate change and mapping of conservation benefits
Terranova.org.au

OUTCOMES FROM THE PROJECT

APPLICATION OF RESEARCH

BMRG and FBA have incorporated **climate change projections** in their plans as background material.

All regions found the regular **workshops** useful in maintaining **inter-regional connections** and learning about research outputs.

SEQ Catchments invited cluster researchers to participate in **expert panels** and the steering group for their plan review processes, to assist in incorporating research outputs.

BMRG and FBA will use the **carbon farming report** and **regrowth benefits mapping** to identify preferred areas for carbon farming.

SEQ Catchments' local government stakeholders attended the **scenario planning workshop**, with the intention of applying the methodology to their **local planning processes**.

Some regions attended the NCCARF 2014 conference and found research from **other clusters** and regions useful.

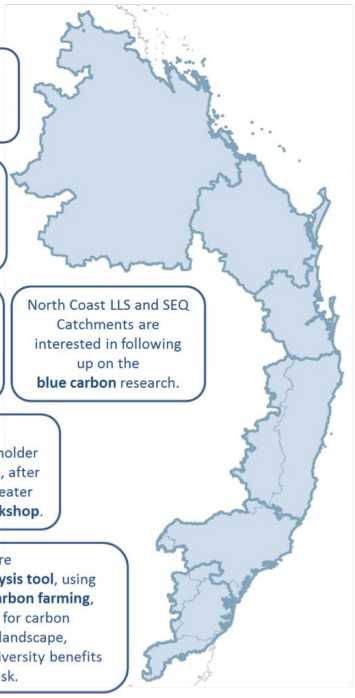
North Coast LLS and SEQ Catchments are interested in following up on the **blue carbon** research.

Hunter and North Coast LLS are interested in using the **coastal vulnerability analysis**, particularly any available spatial layers.

North Coast LLS have identified local government and stakeholder climate change knowledge and actions, after learning about a similar project by Greater Sydney LLS during an **engagement workshop**.

Greater Sydney LLS have started drafting "**website chapters**", using the **AdaptNRM biodiversity modules**, to examine the implications of climate change for regional biodiversity management.

3 NSW LLS are developing a **spatial analysis tool**, using **tri-cluster modelling + carbon farming**, to identify best areas for carbon sequestration in the landscape, including carbon and biodiversity benefits and climate risk.



REGIONAL PLANS

Fitzroy Basin Association

- Central Queensland Sustainability Strategy 2030 is complete: http://cqss2030.com.au/plan-future/plans-framework/
- Asset-based framework, with high-level objectives and strategies
- Online with spatial tool to be developed

Burnett Mary Regional Group

- The draft Burnett Mary NRM and Climate Adaptation Plan 2015: http://www.bmrg.org.au/our-programs/planning-evaluation-technology/plan/
- Asset-based framework, focused on climate adaptation
- Online with web portal

SEQ Catchments

- SEQ NRM Plan draft complete: http://www.seqcatchments.com.au/seq-nrm-plan-1/the-seq-nrm-plan
- Includes assets, community and beneficiaries
- Includes targets, current condition, future prediction, local and planning action
- Implementation plans being developed for each local government area

North Coast LLS, Hunter LLS, Greater Sydney LLS

- Local Strategic Plans are being developed
- Previous systems-based Catchment Action Plans will provide useful information, but may not contribute to strategic planning

PROJECT GOALS AND GOVERNANCE

PROJECT GOALS

The overarching goal of the project was to achieve:

"changed practice based on well tested evidence whose value to society exceeds the cost of enquiry"

(Roux et al. 2010). The researchers described the goals in more detail (Figure 1):

The challenge for the research consortium is to deliver high quality research that results in outputs that lead to managers making better decisions, leading to lasting change and adaptation pathways. The ultimate aim is sustainable natural resource management in regions that are well adapted to climate change. To get there, we need to provide a lasting boost to the capacity of planners in regional NRM bodies to respond to change – we need to create a situation where planning with climate change considerations are mainstreamed. We need to integrate and synthesise a diverse set of data and knowledge that crosses discipline boundaries, to provide succinct message that NRM regional bodies can relate to and communicate. We also need to provide ways to convey messages that lead to adaptation pathways. The research must be of high quality, interesting and useful for NRM groups. We would also like to maintain or develop successful cross-disciplinary working relationships that can continue into the future.

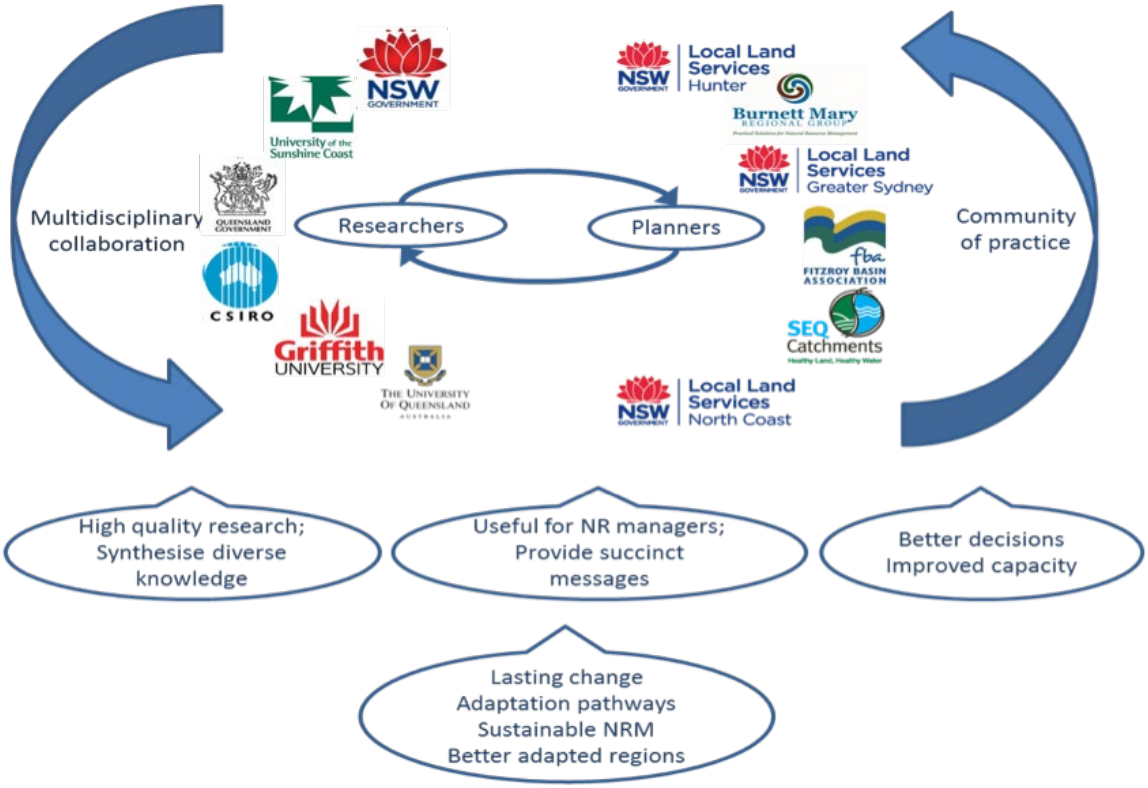


Figure 1. *Aspirations for researcher-practitioner interactions (Rogers et al. 2014)*

PROJECT GOVERNANCE AND ENGAGEMENT PROCESSES

Two formal structures were established to govern the project (Figure 2):

The Project Reference Group (PRG) was comprised of lead researchers from each of the consortium partners, and Chief Executive Officers (CEOs) or General Managers of East Coast Cluster regional bodies. The PRG provided oversight, over-arching guidance for the Project, and facilitated communication among groups and feedback on project activities.

A Planners Working Group (PWG) was also established to facilitate the adoption of project outputs and outcomes by the regional bodies. It comprised planners from the regional NRM bodies, planning researchers from Griffith University, and other researchers as required.

Both groups convened twice a year from April 2013 to April 2015; the PRG by teleconference and the PWG in person at workshops held in Brisbane.

In addition to the PWG and PRG, other engagement processes included:

- Researcher collaboration
- Stream 2 meetings
- Individual involvement
- Planners network and cross-cluster collaboration.

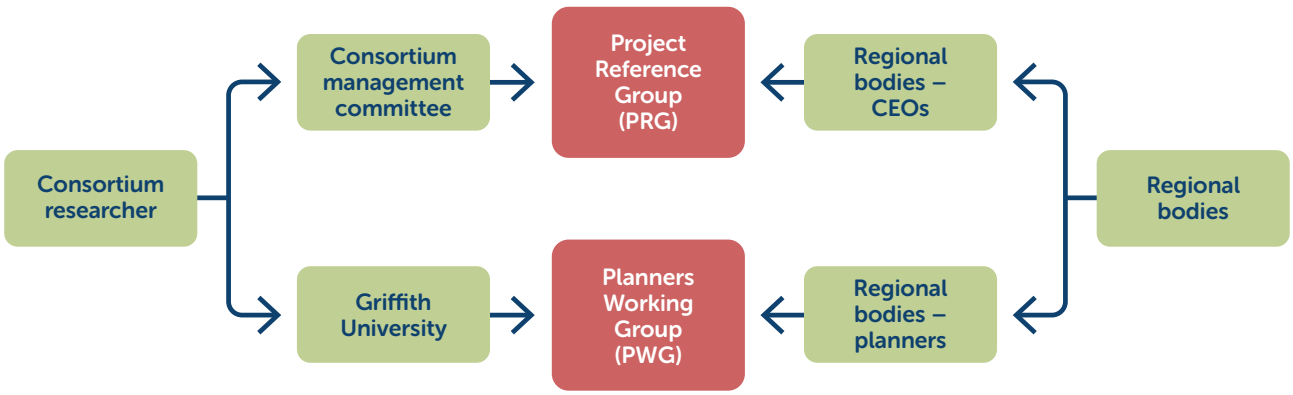


Figure 2. *The formal governance structure of the project included researchers and practitioners in the Planners Working Group and the Project Reference Group*

PLANNERS WORKING GROUP

A community of practice to support a network of informed and articulate NRM agents with knowledge of current climate science and capacity to use current tools to engage stakeholders in NRM planning for climate change adaptation

PLANNERS WORKING GROUP

The Planners Working Group (PWG) was designed to be the primary mechanism for information sharing and capacity building throughout the Project. PWG members included representatives from each of the NRM regional bodies in the Cluster, the Griffith University team and other researchers as required.

The overarching aim of the PWG was to **"support the building of a network of informed and articulate NRM agents with knowledge of current climate science and capacity to use current tools to engage stakeholders in NRM planning for climate change adaptation".**

The PWG functioned as a 'community of practice', that is, a group of (NRM planning) practitioners increasing their knowledge and expertise (around NRM planning for climate change adaptation) by interacting on an ongoing basis. The PWG formed the core group of the community of practice, with the broader group of stakeholders participating when activities aligned with their interests. In this way, the project contributed to building capacity within the wider community of practice to effectively plan for climate change adaptation.

PWG workshops were held approximately every six months from May 2013 to 2015 (5 workshops). All workshops lasted for two days. The workshop schedule, topics and workshop reports are given in Table 2.

One or more representatives from all NRM regional bodies attended all workshops, with the exception of Hunter LLS at the November 2014 workshop and BMRG, FBA and Hunter LLS at the April 2015 workshop (Table 1). There was staff churn during the project, with the primary contact for North Coast LLS, BMRG and FBA changing during the project.

NRM body	Contact	Role	Apr 13	Nov 13	Apr 14	Nov 14	Apr 15
Fitzroy Basin Association	A	Primary contact until July 2014	y	y	y	y	n
	B	Primary contact from July 2014	n	n	n	n	n
Burnett Mary Regional Group	C	Primary contact until Sept 2014	y	y	y	n	n
	D	Planning officer from Nov 2014	n	n	n	y	n
	E	Operations manager	n	n	n	y	n
SEQ Catchments	F	Primary contact	y	y	y	y	y
North Coast LLS	G	Primary contact until June 2013	y	n	n	n	n
	H	Primary contact June 2013 – June 2014	n	y	y	n	y
	I	Primary contact from June 2014	n	n	n	y	y
Hunter LLS	J	Joint contact until Aug 2014	y	n	y	n	n
	K	Joint contact	y	y	n	n	n
Greater Sydney LLS	L	Primary contact	y	y	y	y	y
	M	Project officer from April 2014	n	n	y	y	n

Table 1. *Attendance at Planners Working Group meetings showing staff churn during the project*

WORKSHOP SUMMARY APRIL 2014	TOPIC
13-14 May 2013	Needs analysis
Analysis of the Needs of the East Coast Cluster Regional Natural Resource Management Bodies in Relation to Planning for Climate Change Adaptation	
18-19 Nov 2013	Climate change projections + PWG
Workshop Review November 2013	
29-30 Apr 2014	PWG
Workshop Summary April 2014	
25-26 Nov 2014	Scenario planning + PWG
Planners Working Group Workshop Summary November 2014 NRM Futures – Scenario planning for climate change adaptation Workshop 1 Summary	
22-23 Apr 2015	Scenario planning + PWG
Scenario Planning report Workshop report	

Table 2. *Date, topic and interim report title for each of the 5 workshops held during the project*

EVALUATION AND REFLECTION PROCESS

The overall objective of the project was to achieve *"changed practice based on well tested evidence whose value to society exceeds the cost of enquiry"* (Roux et al. 2010:734). However, it is recognised that the processes that lead to changed practices occur over long timeframes, and it is difficult to assess the extent of changes and their benefits until long after projects have finished.

Roux et al. (2010) proposed a framework that captures the elements that contribute to meeting this outcome, as a basis for participative reflection. The framework was designed to apply to projects involving three main parties: funders (the federal government), research providers, and research end users or practitioners (NRM bodies). Campbell et al. (2015) applied the framework in a critical reflection process, and found that most of the criteria were the joint responsibility of two or more of the groups identified.

The framework was used as the basis of evaluation in the final workshop. The process for adapting the framework to this project involved removing criteria that were seen to be the sole domain of one group; combining some of the criteria where there was substantial overlap; and rewriting some of the definitions to be less research-centric. The resulting framework is shown in Box 1.

Critical reflection was undertaken twice during the project in April 2014 and 2015. Both processes included the development of practice stories to document individual and group experiences. The workshop in April 2015 also included identification of bridges, barriers and opportunities for improvements against the key criteria listed in Box 1. Individual practice stories and narratives are provided in the two workshop reports, and specific comments against these criteria are included in the April 2015 report. The following sections summarise the overall **bridges, barriers** and **opportunities** for engagement.

Box 1. *(Right). Description of key criteria for critical reflection on the effectiveness of the engagement processes (Roux et al. 2010)*

Leadership
Program funding and consistent leadership has been established that is conducive to long-term research including the advancement of facilities, inter-project learning and application by practitioners.

Continuity and organisational capacity
Funders, researchers and practitioners maintain commitment and engagement to the research program over the whole course of a transdisciplinary research program and support the capacity and availability of their staff to fully engage in the project.

Discourse
Events have been programmed and funded to develop and sustain discourse to strengthen relationships between research providers, practitioners, funders and the wider community to inform and contextualize the research.

Flexibility
Researchers and practitioners have freedom to explore modes and structures of practice within appropriate limits of scientific and financial accountability, and to change research projects in line with emerging practitioner needs.

Adaptive learning
Feedback from project and program evaluations is being used to improve processes, relationships and behaviours – at program, project and individual level, and during the project, not just at the end.

Knowledge sharing and relevance
New knowledge is developed with the explicit recognition of its intended application, as measured by the degree of interaction with research users and their ability to apply the knowledge. Researchers and practitioners share their findings and insights with each other, peers, and parties that represent other knowledge forms.

Capacity building for adoption
The capacity of all participants to understand and communicate with each other and the research-practice nexus is improved. Research processes are designed to improve the capacity of practitioners to engage in the research process and to utilize relevant new knowledge.

Adaptive decision-making and policy revision
Practitioners have the processes and flexibility to incorporate new research findings into their decision-making, strategic planning and policy where relevant.

WHAT WORKED: ENGAGEMENT BRIDGES

PLANNERS WORKING GROUP

The PWG workshops were useful as they facilitated:

- regular interaction between the researchers and the planners that contributed to developing relationships
- sharing of project ideas, progress and initiatives across regions
- broadening the understanding and focus of the researchers away from 'academic' outputs to the 'real world'
- establishing procedures and processes to communicate science into NRM planning.

Having workshops twice a year instead of once as originally planned was important in maintaining momentum and engagement.

Although the high level of staff churn was an issue for the continuity of the group, the PWG was regarded overall as one of the more successful elements of the project.

+ Discourse + Adaptive learning

INTER-REGIONAL INTERACTIONS

Inter-regional Interactions were useful in:

- encouraging interactions and relationships across the NSW-QLD border, which had been limited before the project
- initiating a collaboration between the three NSW LLS to develop a joint spatial modelling tool for targeting biodiversity and land management actions with multiple benefits.

In addition, prior to the project, the Queensland NRM planners had established the Queensland Planners Network, which was successful in sharing planning practices and research across regions.

+ Adaptive decision-making and policy revision

COMMUNITY OF PRACTICE

Each PWG workshop included time for the regions to share progress and ideas. Practitioner sharing and learning was identified as a useful way to:

- hear about innovative ideas
- develop partnerships and collaborations
- develop understanding of different planning processes.

Some NRM bodies developed spin-off projects based on those of other regions.

Having a common point of focus across the regions helped, although the regions were often at different points in their planning.

The sessions allocated for the community of practice were always highly rated in workshop evaluations.

+ Adaptive decision-making and policy revision

SINGLE POINT OF CONTACT

One researcher was identified as the primary point of contact for the regional bodies. Benefits included having a clear role and responsibility for maintaining communication to prevent liaison from becoming too diffuse. However, it was important not to restrict interaction between NRM bodies and other researchers.

Regular communication (emails) were sometimes useful but sometimes a distraction from important messages.

+ / — Discourse

RELATIONSHIPS

The project built relationships and enhanced interactions and understanding between researchers and practitioners.

Some regions enjoyed participating in the project as it provided an escape from mundane activities and opportunities to interact with like-minded people *("like an injection of monkey glands")*.

+ Knowledge sharing and relevance

INDIVIDUAL CONNECTIONS

Interactions between the NRM bodies and individual researchers included:

- individual researchers participating in planning activities, e.g. expert panel workshops
- the UQ team meeting with FBA and industry groups to groundtruth the modelling approach. This provided important feedback to the project.

However, due to a lack of funding and the dispersed nature of the cluster, this was the only visit by a researcher to the regions. It was generally agreed that opportunities for more researchers to travel to the regions and interact with other NRM practitioners would have been greatly beneficial.

+ / — Knowledge sharing and relevance

RESEARCHER COLLABORATION

The project contributed to better understanding among the researchers across disciplines and improved collaborations and relationships, even among researchers who had previously worked together.

It was recognised that improved understanding in multi-disciplinary teams is an ongoing process, and does not happen all at once. It is important to have a constructive process that advances collaboration, rather than expecting it to happen automatically.

+ Leadership

RESEARCH PROCESSES AND PRODUCTS

A variety ('smorgasbord') of research outputs were provided, some more useful than others.

Products that were most familiar to the NRM bodies were more easily applied, including:

- climate change projections
- weeds and biodiversity modules
- maps and spatial layers.

NRM bodies acknowledged that social and economic aspects were important but still difficult to include in NRM planning processes.

The process also stimulated different ways of thinking about the future and impacts.

The research will form part of the knowledge base to be used into the future.

+ Capacity building for adoption

+ Knowledge sharing and relevance

WHAT DIDN'T WORK: ENGAGEMENT BARRIERS

INSTITUTIONAL CHANGE

The change from Catchment Management Authorities (CMA) to Local Land Services (LLS) in NSW during the project resulted in major disruptions to the project. It included:

- changes to boundaries
- changes in organisational focus, from NRM to broader regional service delivery
- changes in CEOs (representatives on the Project Reference Group)
- changes in staff and job uncertainty
- an overall reduction in staff and funding.

However, the delays resulting from the change enabled at least one LLS to have more time to better integrate the research outputs.

The Queensland NRM bodies also faced reductions in funding and staff and changes in government priorities.

— Continuity and organisational capacity

FUNDING AND TIMING MISMATCH

The mismatch in timing of the funding for the NRM bodies and researchers meant the bulk of the funding for NRM planning was delivered before the research outputs were available. In many cases, NRM bodies had to plan or make allowances for outputs that were not yet available. Delays in publishing reports (e.g. the projections) also limited the usefulness in public and stakeholder consultation.

In addition, several of the research groups did not have sufficient funds to employ research staff for the full duration of the project. Some staff were therefore unavailable at the beginning of the project (when projects were being developed) and at the end of the project (when results were available to the NRM planners).

— Continuity and organisational capacity

— Leadership

CROSS-CLUSTER CONNECTIONS

The program as designed offered huge opportunities for comparing and sharing information and experience across clusters. However, much of this opportunity was not fully realised due to a lack of mechanisms for interaction across clusters.

The effectiveness of the national workshops was limited as the need for travel made attendance difficult for many NRM bodies.

The lack of a central website to share documents was also an impediment.

— Leadership — Discourse

RESEARCH PROCESSES AND PRODUCTS

Some of the research outputs in the 'smorgasbord' were not as useful as expected. Researchers usually have a limited set of methods and tools that they can apply to specific types of problem, and it is difficult to change the focus of a research project once contracts have been signed and staff appointed. It is therefore important to match researchers to the needs of the practitioners as early as possible in project development.

— Knowledge sharing and relevance

IDENTIFYING NRM BODIES' NEEDS

One problem was that there was little communication around the needs of the NRM bodies before the project started.

The competitive nature of the tender process as well as limited time for interaction in the project development phase also impacted on project design.

Once the project was underway, the needs analysis process was useful, but took longer than expected.

There was a lack of clarity at the beginning of the project about what was on offer from the researchers.

The NRM bodies were at different stages and their needs did not always align. It was difficult for the NRM bodies to know what they needed at the start of the project.

— Discourse

CONTRACTS AND GOVERNANCE

There was a lack of clarity in the beginning about what the federal government required, and whether the main client was the federal government or the NRM bodies.

Staff churn at the federal level made it difficult to develop relationships.

There was a lack of flexibility in the contract arrangements:
– the federal government requested products that were identified as milestones, even when the NRM bodies had identified that their needs were different.

Structuring of project funding meant that some staff were not available at the start of the project.

— Flexibility — Leadership

STAFF CHURN

An ongoing problem for NRM bodies is the relatively high rate of turnover of staff, due to the short-term, project-based nature of much of the funding. Churn was most obvious in attendance at the workshops, where only 2 of the 6 regions maintained the same primary contact throughout the project.

Some researchers were not employed for the whole duration of the project due to budget constraints. This was particularly problematic at the start (defining the projects) and end (applying the research) of the projects.

— Continuity and organisational capacity

PROJECT REFERENCE GROUP

The PRG was intended as a mechanism to engage more broadly with the regional NRM bodies and reinforce support for the project from GMs and CEOs. However, GMs and CEOs rarely attended the meetings, often delegating to the planners, who were also the main point of contact for the PWG. This limited the ability of researchers to communicate more broadly within the NRM bodies.

— Leadership

CONCLUSIONS AND RECOMMENDATIONS

SCOPING NEEDS AND PROJECTS

Better processes to identify practitioner needs and co-develop the project **before** the contracts are drafted and the projects are developed.

This could be improved by allocating time and resources for interactions before the project starts to co-design the projects, and improving processes to assist practitioners to articulate their needs.

"We needed to spend longer courting before the marriage."

BROADER REGIONAL ENGAGEMENT

Researchers spending time in the regions and engaging with other practitioners and key stakeholders in each of the regional NRM bodies (including operations staff, general managers and others) would provide benefits in terms of improving the relevance of the project, awareness of the project and the capacity of the practitioners to use project outputs. These visits would need to be explicitly included in project planning, with time and resources allocated.

It could also be useful to engage with key stakeholders of the regions (e.g. local government) earlier in the process.

COMMITMENT TO CONTINUOUS INVOLVEMENT

Some degree of staff churn is inevitable, but projects should be designed to have all researchers and practitioners involved throughout the project. Limiting involvement due to budget constraints is not helpful.

PROJECT DESIGN PROCESS

When co-designing a project with researcher and practitioner input, the following process may be useful:

- Practitioners explain their immediate situation and requirements, forecast their needs into the future, and identify any existing relevant projects or case studies
- Researchers explain their interests and capabilities and provide examples of relevant projects
- Identify common interests to scope projects
- Researchers provide synthesis of existing knowledge; this builds the relationship, demonstrates capacity and starts the conversation on research application
- Project development includes specific information on how research outputs could be applied by specific practitioners or organisations.

MULTIPLE SOURCES OF INFORMATION

Facilitating information sharing between practitioners is at least as important as communication between researchers and practitioners. Including a community of practice element in projects has multiple benefits. In particular, sharing examples of good practice in applying research can facilitate faster uptake of research. Documenting the processes involved in applying research outputs is also important in facilitating further uptake.

CROSS-CLUSTER

Processes to improve cross-cluster interactions during the project could include:

- establishing a forum for online interactions between regions during the project – this could include space for draft outputs as well as discussion space to facilitate ongoing sharing of ideas and rapid uptake of ideas that are relevant across clusters
- resourcing for face-to-face interaction – e.g. funding for attendance at national workshops
- recognising the opportunities from increasing interaction and sharing ideas during the project; these are at least as important (possibly more) than disseminating outputs at the end
- facilitating better documentation of projects, particularly the how and the why, to make it easier to share processes across regions and clusters.

MAINTAIN RELATIONSHIPS

The start of the project development process was dedicated largely to building relationships and understanding between the researchers and practitioners. Once those relationships are established, it becomes easier to develop further projects.

Consortium researchers will continue to work on climate change adaptation and are interested in continuing to support regional bodies, through targeted projects and maintaining relationships.

CLARITY OF FOCUS FOR DELIVERY

Contracts and project design processes should clearly identify the roles and expectations of each party, and provide greater clarity on:

- Who is the primary client – the funding body or the research user?
- What happens when contract milestones and deliverables do not align with user needs?

MULTIPLE FORMS OF COMMUNICATION

Greater focus from the researchers on engaging practitioners with the research process and outputs in different ways is useful. Researchers often assume that the research reports are the primary mechanism by which others engage with their research. In this project, however, personal interaction with researchers at workshops was critical to enhancing practitioner understanding and application of the research. It may be useful to include workshops and individual interactions explicitly as part of the research communication strategy, recognising that the reports are most useful for those not involved in the project.

Similarly, synthesis and summary communication products are essential for engaging audiences with little time to go into detail. It is often useful to combine outputs from more than one research project, and to include examples or case studies of research application.

REFERENCES

Butler, D., Halford, J. and Evans, M. (2014). Carbon farming and natural resource management in eastern Australia, Queensland Department of Science, Information and Technology, Innovation and the Arts, Brisbane.

Campbell, C. A., E. C. Lefroy, S. Caddy-Retalic, N. Bax, P. J. Doherty, M. M. Douglas, D. Johnson, H. P. Possingham, A. Specht, D. Tarte and J. West (2015). Designing environmental research for impact. Science of The Total Environment, 15, pp4-13.

Dowdy, A., Abbs, D., Bhend, J., Chiew, F., Church, J., Ekstrom, M., Kirono, D., Lenton, A., Lucas, C., McInnes, K., Moise, A., Monselesan, D., Mpelasoka, F., Webb, L. and Whetton, P. (2015). East Coast Cluster Report, Climate change in Australia projections for Australia's natural resource management regions: cluster reports.

Heyenga, S., Curnock, M., Taylor, B., Marshall, N. and Signorini, J. (2015). Coastal processes, tourism and climate change in the East Coast Cluster: impacts and opportunities, briefing note #4.

Roux, D. J., R. J. Stirzaker, C. M. Breen, E. C. Lefroy and H. P. Cresswell (2010). Framework for participative reflection on the accomplishment of transdisciplinary research programs. Environmental Science and Policy, 13, pp733-741.

Taylor, B., Marshall, N., Heyenga, S., Butler, D. and Long, P. (2015). Grazing and climate change in the East Coast Cluster: impacts and opportunities, Briefing Note #1.

Taylor, B., Heyenga, S. and Marshall, N. (2015). Cropping and climate change in the East Coast Cluster: impacts and opportunities, Briefing Note #3.

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INFORMATION
FOR AUSTRALIA'S NRM REGIONS

Cox, M., Serrao-Neumann, S. and Low Choy, D. 2015. *East Coast Cluster Engagement Report.*
Climate Change Adaptation for Natural Resource Management in East Coast Australia Project, Griffith University.
https://www.terranova.org.au/repository/east-coast-nrm-collection/planning-packages