**Research Methods**

This collaborative research project involved representatives from two Traditional Owner groups in the region, the Reef Catchments NRM climate officer, an Indigenous ethnobotanist from the Tropical Indigenous Ethnobotany Centre, and a CSIRO social science researcher. The project aimed to engage Indigenous people in climate change planning with Reef Catchments NRM. An Indigenous driven approach was adopted in this project which included designing the project with the Traditional Owners and beginning our discussions with their observations, experiences and knowledge of climate change before introducing western science concepts of climate change.

Reef Catchments NRM invited members of the regional Traditional Owner Reference Group to participate in the project. Representatives of the Yuibera and Koinmerburra Traditional Owners expressed interest and were then invited as project partners. The Traditional Owners from the two groups are custodians of land and sea country that make up the Great Barrier Reef Catchments. Yuibera country includes the regional town centre of Mackay. Nine participants from both groups participated in the project.

The research consisted of several stages (see Table 1). First was a meeting with representatives from the two groups and Reef Catchments staff to discuss and gain approval for the project and define our initial steps. The Traditional Owners’ request was for the work to begin with visits to country and a week’s camp at Cape Palmerston National Park. Second was a week-long camp on country and visits to other places which have a story. At the camp and visit to important cultural places on country we did knowledge recording and mapping. The sites of recording were selected by the Traditional Owners. The third stage involved workshops on observed changes on country, climate information, analysis of climate risk and projection, and development of strategies for action. Climate information provided included projection and risk maps of: seal-level rise to 2100; seagrass distribution, storm surge and flood risks based on past events and landscape vulnerability; agricultural land use and soil erodibility maps based on current risk assessments; and social and environmental adaptive capacity and sensitivity maps based on existing environmental  risks, vegetation condition and census data. The mapped climate risks are projected to increase with extreme weather events (see Moran et al., 2014). The fourth stage was the involvement of the Traditional Owners in the regional multi-stakeholder climate adaptation workshops.

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| **Event** | **Participants** | **Discussion Topics** |
| Meeting | All Partners | Discuss project, negotiate outputs and design the first stages of the project. |
| Camp and visit on country | All Partners | What changes have occurred on-country and what are the impacts?  How the Traditional Owners are currently involved and engaged on country? |
| Climate Risk Maps and Strategies Workshops | Traditional Owners supported by project partners | Who and what is at most risk for each of the climate risk maps?  What are the potential impacts of the risks? |
| Climate Risk and Strategies Workshops | Traditional Owners supported by project partners | What are the key drivers of change on their respective countries?  What are the key challenges, opportunities and values the Traditional Owners want to address in their strategies? |
| Regional Multi-Stakeholder Workshops (run by NRM officer) | Traditional Owners | How effective was the regional process in providing the Traditional Owners with opportunities to express their views?  What success and difficulties did they experience in engaging regional stakeholders? |
| Interviews to assess usefulness of project activities and climate risk maps | Traditional Owners | How useful was the climate information and climate risk maps in thinking about climate risks to country and people?  What has been the value of involvement in the project and are these different from their expectations at the beginning? |

**Table 1** Research stages and the discussion topics

Interviews were also used to confirm observations. For example the Traditional Owners’ request to take copies of the maps confirmed their interest to further explore its use. The analytical framework, sensemaking (see Figure 1), was refined iteratively between the literature and engagement with the case study. Data was grouped into themes and categorised under each of the sensemaking categories of retention, enactment and selection. Observations of change on country and concepts of identity fall into retention (see Figure 2 below). Discussion about observations of environmental change and climate projections and knowledge recording are part of enactment. Selection consists of the narratives and cues that underpinned the framing of climate change. The historical events of European settlement were identified as the most important contextual factors, as these continue to impact current capacities of the groups to engage in climate change and natural resource management.

Events, issues, actions: Meetings to negotiate project, camp on-country, climate projections, workshops, knowledge recording and mapping

Selection:

Narratives from collaboration framed and defined the boundaries and opportunities and strategies for action.

Retention: Observations and understanding of change on country, Traditional Owner concepts of identity and experiences of engagement

Enactment: Negotiation of project, camp on country, enact meaning through dialogue, discussion of observations, risks, and science projections

**FORMATIVE CONTEXT: European settlement, limits to access and looking after country**

**Figure 1** Sensemaking activities and context in this climate planning project

**Maps**

The geo-locations of the cultural sites were mapped onto the Mackay coastline. The map was layered with a sea-level rise and land-use map layers in PDB format and returned to the Traditional Owners with a GIS format. Please contact the Yuibera and Koinmerburra Aboriginal Corporations if you are seeking further information of these maps. The knowledge recordings were also packaged for return to the Traditional Owners.