



## **Northern Agricultural Catchments Council**

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Regional NRM Strategy Update

### **Planning For Climate Change Community Consultation**

**June – July 2014**

### **Phase One OUTCOMES REPORT**

Community Consultation & Reporting by



**TUNA BLUE**

## Executive Summary

The Planning for Climate Change community consultation, undertaken by Tuna Blue Pty Ltd during June and July 2014, has generated the following strategic directions to inform the Northern Agricultural Catchments Council.

### Climate Change Awareness

Overall, the stakeholders consulted are aware and accepting of the climate change scenarios for the Northern Agricultural Region. The participants consider the outlook of a warmer, drier climate with more extreme weather events and sea level rises as a continuation of the environmental trends they have been adapting to as land managers over the last thirty years.

### Current Adaptation Practices and Capacity

The majority of stakeholders are adapting their practices and projects to a changing climate and have been doing so for over a decade. Most participants see these management changes as necessary adaptations to protect their livelihoods, linked to the natural resource base, rather than 'climate change adaptation' specifically.

The most common adaptations are:

- Introducing perennial pastures to low production land to increase ground cover, take advantage of summer rain and increase subsoil microbes;
- Moving to cropping as a more viable and resilient option than livestock;
- Taking whole of farm approaches and tools to make unproductive land more productive including:
  - dry seeding, Variable Rate Technology, soil moisture probes, increased liming, increasing soil moisture probes, better harvest grain management (e.g. drying grain) and diversification of farm businesses;
- Improving education of individual landholders regarding adaptation practices through farmer driven research and information groups;
- Improving water use efficiency including:
  - no till farming, stock management, machinery changes, contour working and increased ground cover;
- Increasing corporate ownership and amalgamation of farms;
- Increasing crop rotation and the introduction of drought tolerant crops;
- Introducing new horticultural varieties to adapt to changing conditions;
- Increasing the spraying of horticultural crops to protect against increased frost and sun exposure;
- Better education of individual landholders through farming groups;
- Dune revegetation to provide buffers to sea level rises and limit the impacts of coastal erosion;
- Educating the community about sustainable practices in the home including water-wise native gardens, improved recycling and locally sourced foods;
- Photo monitoring and citizen science programs for monitoring sea temperatures, revegetation and bird monitoring and protection.

## NRM Priorities in a Changing Climate

Given the broad range of agricultural, coastal, biodiversity and community groups consulted, the NRM priorities for each stakeholder group are understandably linked to their specific focus or local issues. However, all groups expressed a need to focus on:

- Ensuring the productivity and livelihoods of primary producers are protected;
- Maintaining and building viable communities;
- Educating land managers and the wider community of the need to adapt to climate change at the ground level; and
- Practical, efficient support for the work already being done by existing local groups to manage natural resources.

The most common NRM priorities raised are:

- Increasing local engagement and on-ground NRM support for groups to improve implementation efforts and reduce the emphasis on volunteering;
- Strengthening relations and networking between existing grower groups and community groups, for a more integrated approach;
- Increasing support for leading landholders who are making real adaptation changes;
- Better communication of the regional NRM priorities with the wider community and stakeholders from outside the region;
- Increasing climate change education and awareness building in the region;
- Better access to NRM information, management plans and tools;
- Assistance with sourcing and navigating funding to help with community submissions;
- More incentives for soil improvement and sustainable land management;
- A focus on wind erosion and soil acidity issues on agricultural land;
- Simple education for landholders on the value of a healthy farming system;
- More sustainable land use and restoration of degraded lands in a less viable climate;
- Better crop practice such as no till farming and pasture management;
- Effective planning for identification and management of coastal risk areas;
- More Local Government involvement in NRM;
- Better engagement with LGA's on NRM and climate change adaptation responsibilities;
- A more effective approach for partnering with LGA's and community groups to better communicate local priorities and deliver on the Regional NRM Strategy;
- A focus on building resilient communities given declining populations and employment opportunities;
- Better cultural engagement between Aboriginal groups and the wider community in regards to Traditional resource management and heritage protection;
- Reviewing of groundwater allocation, licenses and use models;
- A conservative approach to carbon sequestration plantings that ensures any projects have sequestration, agricultural and biodiversity benefits;

- Education, incentives and Local Government planning to encourage more sustainable practices in towns such as waterwise gardens, recycling and alternative energy;
- Clear responsibilities between the major stakeholders on the implementation and delivery of the Strategy;
- NACC to cover gaps in delivery of the Strategy and work more effectively with local groups to achieve the targets;
- NACC to address its move towards an economic development (agriculture and horticulture) focus rather than NRM.

### Priority Landscapes for Carbon Projects

In terms of identifying priority landscapes for carbon mitigation and adaptation projects, the stakeholders are generally wary of the current carbon farming situation and are requesting more information on how any initiatives would provide a multiple benefit outcome for their businesses or communities.

The most common feedback on the Carbon Farming Landscape Analysis Maps was:

- Any carbon plantings will need to deliver multiple benefits in terms of sequestration, biodiversity and agricultural values;
- If it's already cleared land, then incorporate planting compositions that will increase its productivity e.g. perennials, biofuels or stockfeeds;
- Develop a manual for farmers that outlines the best plantings for all three benefits;
- The landscape approach is a good idea but it is necessary to understand that varies from farm to farm;
- Very wary of tree farms and replicating the negative economic impact the SW timber industry had on agriculture, so would want to see a social benefit analysis done for these maps.

### Feedback on the Draft Aspirational Goals and Targets

Overall, the stakeholders are supportive of the strategic directions being taken in the Draft Aspirational Goals and Targets. The key message from all groups is that a greater emphasis needs to be placed on the successful implementation of the Strategy including:

- Clearer identification of the roles and responsibilities between the key organisations for implementing the Strategy;
- Greater Local Government engagement in NRM and climate change adaptation responsibilities;
- Increased on-ground engagement between NACC and subregional grower and community groups.

The table in Section 3 includes detail on the priority Targets for the stakeholders and specific comments on any extra Strategies or Targets they would like included.

## Aboriginal Land Manager Consultations

The overall message from consultations with Aboriginal land managers is that practical, on-ground fencing and revegetation projects for improving the productivity of properties whilst protecting any natural assets is the key to improving NRM engagement with these stakeholders.

Specific outcomes for each of the groups consulted are detailed in Section 2.8

## Overall

The stakeholders consulted throughout the Region are aware of the effects that climate change will have on their ability to manage natural resources and protect their livelihoods.

This report provides a range of rich and informative comments that will provide an important source of grassroots input and priorities for adapting to climate change in the years to come.

The next step as expressed by the majority of participants, is to transition to effectively implementing the Strategy by agreeing on clear delivery responsibilities and assisting land managers and key organisations to implement practical, on-ground adaptation initiatives.

## Process Moving Forward

The recommended process for the second round of consultation is:

1. The Draft Regional NRM Strategy is developed by NACC in the NARVis format.
2. Innovative information sessions on using NARVis are held in conjunction with existing subregional events such as field days that will ensure greater participation and exposure, with participants encouraged to complete a simple feedback form during the events on how to improve the practicality and usefulness of the tool;
3. A highly focused workshop is held with the CEO's, Board members and relevant managers of the key stakeholder groups involved in implementing the Strategy (including Subregional Grower Groups, Local Government Authorities and Government Agencies) to focus on effective implementation of the Strategy;
4. A one day interactive training workshop is held with the NACC NRMO's (plus Subregional Group staff if appropriate) that focuses on practical facilitation / extension training for participants and discussion on how to improve on-ground engagement and implementation of the Strategy;
5. NACC uses the feedback from the information sessions and workshops to improve the usability of NARVis as a community tool and develop the Final Strategy with a clear Action Plan for effective regional implementation.

The recommended roles for this second round consultation process are:

### **NACC**

- Develop the Draft Regional NRM Strategy and NARVis;
- Attend the information sessions at field days to introduce NARVis to participants and collect feedback;
- Update and finalise the Regional NRM Strategy.

### **Tuna Blue**

- Develop the information session materials including:
  - NARVis information sheet,
  - NARVis informational video (to also be used in later promotions), and
  - feedback forms,
- Develop a video on the field day information sessions;
- Disseminate and report on feedback from the information sessions;
- Facilitate and report on the high level implementation workshop;
- Facilitate and report on the NRMO implementation workshop.



Participants at the Dongara workshop on 18 June 2014

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Participants at the Geraldton workshop on 16 June 2014



# 1. Introduction

## 1.1 Overview

The Northern Agricultural Catchments Council (NACC) is currently in the process of updating the Northern Agricultural Region's Regional NRM Strategy using funding from Stream 1 of the NRM Planning for Climate Change Fund.

The update process is placing a specific focus on gaining climate change mitigation and adaptation input, to ensure the updated Strategy will provide a tool for the region to strategically direct future NRM investment in a changing climate.

A key component of the update process is to consult with key stakeholder groups in regards to climate change priorities in the region. To gain this input, NACC contracted Tuna Blue Pty Ltd to design and facilitate an inclusive community consultation process for the June – July 2014 period, that covered:

- Raising awareness about the current climate change situation in the region;
- Highlighting current climate change adaptation practices being employed by landholders and community groups;
- Outlining regional priorities for managing natural resources in a changing climate;
- Identifying priority landscapes for potential climate change adaptation and mitigation projects; and
- Feedback on the revised targets for the updated Regional NRM Strategy.

The input from the community consultation sessions will be used to inform new climate change strategies and actions developed by the Technical Advisory Group, to be incorporated into the updated NRM Strategy.

## 1.2 Methodology

The community consultation process was designed in two phases. Phase One involved short, sharp workshop sessions with targeted stakeholder groups held as locally as possible in communities of interest whereby 1 – 4 stakeholder groups attended each session.

By taking the consultation opportunity to the local community and running a higher number of targeted sessions rather than a lower number of subregional meetings, the workshops were designed to attract a better turnout and increase on-ground engagement levels with key groups and landholders.

The localised engagement also established networks and stakeholder interest for Phase Two of the consultation process, which will involve four larger subregional workshops for feedback on the Draft Strategy from the wider community in October 2014.

To ensure clear priorities were reached within a short 3 hour timeframe, the workshops utilised participative workshop processes that allowed participants to discuss, have input and recommend direction for the update to the climate change aspects of the regional NRM Strategy. To deliver this process at each workshop, there was

- A facilitator from Tuna Blue, plus
- A climate change specialist from NACC, plus
- A number of local NRMO's or other NACC representatives.

### 1.3 Workshops Held

The Phase One workshops were held in the following locations and attracted stakeholders from the groups listed:

<i>Date</i>	<i>Location</i>	<i>Communities of Interest</i>
16 June	Geraldton	<ul style="list-style-type: none"> <li>- Birdlife Australia – Midwest</li> <li>- Abrolhos Island Body Corporate</li> <li>- Evergreen Farming Group</li> </ul>
17 June	Northampton	<ul style="list-style-type: none"> <li>- Northern Agri Group</li> <li>- Shire of Chapman Valley</li> <li>- Evergreen Farming Group</li> </ul>
18 June	Dongara	<ul style="list-style-type: none"> <li>- Dongara Tidy Towns Committee</li> <li>- Shire of Irwin</li> </ul>
23 June	Moora	<ul style="list-style-type: none"> <li>- Moore Catchment Council</li> <li>- Waddy Forest Land Conservation District Committee</li> <li>- Mogumber Farm</li> </ul>
26 June	Perenjori	<ul style="list-style-type: none"> <li>- Yarra Yarra Catchment Management Group</li> <li>- Gundawa</li> <li>- Perenjori Farming Forward Initiative</li> </ul>
01 July	Gingin	<ul style="list-style-type: none"> <li>- Gingin Water Group</li> <li>- Image Resources</li> <li>- Perth Region NRM</li> <li>- Evergreen Farming Group</li> <li>- Ellen Brockman Catchment Group</li> </ul>
02 July	Lancelin	<ul style="list-style-type: none"> <li>- Friends of Lancelin Coast</li> <li>- Ledge Point Coastcare Group</li> </ul>

Targeted consultations were also held with the following Aboriginal Land Managers:

- Mogumber Farm, 23 June 2014
- Bundybunna Farm, 25 June 2014
- Mt View Farm, 25 June 2014

## 1.4 Reporting

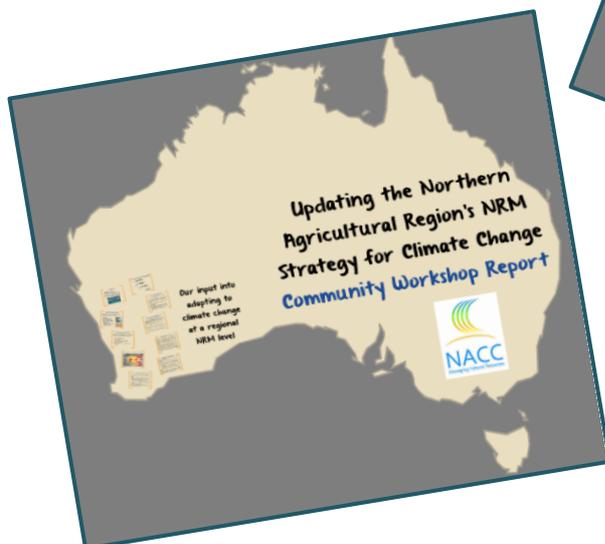
As an output, Tuna Blue produced a Communications Report utilising a visual, storytelling software within a week of each workshop. The brief Report outlined the key consensus points and priorities from the workshop and provided both a common point of reflection for the workshop's participants plus the ability to begin instantly sharing and disseminating the workshop outcomes with other stakeholder groups.

After each workshop, a link to the Communications Report was emailed to participants plus posted to the NACC Facebook page for further dissemination between stakeholders. This communication strategy served two purposes – to encourage post session input on the Report and to familiarise participants with the NACC Facebook page, thereby opening an ongoing line of communication for further consultation initiatives.

Video footage of the workshops was also collected and will be utilised to develop a series of short, appealing video clips that can be uploaded to the NACC web portal to provide a living explanation of the consultation process and the climate change initiative.



Snapshots of the Communications Reports



## 2. Consultation Outcomes in Detail

### 2.1 Geraldton

16 June 2014

#### Participants

- Grant Bain, Evergreen
- Jan Checker, Birdlife Midwest
- Leonie Noble, Abrolhos Islands Body Corporate
- Trevor Streeton, Abrolhos Islands Body Corporate
- Sarah Taylor, NACC
- Emma Jackson, NACC
- Peter MacKay, NACC
- Mic Payne, NACC
- Jasmine Rowe, NACC

#### Concerns in a Changing Climate

- We've noticed a decrease in the general bird population around places like Charles Darwin Reserve,
- We counted dramatically less migratory shorebirds along the coast last year;
- When we have a dry year at the Abrolhos islands we'll notice low breeding success;
  - we had one a few years back;
- Reduced rainfall, extreme events and out of season rainfall is a concern;
  - we'll be able to feed less people per ha;
  - out of season rainfall means the rainfall is wasted;
- Sea temperature rises at the Abrolhos islands and increased coral bleaching, species change and fish deaths is a concern;
- Sea level rises will affect coastal infrastructure on the islands;
- Less rainfall will have an effect on the native ecosystem in the region;
- Coral bleaching is the biggest change for us;
- We've had a loss of community on the islands;
  - when the quotas came in we went from 150 businesses to 69 businesses but we're slowly growing again;
- 90% of the fishermen value the environment and are in tune with it;
  - the stewardship has to be strong because our economic livelihood is linked to a functioning, healthy reef system;
- Erosion is an issue with sea level rises and increasing storm surges;
  - concerned about personal loss of infrastructure and assets;
- The onus on Local Government is huge for how to manage coastal erosion;
- The effects on tourism of lower rainfall in our national parks and reserves is a major concern for businesses;

## What We're Doing to Adapt

- Fishermen understand the climate is changing and are future proofing;
  - storm surges are part of our cyclone plans and emergency procedures;
- Incorporating perennial systems to use the rainfall better and keep the temperatures down for subsoil microbes;
  - intercropping with perennials also;
- Restoring saline lands for economic and soil health reasons;
- Trying to build resilience in what you've got rather than move to coastal farms;
- Birdlife Midwest has been passing on population data up the chain;
- Preserving water as we are rainwater reliant on the Abrolhos;
- Revegetate areas when we remove infrastructure;
- Making research driven business decisions for building resilience as crayfish species migrate and the reef changes;
- We're fishing smarter not harder;
- Some of the fishing families are diversifying and investing in coral farming to stay on the islands;
  - it's grown small and on trays to avoid coral bleaching events;
- Involved in shorebird research and information sharing is happening more with scientists now.

## Priorities in a Changing Climate

### *Group One*

- A strategic approach to tree planting that uses species and locations that can adapt to a changing climate;
  - the best plantings will should provide habitat and food for wildlife;
- Identification of coastal risk areas and getting State and Federal support;
- Education and information sharing on the protection of important breeding areas for birds;
- More support aid and facilitation for on-ground works;
- Address coastal erosion for a long term result that ensures the approach taken is the best for everyone;
  - better collaboration between State and Local Government;
- Help with grants to put up shorebird signage on the beach.

### *Group Two*

- Higher level of community consultation and participation;
- Information feedback in areas relevant to livelihoods e.g. coral habitats;
- Projects like Seeing Change gave community a better understanding of the environmental linkages associated with climate change;
- Resilient livelihoods are well understood on the Abrolhos islands and families are diversifying to keep their livelihoods on the islands;

- More climate change education because the implications haven't hit home in the agricultural system yet I don't think;
- Perennials being adopted but more for sustainability not climate change;
- Sandy soils that are particularly vulnerable to wind erosion are a priority issue;
  - perennials are the best option for exposure;
- Coastal erosion is the major issue and the need for effective coastal planning;
- State Policy exists and there is awareness at the community level but there needs to be better liaison with Local Governments;
- Need more information and research on the effects of sub-surface sea temperature rises and the impacts on species and habitat distributions;
- Need to focus on climate proofing systems inland with refugia and climate corridors;
- Incentive programs to better target farmers;
- Focus on the impacts of major marine species migration and distribution on community's livelihoods;

### Take Home Messages

- Need to start thinking more about the long term impacts and our involvement for the next generation;
- Communication and conversation are the key to helping people adapt and we're already seeing the changes because we're quicker on the islands, so keep the communication happening.

## 2.2 Northampton

17 June 2014

### Participants

- |  |                            |
|--|----------------------------|
| • Jim Wedge, Northern Agri Group & Evergreen | • Felicity , NACC          |
| • Tom Powell, Northern Agri Group            | • Emma Jackson, NACC       |
| • Kathryn Jackson, Shire of Chapman Valley   | • Peter MacKay, NACC       |
| • Violetta Crystal, NACC                     | • Elisabeth Sturrock, NACC |

### Concerns in a Changing Climate

#### Group One

- More requirements for shade in town planning role;
- Need a clearer understanding of who is responsible for climate change and better policy at a Local Government level;
- How will we fund responses to climate change impacts as Local Governments;
  - will need to increase rates whilst facing declining populations;
- How do we access climate change adaptation funding?

- Local Government lacks the capacity to adapt to climate change outside of its own core duties;
- Need on-ground actions not just high level talk.

#### *Group Two*

- Australia has a low effect on mitigation and emissions globally so we need to focus on adapting to a hotter, drier climate;
- Small communities will die, it's already happening to a degree;
- Access to finance is the major barrier to climate adaptation;
- A move to coastal land is too expensive;
- Lower productivity is driving larger farms and commercial strategies;
- Good farmers know what climate change means for the region and it's a scary forward look for farmer's sons;
- Growing population and food demand / security.

## **What We're Doing to Adapt**

#### *Group One*

- Changes to coastal setbacks and Department of Planning regulations;
- Shire of Chapman Valley was part of a Climate Change Adaptation Plan process with Shire of Irwin and City of Greater Geraldton;
- 18 month process with a Steering Committee;
  - very little practical outcomes other than 'build shade structures' which are costly to maintain anyway, trees would have been better;
  - took a short term focus;
- Farmers are using deeper ripping in the area.

#### *Group Two*

- Moving to cropping as a more viable and resilient option than livestock;
  - region is at about 100% cropping as opposed to 50 / 50 traditionally;
  - there just isn't enough pasture and the return from sheep or cattle is too low;
- We've been adapting since the 1980's;
- Using more liming and limited tillage systems;
- Soil improvement (size of the bucket) for stabilising yield;
- Experimenting with GM opportunities, there is currently interest in GM canola;
- Reluctant to plant trees as there are systemic tenure issues;
  - interested in carbon planting but only if it was economically attractive;
- Introduction of perennials on low production land;
- Trees for wind erosion control.

## Priorities in a Changing Climate

### Group One

- Farms amalgamating plus foreign ownership equals more absentee landholders and the need for feral education and more strategic biosecurity efforts;
- Oakagee Port and the 1 million tonne of rock breakwater has revegetation responsibilities through EPA and LandCorp;
  - but 4WD and recreational values (world class windsurfing spots) will be impacted and the community will need education and information on access;
- Water in the Shire of Chapman Valley is an issue given the scheme water for Nabawa is trucked from Geraldton;
- Town planning setbacks on rivers for high rainfall events and flooding.

### Group Two

- Wind erosion;
- Build on soil carbon and soil health research and investment;
  - we've had soil carbon tests for so long but they haven't changed, still below 1%;
- Better crop practice such as no till farming and pasture management;
- Bring back the Erosion Incentive Scheme and focus on perennials and soil cover for a better whole of farm approach;
- Incentives for soil improvement (liming and soil carbon);
- Raising productivity on low or non-productive soils (acidic or non-wetting);
- Evergreen whole of farm approach;
- Focus on building resilient communities and use existing examples such as Hyden;
- Future labour supply?

## Carbon Farming Landscape Analysis

- Don't want to revert back to bush, if it's already cleared then let's do something productive that delivers environmental, carbon sequestration and agricultural benefits;
  - e.g. perennials, biofuels or stockfeeds;
- Need to better explore the composition of plantings to ensure there are agricultural benefits added to the mix too;
  - develop a manual for farmers that outlines the best plantings for all three benefits;
  - landscape approach is ok but need to understand it varies from farm to farm.

## Take Home Messages

- All we can do is learn to adapt at the ground level because we won't change emissions;
- We need to focus on adaptation and building resilient communities whilst taking advantage of opportunities for mitigation;
- Hope the Strategy has some outcomes and not just become a shelf sitter; drill down to being an effective grant tool that helps us understand the land issues and policies (e.g. town planning for river flooding);
- Can't change climate change but we can learn to adapt and keep communities and farms viable;
- Learn to live with it, not get on top of it; climate change adaptation needs to be sold as sensible stuff for improving communities.

### Participants

- Kylie Bessen, Tidy Towns
- Bronwyn Scott, Tidy Towns / Shire of Irwin
- Riki Porteus, Tidy Towns / Shire of Irwin
- Sally Connolly, Community Member
- Jude Johnson, Community Member,
- Roger Johnson, Community Member
- Sarah Taylor, NACC
- Emma Jackson, NACC
- Peter MacKay, NACC

### What We're Doing to Adapt

#### *Group One*

- Replanting of dunes since 2010 through NACC and MIG funding to respond to a drier climate;
  - latest plantings have survived the 13/14 summer season;
- Waterwise gardening program for picking the right plants in a changing climate and workshops with gardening gurus;
  - targeted at households and have had good buy in from community but harder to change practices in public areas;
- Small group in community using bush tucker more;
- Tidy Towns has been building awareness about reducing carbon footprints through using local foods, sustainable energy and discouraging plastic bags;
- Through the Shire of Irwin Reconciliation Action Plan we've been focusing on Traditional Ecological Knowledge more to help community predict changes in the climate more easily;
- The Shire's Green Infrastructure Plan is at the conceptual stage but hasn't translated to ground level practicality or action at this stage;
  - we shouldn't wait until it's endorsed, we should just act;
- NACC could help with expertise and guidance in promoting waterwise street trees and plant selection;
- We hold kids gardening and recycling programs in the school holidays that get great turnouts;
- NACC could help to provide education packages and guides;
- The tip is getting new infrastructure with better recycling capacity;
- Earthcarers course on things like recycling and composting has been running for two years through Tidy Towns.

#### *Group Two*

- Dune planting at Southbank and Rivermouth to act as a buffer to sea level rises plus general weed clearing on the dunes;
  - preventative measures for erosion and dune degradation;
- Managing beach and offroad access in the dunes to prevent erosion;
- School group educational programs;
- Have noticed flooding and a change in the bar height;

- Proactive planning policy at the Racecourse development about not building on the sand dunes;
- Low tillage agriculture;
- Mixed perennials with cropping to combat extensive soil erosion;
- Farmers are moving out of livestock and into cropping;
  - but during droughts have moved back into livestock;
- More sustainable living systems using solar and passive design are increasing;
- Very effective waterwise and water saving program.

## Priorities in a Changing Climate

### Group One

- Sustainable towns and looking at the amount of packaging on products and encourage more farmers markets in town;
  - encouraging local produce given you can't even get local fish in Dongara;
- Aboriginal heritage targets need proper involvement with communities;
- Need to get a proper definition of economic and population viability;
- All LGA's to have a street tree policy that looks at waterwise trees for a changing climate that might also have carbon sequestration benefits;
- NACC could provide incentives and technical information here;
- Livestock practices and the impacts of feral animals;
- Weed management (Golden Crown, Boxthorn, Japanese Pepper) and holding land managers accountable both on farms and in town;
  - better communication of NRM messages with the broader community e.g. a weekly column in the *Midwest Times* on the 'weed of the month';
- Better cross cultural workshops with Aboriginal groups and the wider community to build relationships rather than just targets for sites;
  - use art or food as a common point;
- NACC definition of effective adaptation;
  - number of attendees going to workshops or working in groups is a better measure of engagement in NRM;
- More Local Government involvement in NRM.

### Group Two

- Assistance from NACC with sourcing and navigating funding to help with community submissions;
- Energy efficient technology for housing design;
- Water efficient solutions and recycling for both the regional and local household levels;
- Climate sensitive gardens for reuse of water;
- Better water capture and storm use;
- Town planning to incorporate greening streets in a waterwise manner for leafy, cool streets in a hot and dry climate;
- Fire resilience in our revegetation to make sure we're planting retardants and perennial trees;
- More community group actions and projects with the Shires like the Coastal Monitoring App;
- Increased opportunities for volunteers through Coastcare.

## Take Home Messages

- More education is needed in what people can do themselves to adapt to climate change rather than focusing on seawalls;
- Just do it and start adapting;
- Be strategic in how funding is allocated with a changing climate;
- Need to contribute personally and change the next generation;
- A change in thinking from 'it can be done' to 'it must be done';
- We need to constantly review, plan and implement our local activities;
- Education is required at all levels (not just digital) and especially targeting schools and practical demonstrations.

## 2.4 Moora

23 June 2014

### Participants

- Helen Watkins, Moore Catchment Council
- Rachel Walmsley, Moore Catchment Council
- Greg Burrows, NACC
- Bev Port - Louis, Mogumber
- Noel Dodd, Consultant
- Tony White, Farmer Miling
- Fiona Falcolner, DPaW / Waddy Forest LCDC
- Rodger Walker, NACC
- Emma Jackson, NACC
- Peter MacKay, NACC

### What We're Doing to Adapt

#### *Group One*

- We're already seeing the impacts on viability, especially in the Eastern Wheatbelt and the leading land managers are already adapting, they're ahead of the researchers because they've got to survive;
- Making unproductive land more productive with a whole of farm approach and the tools to adapt;
  - perennials being introduced;
  - dry seeding;
  - Variable Rate Technology;
  - soil moisture probes;
  - increased liming;
  - increasing soil moisture probes;
  - harvest grain management e.g. drying grain;
  - diversification of farm business;

- Incentivised perennials program in the past was very successful;
- Moore River Corridor project worked well;
- Buntine / Marchagee Recovery Catchment (saltbush and perennials) did a landholder survey on wind and water erosion with a 70% response that outlines a lot of current practice

#### *Group Two*

- Dandaragan has moved from stock to cropping with a drop in rainfall from 26 inches to 20 inches;
- A move away from livestock means less jobs in communities for Indigenous workers who traditionally worked with livestock;
- Farmers are using deeper bores and bigger catchment areas;
- No till farming on most farms to adapt to wind erosion;
- Less viable farms means we're trying to cut back on labour costs, so using more mechanised systems;
- More farmers using perennial pastures to take advantage of increasing summer rains;
- There is a shift in the region from agriculture to mining and it is having impacts on Indigenous cultural sites;
  - the area behind Cataby roadhouse is pegged for 14 pits in an area with significant sites.

## **Priorities in a Changing Climate**

#### *Group One*

- Farm tenure and Native Title negotiating rights for land use and groundwater in a region shifting from agriculture to mining;
  - the effects of this shift on our wetlands and cultural sites;
  - there are 57 mining tenements pending on Mogumber that will affect the land and Cultural Law;
- We have 3 significant cultural sites along the river that will be affected by a rise in river levels with more extreme weather events;
- Corporate amalgamated farms with international owners;
- \$10 million dollar purchases driving the minimum operating viability of a farm from 2,000 ha to 5,000 ha;
  - buying up water licences, large scale cropping and farms that can be used as tax deductions;
- Means 10 traditional family farms are being managed by a small team;
  - most young people are leaving farming;
- Changes in family roles and professions (e.g. the farmer looking after the kids and the land while the wife is a paramedic in town);
- Aboriginal farms that were purchased in the ATSIC days are also becoming less viable in relation to current enterprises;
- Increasing mechanisation and less labour for local workers;
- Less jobs for Aboriginal communities and increasing youth suicide;

- Aboriginal coastal sites (soaks etc.) will be lost with sea level rises;
- Support and promotion of leading landholders who are making real changes (get the scientists out of the office);
  - support from NACC and the scientific community to develop ideas from on-ground leaders and local heroes;
- Education around heritage sites to increase understanding and respect for Aboriginal culture;
  - e.g. men are not supposed to touch Christmas Trees and farmers are clearing them;
- Build a cultural understanding of the wider catchment area because farms are cautious of the unknown around heritage sites (they are happy to protect them but don't like to be boxed in by a formal process);
- Managing heritage sites needs a long term outlook not just a once off project;
- Adapt the school curriculum to provide pathways into TAFE and jobs or work experience in the region;
  - farmer to adopt a school regionally and communicate that there are future in agriculture in the region;
- Sustainable employment at all levels in rural communities leads to improvement in NRM.

#### *Group Two*

- Concerned about the management of carbon plantings e.g. invasive and grazing;
- Need to recognise the values of biodiversity to local systems and take a holistic approach;
- Need more connection between the city and country via NACC as the communications link in the region for NRM;
- Want DAFWA and DPaW to continue providing expertise and maintaining the dryland farming extension role;
- NACC to strengthen face to face relations with grower groups and better integrate their work with each other;
- NACC to hold R&D events on sustainable agriculture between the major groups;
- Spiny Rush and Broome Bush programs;
- Security of tenure (covenants) on change of ownership
  - e.g. gain funding for remnant vegetation then land use can potentially change with a change of ownership;
  - value of trees and remnant vegetation;
- Incentives for best practice;
- Banks to provide dollar recognition for carbon lands and walk the talk;
- Increase the value and provide rate incentives for vegetated lands to increase whole of farm systems;
- Opportunities relating to offset lands and how they are to be managed into the future;
  - e.g. developers buy bush and manage it in terms of firebreaks and fencing;
- Sustainable employment pathways for Indigenous communities;
- Improved NACC engagement and arrangements at the local level;

- NRM's nominated to leading catchment groups;
  - combat the NACC staff turnover by using the experience of those in the district rather than recycling new people;
- NACC needs more continuity over its programs;
- Alternative energy on-farm and off-farm (biofuels, solar and wind) given our reliance on boats;
- Mapping of underground water sources;
- Fire management regime needs more research, consideration and recovery;
  - we're burning the country in a drying climate;
  - look at Indigenous burning knowledge;
- Highest priority is wind erosion;
- Increased emphasis on soil acidity;
- Should view climate change adaptation as an opportunity not an issue;
- Need more transparency in management of DPaW offset lands.

## 2.5 Perenjori

26 June 2014

### Participants

- |   |  |
|---|--|
| • Bev Logue, Perenjori Farming Forward; | • Phil Logue, Perenjori Farming Forward; |
| • Lizzie King, NACC / Yarra Yarra;      | • Jude Cusworth, NACC / Gundawa;         |
| • Heather Legge, NACC;                  | • Rolan Deutekom, NACC;                  |
| • Rodney Butler, Farmer;                | • Peter MacKay, NACC.                    |

### What We're Doing to Adapt

#### *Group One*

- Planted saltbush for better stock management, improved summer rain use and increased productivity;
- Join farmer, research and information groups for easier access to knowledge (it can be time intensive doing the research yourself);
- Recognising and improving soil constraints through soil testing and adjusting pH levels;
- Improved water use efficiency;
  - no till farming, stock management, machinery changes, contour working and increased ground cover;
- Crop rotation and drought tolerant crops;
- Increased technology use and availability (e.g. WeedSeeker to reduce fuel and chemical inputs).

### *Group Two*

- Improved water harvesting through no till farming systems;
- Planting for saline lands (saltbush and other varieties);
- Native, waterwise gardens;
- Less sheep and a move to more cropping;
- Using different wheat breeds based on knowledge from our farming group;
- Raising the productivity of the land;
- Solar power on homes;
- Farms are amalgamating and the population is declining with people moving to urban centres and the coast for work;
  - industry is moving out of towns;
- Mining Drive-In Drive-Out didn't happen based on the mine's decision;
- Incorporating more holistic management for the farm based on broad social, environmental and financial goals.

### **Priorities in a Changing Climate**

- Assistance in exploring carbon farming through NACC and CarbonQuest;
  - would need to provide biodiversity, carbon and agricultural benefits for it to be of value to farmers;
- Educating communities on the value of biodiversity in a farming system;
- Biodiversity plantings for livestock management (e.g. mixed species for grazing to balance economic and biodiversity benefits);
- Landscape scale connectivity in biodiversity work;
- Simple education through the whole network on the value of a healthy farming system;
  - good soils and cover (100% cover 100% of the time);
- Long term holistic management;
- Biodiversity and getting communities involved not just land managers;
  - crowd-funding style approach to getting the wider population involved and building awareness that it's everyone's problem because we often only communicate to ourselves e.g. articles in the Countryman;
- NACC to play a role in building wider awareness through innovative methods like the Coastal Monitoring App;
- Better delivery of NRM information to landholders by getting consultants and agronomists on board with the messages;
- NACC partnering with a university to research revitalisation of rural communities;
  - how can it be done better with less people and services;
- Better Aboriginal involvement in NRM and maintenance of sites;
- Resilient communities including partnerships, educational pathways and higher engagement;
- More footprints from NACC.

## Carbon Maps

- Would want to see a social benefit analysis done for these maps to get an idea of the work surrounding tree farms;
- By allocating value to land based on carbon, could it alter the agricultural value of that land?
  - yes but this is a first cut guide that hopefully would be used when planning at the next level for projects like the Yarra Yarra Corridor;
- A lot of land here is showing potential for multi-use plantings that would mean we're still using the land but hopefully also gaining some biodiversity and carbon outcomes.

## Take Home Message

- More connection with each other at the regional level for increased information and knowledge;
- Better communications and sharing;
- There is scope to reduce the effects of climate change but we need to better cooperate;
- Get out there and start building action;
- Long term planning and commitment to action;
- Start doing something;
- It's all about good management practices not just adapting to climate change;
- Strategic spread of projects is needed;
- Choose language carefully, don't call it climate change adaptation and people will pick it up easier.

## 2.6 Gingin

01 July 2014

### Participants

- Sandy Pate, PRNRM / Farmer;
- David Rickson, Gingin Water Group;
- John Braid, GWG / NACC Board;
- Bob Wilson, Evergreen;
- Phil Barrett Lennard, AgVivo / Farmer;
- Kerry Fewster, Farmer;
- Rosannah Hindmarsh, Ellen Brockman Catchment Group
- Ruth Harley, Image Resources;
- Peter Davies, ex Image Resources / Community Member;
- Rodger Walker, NACC;
- Peter MacKay, NACC.

### What We're Doing to Adapt

#### *Group One*

- Groundwater and rainwater harvesting and improving water efficiency (house and property);
- Mitigation focused revegetation;
- More sustainable land use and restoration of degraded lands;

- Decreasing the stocking rate;
  - now more responsive;
  - lower core numbers;
  - buy in wet years;
  - better water use;
  - more cropping in high rainfall zones;
  - increased perennials;
- Decreased rainfall and increased fertiliser pushed a move into serradella;
- Far better pasture management and lower tillage;
- Clearing permits and approvals through LGA planning;
  - improved inputs into regional and LGA planning;
- Looking North and East to see what farmers are doing in response to climate change;
- Dry winters / late breaking season and onset means planting in July not June now;
- Strategies in summer such as agistment, perennials, windrowed pasture and standing fodder crop;
- Improved extension services and respected, knowledgeable lead farmers;
  - hard to get real change;
- Use of deep rooted perennials;
- Investments in better water management to address over extraction of groundwater

*Group Two*

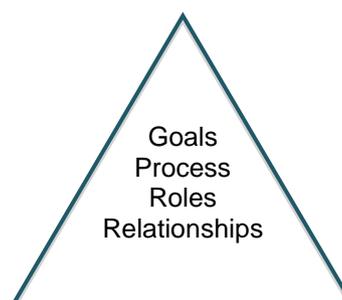
- Deep rooted fodder trees and shrubs to stop wind erosion;
- Subtropical perennials to take advantage of out of season rainfall and improve soil stability and year round production;
- Formed Evergreen in Badgingarra to focus on better pasture systems and it has spread across the region;
- Tree crops;
- Spraying for frost protection of horticultural crops using liquid polymers over the last 6-7 years;
- Spray Kaloin paste over citrus crops in summer to provide sun protection;
- Using new varieties and focusing on trials in China to adapt to changing conditions;
- New sources of rootstock from Pakistan;
- Growing ornamentals for nurseries in drier areas of Australia;
- Tunnel houses for vegetable crops;
- Better education of individual landholders through Gingin Water Group on planning documents for water supplies and piped water stock;
- Identification of alternative water supplies and better measuring use and efficiency of adaptations;
  - the irrigation industry needs more efficiency;
- Alternative crops such as Chinese Date.

### Group Three

- Switched to using saltwater for beekeeping after the Brook stopped running;
- Loss of habitat for beekeeping due to clearing and loss groundwater means we've had to move our bees further out to the East;
- We export bees to Canada as their populations are in decline but less productivity recently means we're exporting less;
- Where we put our bees changes depending on bushfires, as the first 5 years after a fire sees a loss in productivity then it becomes very productive;
- Image Resources has been planning for the groundwater drawdown on the Yarragadee and superficial aquifers that its production will create;
  - difficult to distinguish the extent to which the mine will affect the groundwater given the current local horticulture drawdown;
- Image has been taking a responsible approach to managing groundwater supplies regardless of who creates the impact;
  - also developed hydrogeological modelling for the aquifers that will be calibrated once the mine enters production;
- Avocado farm purchased particularly for its North facing aspect to avoid frosts but they have become more frequent with drier winters;
  - had to purchase \$150,000 of overhead sprinklers to combat the frost which works but then puts further pressure on the groundwater supply;
- Using more environmentally friendly chemicals;
- Experimented with perennials but they were too variable;
- Move from stock to cropping which is ok for the heavier country but some of the sandier soils are struggling.

### Priorities in a Changing Climate

- Soil health and defining sustainable land use to make sure we're gaining productivity per mm of rainfall in a drying climate;
- A focus on how this will be effectively implemented to improve on the 2005 delivery of the Strategy;
  - identify the key drivers / Agencies and how it will be measured;
  - NACC has it's own Strategic Plan that it can control however the Regional NRM Strategy sits around that and responsibility sits with a number of groups;
- Clarify the areas of responsibility for implementation and get some agreement on delivery roles;
- NACC needs to pick up on the gaps in delivery of this Strategy and focus on keeping groups accountable, not just it's own projects;
- Would like to see an increase in partnerships;
- The overall water issue in Gingin, particularly water licences and use against quotas (currently penalised for underusing water);
  - incentives for water saving on licences is a priority;
- The aspirational goals are too broad;



- Resourcing field officers for more experienced people on ground and better implementation;
  - there is too much emphasis on volunteering;
- Water licences and less power to individual holders;
- Reduced chemical use from commercial to domestic use;
- Reduce the focus on carbon farming given the poor example the SW timber industry set regarding land values and market manipulation;
  - would like NACC to work with LGA's for a really strategic approach to any carbon farming;
  - take a risk averse approach to carbon farming to avoid any adverse effects on agriculture;
- A revival of the Target Investment Plan for perennials, as it was a successful initiative;
- Increased direct seeding of plants in corridors;
- NACC to develop a more effective approach to delivering on the Regional NRM Strategy that sees better communication and partnerships with LGA's and community groups (e.g. NACC>LGAs>Community / Farming Group);
  - need to ensure local issues are not falling through the gaps by creating NRM partnerships with LGAs as core business;
- For Gingin, carbon capture is as much about maintaining the natural habitat as it is planting;
- Where does the money come from and is 2020 too close?
- A clear definition of the size of land managers;
- NACC to work more effectively with community groups to achieve targets given the decrease in State Agency funding;
- NACC to focus on using more industry best practice guidelines and quality assurance tools for achieving NRM targets, as most horticultural businesses are required to do already;
- NACC to address the move from an NRM focus towards an economic development (agriculture and horticulture) focus;
  - move back towards the NRM space;
- NACC to separate core responsibilities from strategies where they will play the support, lead or minor role and effectively communicate those positions.

### Take Home Message

- |                        |                  |
|------------------------|------------------|
| • Effective execution; | • Interesting;   |
| • Very informative;    | • Provocative;   |
| • Effective;           | • Inspiring;     |
| • Good people;         | • Good feedback. |

### Participants

- Jan Richards, Ledge Point CoastCare;
- Anita Jarvis, Friends of Lancelin Coast;
- Heather Hatch, Friends of Lancelin Coast;
- Dianne Edgar, Friends of Lancelin Coast;
- Philippa Schmucker, NACC;
- Peter MacKay, NACC.

### What We're Doing to Adapt

#### *Group One*

- Using energy saving light globes in homes;
- Revegetation of sand dunes at Ledge Point to counteract storm surge and sea level rises;
- Planting native vegetation to counteract bare sand on the farm at Wanerie;
- Moving from lawns to native gardens in homes;
- Ledge Point CoastCare has been delivering community education through NACC funded workshops and the Coastwest project;
- Held a mobile muster and the local Scouts came to plant 1800 natives;
- Ledge Point CoastCare was sponsored to send a representative to a conference on local provenance plus we took part in a NACC funded workshop on native propagation;
  - our planting success on the dunes has gone from 60% to 80%;
  - we also provide local plants as incentives for volunteers to take home and use in their gardens;
- Coastal groups have been getting school groups involved in WRACK walks and seabird projects on Lancelin Island;
- Friends of Lancelin Coast gained \$250,000 of funding for habitat revegetation on Lancelin Island for the Lancelin Island Skink;

#### *Group Two*

- Dune revegetation and active dune retention through defending the systems with signage and fencing;
  - we take a strategic approach to focusing on one area that assists in retaining other dune systems;
- Photo monitoring and collecting data to look at changes over time;
- Citizen Science Programs for monitoring sea temperatures, revegetation and bird monitoring and protection;
  - through a Conservation Council of WA program with Dr Nick Dunlop;
- Education and community participation at the Coastal Festival and through the school;

- Community driven interaction with other CoastCare and Indigenous groups at a regional level to network, share and learn;
  - have networking meetings and did a site visit to Green Head;
  - an outcome from this networking is the Leeman coastal group forming;
- Friends of Lancelin Coast advocates for the natural environment and the group has adapted over time to be vigilant and consistent.

## Priorities in a Changing Climate

- Coastal hazard and risk assessments for the entire coast;
- Better involvement of Government in encouraging sustainable ratings for new homes which also sets the tone for established homes;
- Council incentives for better waste management and alternative energy;
- More education for land managers in sustainable practices;
- Processes to better work through the LGAs as a community group and avoid the human element of Council and staff.
- More networking of small communities on the CoastCare projects regionally;
  - better linking into national events and initiatives like 'Clean Up Australia Day';
  - more open days and promotional events;
- NRM education for Elected Members and LGA's to build better awareness of the need to adapt to climate change;
- Better engagement with LGA's around NRM and climate change adaptation responsibilities;
  - the NRMO liaison level works well as a conduit between LGAs and community groups;
- Assistance for better self promotion of community groups but not NACC driven;
  - to help them market and promote the work they do;
- Access to good tools like Management Plans on the NARVis website;
- Maintaining the natural environment and ecosystem, particularly coastal vegetation on dunes;
- Marine biodiversity;
- Limited clearing and more parkland / buffer zones between developments;
- Less urban development and ocean bound sewerage systems on bush blocks;
- Education across the region on sustainability and management with more money spent on research;
  - invest in the children and invest in nature;
- Biosecurity and bushland revegetation mapping and management tools.

## Take Home Message

- |                         |                                  |
|-------------------------|----------------------------------|
| • Adaptation is key;    | • Education and perseverance;    |
| • Active communication; | • Persistence and Participation. |

## 2.8 Aboriginal Landholders

### 2.8.1 Mogumber

- Noel Dodd
- Peter MacKay
- Bev Port-Louis
- Greg Burrows
- Emma Jackson
- Philippa Schmucker

#### Discussion

- Currently looking at heritage sites and NRM funding for on-country work to remove Weeds of National Significance and some strategic revegetation;
- The current approach lacks continuity as these sites need work every 12 months;
- At the moment we need money for fencing the river as the farmer opens the fences for stock to get water;
  - under the Rivers & Wetlands Program there is funding for alternate watering points and pumps;
- Mogumber would need a proper water plan to identify alternate water sources and attract funding;
- We've come up with ideas before and received funding but the funders have hired contractors;
- The tenure situation is difficult with ALT, SWALSC and DAA all involved;
  - there was also an Advisory Committee for Mogumber that created a fairly realistic Draft Interim Plan for Mogumber but it was blocked politically;
- We've concentrated on the cemetery site in terms of clean-up maintenance and planting native vegetation;
- NACC can fund:
  - fencing of remnant vegetation under the Hidden Treasures Program;
  - strategic water funds under the Rivers & Wetlands Program;
- Farm (Water) Plans under the Sustainable Agriculture Program;
- There are coastal sites at Roundpool and Elbow that would be a priority to protect from climate change;
- The biggest concern with climate change is rising river levels running through Mogumber;

#### Agreed Outcome

Let's focus on what we can achieve easily for Mogumber and then build from there:

1. Sit with the Lessee, Greg Burrows & Philippa Schmucker from NACC and Noel Dodd & Bev Port-Louis from Mogumber to look at the funding behind the Rivers & Wetlands and Hidden Treasures Programs;
  - take a proposal to DAA for any fencing etc;
2. Look at the cultural sites and a forward look for adapting to climate change;
  - consider developing funding requests for protecting these sites;
3. Develop a partnership approach with a simple MoU for working together to bring some surety to the process for NACC;
  - focus on activities to strengthen the Mogumber group and pathways to education and jobs.

## 2.8.2 Mt View

- Gaile Mallard
- Tim
- Rachael
- Emma Jackson
- Peter MacKay
- Greg Burrows

### Discussion

- We had DAFWA come up recently for the erosion issues on the property because it's been a dry past couple of years in the whole area;
- We've got 2,000 head of Mt View sheep that we're looking at selling in the future;
- The fencing along the Murchison River is down in areas due to goats and flooding;
  - need to protect the river with more fencing for erosion;
- Fires and goats are coming through from the National Park;
- We've fenced the cropping land off from pasture;
- We have a Farm Plan and we're working with Tony from DAFWA's Indigenous Landholder Service program;

### Agreed Outcome

NACC to provide more information and continue discussions on:

1. Working with DAFWA to look at fencing funding along the Murchison River;
2. Sustainable Agriculture Program to conduct soil pH tests on Mt View;
3. Protecting cultural sites on the river that are not on the farm by building it into fencing plans;
  - will need to talk to Dad on this one;
4. Carbon planting in a few paddocks that might be suitable because we are trying to diversify the farm at the moment;
5. Protecting coastal sites and freshwater springs near the Kalbarri inlet from climate change;
6. A long term relationship with NACC to develop learning pathways for community.

### 2.8.3 Bundybunna

- Leedham Papertalk
- Greg Burrows
- Emma Jackson

#### Discussion

- We're putting in another trial horticultural crop of courgettes, kale and coriander;
- Looking at new tanks for the horticultural block;
- Received an offer from a neighbouring farm for \$500,000 for 11,000 acres;
  - trying to pull the wool over our eyes;
- Getting the corporation's financial issues fixed up;
- We'll be working more closely with Tony at DAFWA in the future;
- The fencing for the Irwin River which came from a MIG grant isn't completed at some of the washouts and around some of the remnant vegetation;
- Did some carbon plans with Mission Australia but nothing happened;

#### Agreed Outcome

NACC can continue to assist with:

1. Help with getting funding for fencing around the creeks on the south branch of the Irwin River;
2. Sandalwood plantings as a long term project;
3. Designing any remnant vegetation fencing to create wildflower blocks for tourism opportunities;
4. Carbon plantings in some of the revegetation areas;
5. Protection of some of the waterholes along the Irwin and a camping cave to the East given flooding events are an issue.

### 3. Feedback on Targets in Detail

Participants in each workshop provided feedback on the Draft Targets below by:

- Highlighting their highest priority targets whereby:
  - **Red** is high priority;
  - **Yellow** is medium priority;
  - **Green** is low priority; and
- Adding any extra priority targets or strategies they would like included in the Regional NRM Strategy.

Aspirational Goals	Targets (5 year)	June / July Consultation Comments		
<p>Production systems in the NAR are resilient, diverse and proactively managed utilising environmentally sensitive practices.</p>	<ul style="list-style-type: none"> <li>• <b>75% (X) of agricultural land managers undertaking sustainable land use practises by 2020.</b></li> <li>• <b>50% of cleared Agricultural land (X ha) managed using sustainable land use practises by 2020.</b></li> </ul> <p>This sustainable management includes the whole farm management of the following issues:</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> <li>- <b>Wind erosion</b></li> <li>- <b>Water erosion</b></li> <li>- <b>Surface water quality</b></li> <li>- <b>Soil compaction</b></li> <li>- <b>Soil organic carbon</b></li> </ul> </td> <td style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> <li>- <b>Salinity</b></li> <li>- <b>Non-wetting soils</b></li> <li>- <b>Acidity</b></li> <li>- <b>Pests, weeds &amp; disease</b></li> </ul> </td> </tr> </table>	<ul style="list-style-type: none"> <li>- <b>Wind erosion</b></li> <li>- <b>Water erosion</b></li> <li>- <b>Surface water quality</b></li> <li>- <b>Soil compaction</b></li> <li>- <b>Soil organic carbon</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>Salinity</b></li> <li>- <b>Non-wetting soils</b></li> <li>- <b>Acidity</b></li> <li>- <b>Pests, weeds &amp; disease</b></li> </ul>	<ul style="list-style-type: none"> <li>• Access other research and don't waste NACC / people's time;</li> <li>• Better support for information access and management;</li> <li>• Agronomists and farming consultants better engaged in playing a role in information access;</li> <li>• More drought planning and proofing;</li> <li>• Encouragement of whole farm plans;</li> <li>• Need a target metric for productive use of all arable land in the region;</li> <li>• Biodiversity included in sustainable agricultural targets;</li> <li>• Big picture - reduce bare soil and increase healthy land;</li> <li>• All landscape issues but no tenure approaches included?</li> <li>• Include profitability measures as a form of measurement;</li> <li>• Less subdivision of agricultural land for hobby farms;</li> <li>• Target on holding landholders more responsible for their practices;</li> <li>• LGA's are keen to undertake NRM but need guidance on how to improve the landscape with minimal NRM funds and capacity;</li> <li>• Target for increasing work with local farmer groups as people are more likely to respond to them rather than large organisations like NACC;</li> </ul>
<ul style="list-style-type: none"> <li>- <b>Wind erosion</b></li> <li>- <b>Water erosion</b></li> <li>- <b>Surface water quality</b></li> <li>- <b>Soil compaction</b></li> <li>- <b>Soil organic carbon</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>Salinity</b></li> <li>- <b>Non-wetting soils</b></li> <li>- <b>Acidity</b></li> <li>- <b>Pests, weeds &amp; disease</b></li> </ul>			

Aspirational Goals	Targets (5 year)	June / July Consultation Comments
		<ul style="list-style-type: none"> <li>• Increase the importance of primary producers and provide more subsidies;</li> <li>• Strategy for managing underutilised or non productive land (e.g. absentee owners)</li> <li>• Increase the soil health potential, for increased productivity per mm</li> </ul>
<p>Biodiversity and ecosystem integrity are maintained and improved at a landscape scale.</p>	<ul style="list-style-type: none"> <li>• 20% of defined corridor areas (yet to be defined) protected and revegetated by 2020.</li> <li>• 2000 ha of native vegetation (not on reserves) protected 2020.</li> <li>• Active management of fire regimes in areas of native vegetation</li> <li>• X ha of priority species habitat actively managed</li> <li>• 20 000 ha of riparian vegetation actively managed</li> <li>• 500 ha of coastal and Island vegetation protected and enhanced by 2020</li> <li>• Marine ecosystems and fish stocks maintained at current levels of quality and health.</li> <li>• Undertake 4 projects to support marine research by 2020.</li> </ul>	<ul style="list-style-type: none"> <li>• Encourage stepping stone habitat value;</li> <li>• Incorporate species from drier areas in revegetation to adapt easier;</li> <li>• Include grazing and forage planting for biodiversity;</li> <li>• Beware the risks of reconnecting landscapes (e.g. travel routes for foxes);</li> <li>• Strategy for security of remnant bush revegetation with any tenure changes;</li> <li>• More low intensity burning;</li> <li>• More on-ground management rather than just Management Plans;</li> <li>• Direct seeding of plants in revegetation;</li> <li>• Strategy to better understand the effects of clearing on ecosystems;</li> <li>• Better include LGA's in biodiversity strategies and linkages;</li> <li>• Competent corridors are the key not small areas of random bush;</li> <li>• Corridors to reflect the transition to a drier climate and allow for adaptation over time.</li> </ul>
<p>Animal and plant pests (vermin and weeds) and diseases are effectively managed on a regional scale.</p>	<ul style="list-style-type: none"> <li>• 75% of land managers engaging in coordinated management of Agricultural pests and diseases</li> <li>• X ha of native vegetation with a weed management plan.</li> </ul>	<ul style="list-style-type: none"> <li>• Employ experts to coordinate;</li> <li>• Increase the knowledge of invasive weeds not currently listed.</li> </ul>
<p>Communities in the NAR (urban and rural)</p>	<ul style="list-style-type: none"> <li>• 30 000 ha of land utilised for suitable carbon bio-sequestration.</li> </ul>	<ul style="list-style-type: none"> <li>• Include town / non farming communities;</li> <li>• Livestock target relating to diversity and resilience on farms;</li> </ul>

Aspirational Goals	Targets (5 year)	June / July Consultation Comments
are able to maintain economic and population viability, through effective adaptation to a changing climate.	<ul style="list-style-type: none"> <li>• Coastal hazard and risk assessment undertaken for all coastal communities by 2020.</li> <li>• All coastal infrastructure maintained to continue fishing practices</li> </ul>	<ul style="list-style-type: none"> <li>• How does carbon sequestration increase community viability;</li> <li>• Partnership with UWA to research revitalisation of rural communities;</li> <li>• Strategy to stop the decline in population;</li> <li>• Involve the Green Army, encourage local employment and provide subsidies for farmers employing them;</li> <li>• Strategy for maintaining population with increasing amalgamation, overseas ownership and absentee landholders;</li> <li>• Strategy for coastal erosion;</li> <li>• No carbon planting on productive land;</li> <li>• Strategy for job security through the budget cycle.</li> </ul>
Aboriginal and cultural heritage is protected and valued by the wider community	<ul style="list-style-type: none"> <li>• Management of X-sites of cultural and heritage significant by 2020.</li> <li>• Collection and storage of X traditional knowledge stories by 2020.</li> </ul>	<ul style="list-style-type: none"> <li>• More communication and awareness raising with community on sites;</li> <li>• X number of Aboriginal people working on country</li> <li>• Long term positions e.g. Rangers for Aboriginal people;</li> <li>• Continuation of knowledge in school subjects;</li> <li>• Needs local management for better ownership;</li> <li>• Community workshops for increased knowledge in the wider community.</li> </ul>
The community has a sufficient level of knowledge, ability and willingness to contribute to effective NRM.	<ul style="list-style-type: none"> <li>• Increased technical capacity of the region to sustainably manage natural resources.</li> <li>• Encourage and support sustainable urban design and practices including: stormwater management, urban planning, native garden, alternative energy sources and water usage, waste management and transport. <ul style="list-style-type: none"> <li>○ 20% of homes in urban areas have native gardens by 2020</li> <li>○ 10% decrease in waste to landfill</li> <li>○ 10% decrease in scheme water</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Limited clearing, more parkland and buffer zones for development;</li> <li>• Encourage recycling schemes;</li> <li>• Strategy for communicating better using local NRM groups – don't lose what already know;</li> <li>• Design of local houses to include better setbacks from the ocean;</li> <li>• All LGA's to have street trees and verges maintained in accordance with sustainable gardening practices;</li> <li>• Mandatory solar, wind and wastewater systems on new homes.</li> </ul>

Aspirational Goals	Targets (5 year)	June / July Consultation Comments
	<p>usage</p> <ul style="list-style-type: none"> <li>○ 70% of new houses have an X star sustainability rating.</li> <li>• Increased Aboriginal participation and employment in NRM by X by 2020 – set baseline</li> <li>• Local sources of marine debris identified by 2020</li> </ul>	
<p>Water resources are valued and support water dependent communities and ecosystems.</p>	<ul style="list-style-type: none"> <li>• Allocation of water resources does not exceed sustainable levels.</li> <li>• Water resource allocation plans are developed through community consultation.</li> </ul>	<ul style="list-style-type: none"> <li>• Over-allocation review needed for all water licenses;</li> <li>• Strategy to encourage sustainable water use;</li> <li>• Strategy for the protection of drinking water and horticulture industry against mining groundwater drawdown</li> <li>• Strategy to address threats to water supplies;</li> <li>• Encourage Effective water use strategies and waterway systems;</li> <li>• Improve knowledge of local hydrogeology;</li> <li>• Needs a complete review of water license issues and implementation;</li> <li>• Identify priority water uses and establish rules for reclaiming allocations;</li> <li>• Incorporate compensation and user pays principles.</li> </ul>

## 4. Next Steps

### 4.1 Feedback Overall

Overall, the stakeholders consulted are aware and accepting of the climate change scenarios for the Northern Agricultural Region and consider the outlook of a warmer, drier climate with more extreme weather events and sea level rises, as a continuation of the environmental trends they have been experiencing as land managers over the last thirty years.

The majority of stakeholders have been adapting their practices and projects to a changing climate for over a decade and see these management changes as necessary adaptations to protect their livelihoods linked to the natural resource base, rather than 'climate change adaptation' specifically.

Given the broad range of agricultural, coastal, biodiversity and community groups consulted, the NRM priorities for each stakeholder group are understandably linked to their specific focus or local issues. However, all groups expressed a need to focus on:

- Ensuring the productivity and livelihoods of primary producers are protected;
- Maintaining and building viable communities;
- Educating land managers and the wider community of the need to adapt to climate change at the ground level; and
- Practical, efficient support for the work already being done by existing local groups to manage natural resources.

In terms of identifying priority landscapes for carbon mitigation and adaptation projects, the stakeholders are generally wary of the current carbon farming situation and are requesting more information on how any initiatives would provide a multiple benefit outcome for their businesses or communities.

Overall, the stakeholders are supportive of the strategic directions being taken in the Draft Aspirational Goals and Targets. The key message from all groups is that a greater emphasis needs to be placed on the successful implementation of the Strategy including:

- Clearer identification of the roles and responsibilities between the key organisations for implementing the Strategy;
- Greater Local Government engagement in NRM and climate change adaptation responsibilities; and
- Increased on-ground engagement between NACC and subregional grower and community groups.

Similarly, the overall message from consultations with Aboriginal land managers is that practical, on-ground fencing and revegetation projects for improving the productivity of properties whilst protecting any natural assets is the key to improving NRM engagement with these stakeholders.

## 4.2 Recommended Process Moving Forward

This first round of consultation has resulted in a range of rich and informative comments that will provide an important source of grassroots input and priorities for adapting to climate change in the years to come.

From a process perspective:

- There was difficulty gaining workshop participation from some of the larger Subregional Groups and key stakeholders (West Midlands, Leibe, MIG);
- A number of participants have expressed concerns about the amount of NACC planning workshops they attend in comparison to successful implementation of the Strategy and on-ground activities;
- Any further consultation on the content of the Strategy will be repetitive for the participants who did attend and will provide little additional input in developing the Strategy;
- Additional surveys (written or online) are unlikely to elicit any further quality input;
- The majority of participants consider the next step is to transition to effectively implementing the Strategy by gaining clarity on delivery responsibilities and how the Strategy can assist land managers and key organisations to implement practical, on-ground adaptation initiatives.

The following process for the second round of consultation is recommended.

6. The Draft Regional NRM Strategy is developed by NACC in the NARVis format.

### *Useability of the NARVis Tool*

7. In lieu of the scheduled four Subregional Workshops on the Draft Strategy:
  - innovative information sessions on using NARVis as a funding application tool are held in conjunction with existing subregional events such as field days that will ensure greater participation and exposure,
  - participants are encouraged to complete a simple feedback form during the events on how to improve the practicality and usefulness of the tool,

### *Effective Implementation of the Strategy*

8. A highly focused workshop is held with the CEO's, Board members and relevant managers of the key stakeholder groups involved in implementing the Strategy (including Subregional Grower Groups, Local Government Authorities and Government Agencies) to focus on:
  - feedback on the Draft Strategy,
  - agreement on implementation roles and responsibilities,
  - improving on-ground engagement between NACC, key stakeholders and the Regional Strategy,
  - agreement on a practical path forward,
9. The existing networks of the NACC NRMO's and Sustainable Agriculture Team are used to gain improved participation in the workshop.

### *Improving NACC engagement on-ground*

10. A one day interactive training workshop is held with the NACC NRMO's (plus Subregional Group staff if appropriate) that focuses on practical facilitation / extension training for participants and discussion on how to improve on-ground engagement and implementation of the Strategy;
11. NACC uses the feedback from the information sessions and workshops to:
  - improve the usability of NARVis as a community tool, and
  - develop the Final Strategy and a clear Action Plan for driving the effective regional implementation of the Strategy.

The recommended roles for this second round consultation process are:

- NACC to develop the Draft Regional NRM Strategy and NARVis;
- NACC staff to attend the information sessions at field days, introduce NARVis to participants and collect feedback;
- Tuna Blue to develop the information session materials including:
  - NARVis information sheet,
  - NARVis informational video (to also be used in later promotions), and
  - feedback forms,
- Tuna Blue to develop a video on the field day information sessions;
- Tuna Blue to disseminate and report on feedback from the information sessions;
- Tuna Blue to facilitate and report on the high level implementation workshop;
- Tuna Blue to facilitate and report on the NRMO implementation workshop;
- NACC to update and finalise the Regional NRM Strategy.