NSW GOVERNMENT Office of Environment & Heritage

Integrated Regional Vulnerability Assessment: North Coast of New South Wales

Volume 2: Priority Sector Workshops – Summary Findings

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1. Introduction

From February to April 2014, the Office of Environment and Heritage conducted six sector-based workshops in the North Coast region to assess the likely impacts and vulnerabilities of these sectors to climate change. A total of 95 participants were involved from 42 different government organisations involved in providing North Coast based services (local, state and federal).

The workshops addressed the priority sector areas for the North Coast that had been identified by the steering committee. The five priority sectors were:

- industry and economy
- landscapes and ecosystems
- settlements and infrastructure
- emergency management
- human services.

Workshops were based on a participatory and systems thinking approach to enable workshop members to conceive of their role and organisation as a part of the wider regional dynamic.

Participants were presented with the projected changes to climate for the North Coast region and then asked to collectively construct influence diagrams to show climate change impact pathways and relationships with other sectors.

Having established the context for potential changes to business operation and sectoral function as a consequence of these impacts, adaptive capacity was assessed. To determine sectoral indicators of adaptive capacity, the following questions were asked:

Given what we know are the likely effects of climate change in this region, for your sector:

1. *What must change to service the community?*
2. *What is needed to make change happen?*
3. *Where is change needed most/least?*
4. *Who can make change happen?*

From this discussion qualitative indicators of adaptive capacity were identified under the following categories: human, social, natural, physical and financial. The following sector reports present the outcomes of these workshops and background information about each of the sectors.

It is important to note that the nature of the questioning used in the process deliberately seeks to identify the factors that are perceived by the participants to contribute to the sectoral and regional vulnerability. Because of this focus on vulnerability, and the absence of the balancing context of what makes the region resilient, the content may appear to be overly critical. The process also seeks to draw on the tacit knowledge of staff in the region, so some of the views and perceptions of individual participants may be contestable on a purely factual basis. It is important that these views not be discounted however, for their influence either for or against action in the region remains.

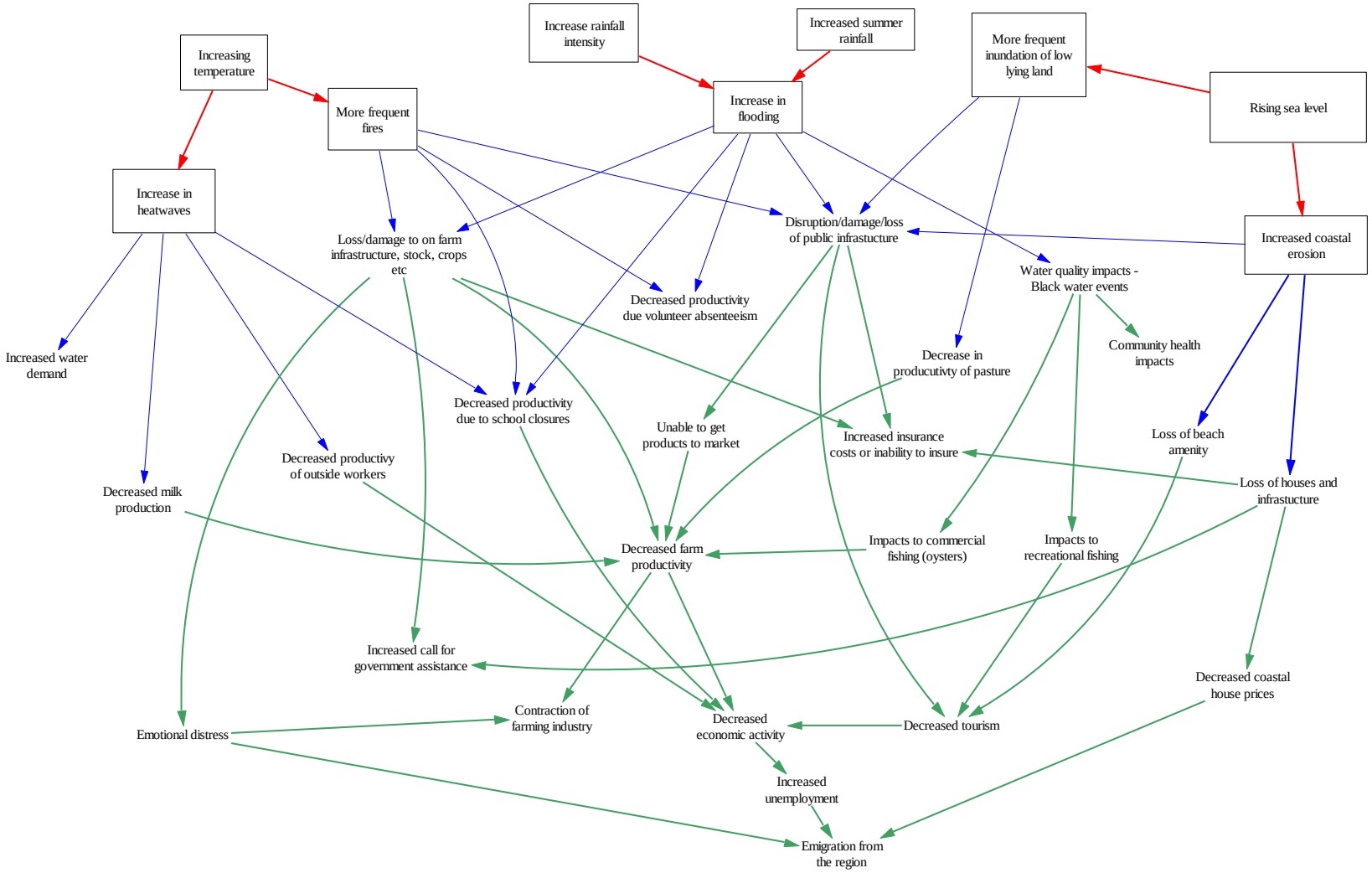
2. Industry and economy sector

2.1 Workshop participants

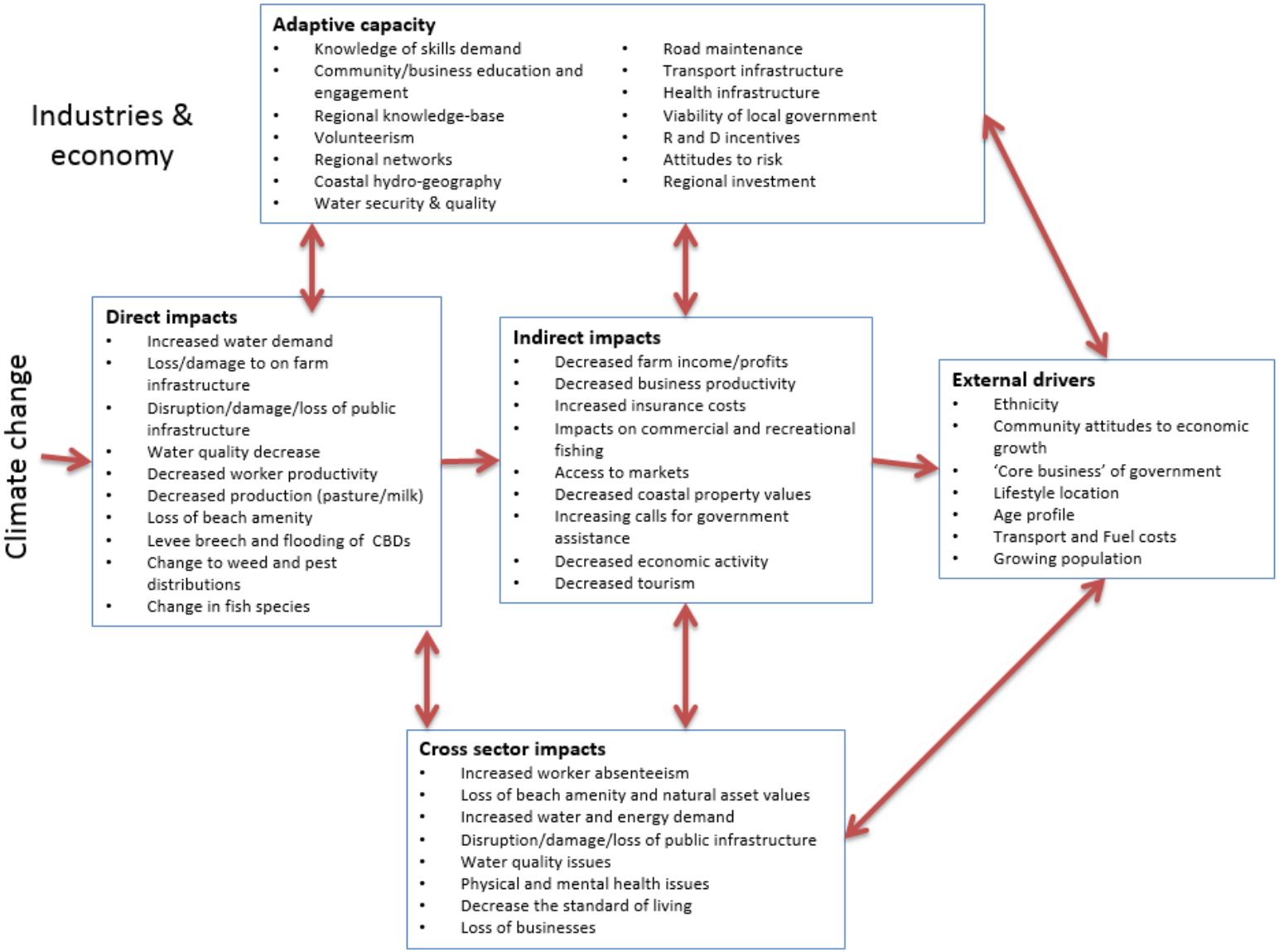
This workshop was held at the Coffs Harbour Showground on 20 and 21 February 2014, with attendees from the following organisations:

- Department of Premier and Cabinet
- Department of Primary Industries
- Department of Trade and Investment, Regional Infrastructure and Services
- Coffs Harbour City Council
- Northern Rivers Local Land Services
- NSW Forestry Corporation
- Environment Protection Authority
- Office of Environment and Heritage

2.2 Findings: Impact pathways for the industry and economy sector



2.3 Findings: Vulnerability diagram for the industry and economy sector



2.4 Findings: Key vulnerabilities and adaptive capacity of the industry and economy sector

The following indicators and descriptions are adapted from the discussions between workshop participants at the industry and economy workshop.

Indicator	Capacity to adapt		
Human			
Skills demand	**What does the indicator mean?** Greater knowledge of region's demand for skills is needed.	**What is stopping/promoting change?** *Constraints* • Highly diversified regional industry profile • Low industry growth • Many small businesses with limited requirements for additional 'up-skilled' employees • Seasonal nature of many jobs, e.g. fruit picking (blueberries) and tourism • Private enterprise requires service demand before it responds (problem must exist before solution provided) *Enablers* • Intelligence on the future services of the region	**Where is change needed most/least?** • Work with the business community, education providers and the region's youth to improve understanding of the region's current and future skills demand and identify pathways to employment that support business and retention of youth • Explore ways to attract a skilled workforce to the region • Provide information to allow consideration of increased costs of doing business under future climate • Ensure support for the ancillary services of the health system as this is a big industry sector for the North Coast
Community education and engagement	**What does the indicator mean?** Community education and engagement on impacts and adaptation to climate change should recognise the variable levels of education and ethnic diversity of the community.	**What is stopping/promoting change?** *Constraints* • Region has highly variable levels of education and, in some areas and industries, high ethnic diversity *Enablers* • Some areas on the North Coast have very high levels of education and engagement on issues of climate change (e.g. Byron Bay on the Far North Cost, Bellingen on the Mid North Coast)	**Where is change needed most/least?** • Southern parts of the region have an education level lower than northern parts • Need to harness climate change-engaged communities and enlist support in climate change adaptation action • Need to promote the concepts of regional adaptability, flexibility and willingness to change as positive community attributes through the education curriculum • Information that targets the culturally and linguistically diverse in the community

Indicator	Capacity to adapt		
Regional knowledge-base	**What does the indicator mean?** There is a need to grow the region's understanding of its knowledge needs and focus regional effort to build the knowledge base. This applies to both general needs and those specific to climate change impacts and adaptation.	**What is stopping/promoting change?** *Constraints* • Knowledge deficits are emerging from recent changes in the provision of government services to the agriculture sector • Loss of regional skills in agriculture due to perceived decline of its importance to the region • Reduced capacity to deliver extension to the region's farmers on production, natural resource management (NRM) and responding to climate change • Lack of succession planning in small businesses *Enablers* • Some industries on the North Coast are actively seeking to build their resilience (e.g. dairy farming)	**Where is change needed most/least?** • The growing tertiary education sector could support the region's strategic knowledge needs in growth sectors (health and social systems) • Ensure programs in TAFE, universities and schools include discussion of regional issues, climate capabilities and capacity • Need to recognise that agriculture is an important sector of the regional economy and will need support to adapt • Need to promote partnerships and collaboration across industry sectors in the region that can address climate change risks and adaptation
Social			
Ethnicity	**What does the indicator mean?** The ethnic mix of the regional population has changed over recent years with clear benefits and challenges for regional capacity to adapt.	**What is stopping/promoting change?** *Constraints* • Growing refugee population on the North Coast, which is a more vulnerable group • Cultural differences associated with the increased diversity of ethnic groups can lead to less community cohesion • Cultural backgrounds can influence how legislation and regulations are interpreted (particularly environmental) *Enablers* • Region's banana and blueberry industries have persisted due to close family ties and cooperative arrangements in their farming practices	**Where is change needed most/least?** • Refugee populations are more localised in the large centres of Coffs Harbour and Lismore • Consider cultural background as a factor in government engagement processes with ethnic minority groups

Indicator	Capacity to adapt		
Volunteerism	**What does the indicator mean?** Resilience is built on a foundation of reciprocity and helping each other out enhances community resilience. The region needs to grow its volunteer base.	**What is stopping/promoting change?** *Constraints* • The ageing and retiree population of the region is reducing the availability of replacement volunteers • The current generation of volunteers are not being followed by Generation Y and X • Volunteerism is becoming harder through increasing complexities of regulation *Enablers* • Australia provides a model to the world for transferring emergency management into volunteer services	**Where is change needed most/least?** • Need to seek ways to promote volunteerism that are tailored to the region's changing demographics and recognise some of the current deterrents
Community attitudes to economic growth	**What does the indicator mean?** There are different aspirations in the region regarding economic growth and this decreases community cohesion.	**What is stopping/promoting change?** *Constraints* • Some areas on the North Coast oppose local growth • Exploiting coal seam gas (CSG) on the North Coast has been contentious, affecting community cohesion	**Where is change needed most/least?** • Need to acknowledge and promote how healthy environments are important underpinnings of the social and economic wellbeing of the region
'Core business' of government	**What does the indicator mean?** Need to ensure climate change is considered to be 'core business' for all government agencies	**What is stopping/promoting change?** *Constraints* • Change in government agencies • Reduction in range of government services offered • Community is indifferent to government cutbacks, particularly in public sector employment, until their services are affected, which is too late • Dealing with climate change not seen as a responsibility *Enablers* • Local government and Local Land Services can influence local scale change	**Where is change needed most/least?** • State government could improve its communication on what public sector changes mean for the services it delivers to the community • Define the role of state government in climate change adaptation • Recognition that managing climate change risks to government assets and services is the responsibility of all agencies • Maintain and expand incentives to promote sustainability of energy, water and waste • Promote discussion of adaptation pathways with the community

Indicator	Capacity to adapt		
Regional networks	**What does the indicator mean?** In general regional networks are strong but there are regional differences.	**What is stopping/promoting change?** *Constraints* • Changes in state government agencies mean it isn't easy to identify who to engage with *Enablers* • Good social connections exist between North Coast communities and local governments • Strong networks in the north driven by private enterprise and well-educated communities with high levels of environmental awareness, both supported by government	**Where is change needed most/least?** • Resource strategic, meaningful efforts and dialogue to connect state government activities and services to local government and community initiatives • Good networks are found in the northern areas, e.g. Sustain Northern Rivers and the Byron Bay Innovation Hub
Natural			
Lifestyle location	**What does the indicator mean?** Lifestyle lures people to the North Coast and is driving a number of the region's demographic and development trends (influx of retirees driving ageing).	**What is stopping/promoting change?** *Constraints* • Lower availability of full time work than other regions in NSW • Retirees with limited social and family networks in the region • Subdivision of rural lands to support high population growth and affordable housing *Enablers* • Region appears to be resisting rural decline trends seen elsewhere in NSW • Family aged people are coming to the region for its amenity and suitability for raising a family • Many people adopt a flexible part-time 'splitter-splatter' work pattern which is highly adaptive	**Where is change needed most/least?** • Lismore, in the Northern Rivers area is thriving through a combination of 'cute houses and critical mass' • Subdivision pressure is high in rural communities like Alstonville and Murwillumbah • Flexible part-time working arrangements appear to be most developed in the Northern Rivers sub-region and may not extend to the mid north coast and hinterland, in part due to geographical variation in the industries found throughout the region

Indicator	Capacity to adapt		
Coastal hydro-geography	**What does the indicator mean?** The region is geographically unique in NSW because it is made up of a long, narrow coastal strip rising steeply to an escarpment that forms part of the Great Dividing Range. Because of the region's relatively high rainfall, the coastal strip is dissected by a series of short rivers and steep valleys which are subject to frequent, generally short-duration riverine flooding and coastal inundated from the sea.	**What is stopping/promoting change?** *Constraints* • Acid sulfate soils are common and impact infrastructure and housing sites in the region • Communities are unlikely to be well adapted to longer or 'catastrophic' events • Insurance which is either unaffordable or not available in high risk flood zones • For businesses, the failure of a flood warning to eventuate means lost trade as businesses temporarily close down • Damage to and closure of roads means that communities can be isolated and people may attempt to find alternative routes with associated safety issues • Property values in flood zones and in isolated communities may be affected due to delays in making repairs • Normalising extreme events as part of industry operations is very difficult to achieve; people can't normalise the $200,000 cost of a flood when they are stressed emotionally, financially • Significant legacy effects exist from past coastal development *Enablers* • The community is highly responsive to flood warnings but the expectation that 'it will come up and go down quickly' may not hold under climate change • Up-stream communities are conscious of the weather, and likelihood of heavy rain triggers self-reliant behaviours	**Where is change needed most/least?** • Need to design and build innovative and effective infrastructure that has capacity to withstand flooding • Continuous improvement in accuracy of early warning systems for flood and promote community access and use of river height and flood warning services • A need to ensure that planning caveats for designated flooding areas and mitigation requirements for development are implemented • Promote important messages about climate and natural disaster risks to the community so they can take action and make informed decisions

Indicator	Capacity to adapt		
Water security and quality	**What does the indicator mean?** There is a growing water security issue on the North Coast and a need to manage the drivers of poor water quality.	**What is stopping/promoting change?** *Constraints* • Poor community understanding of the water security concerns on the North Coast • Growing population is increasing the demand for potable water • Region is not used to managing for drought • Many communities not connected to reticulated water systems – rely on water tankers during drought • CSG has raised concerns about the potential impact on groundwater supply and quality • Lack of water recycling options • Changes to water security have the potential to impact big employers in the Northern Rivers sub-region (abattoirs) • Water quality in rivers is already an issue and it will likely become worse with continued development in catchments *Enablers* • Some sectors, such as dairy, have invested heavily in infrastructure that supports water efficiency. In the horticulture sector, tree crop enterprises are relatively efficient water users	**Where is change needed most/least?** • Continue efforts to educate the community about water recycling • Improving water quality monitoring – water quality in rivers • Expand incentive programs for the installation of rainwater tanks on all new properties • Existing licences to pollute do not provided sufficient incentive to reduce pollution • Work with employers such as abattoirs, to improve their water use efficiency
Physical			
Road maintenance	**What does the indicator mean?** The geography of the region (see natural capital) with steep topography close to the coastline affects the maintenance and repair of the region's roads following storms. Landslips and rock slides are common after storms and floods.	**What is stopping/promoting change?** *Constraints* • Local government resources prevent a repair and improve strategy for local roads following natural disasters • The repair process often takes place over extended timeframes, prolonging impacts	**Where is change needed most/least?** • Local government needs to be in a position where it can implement a 'maintain and improve' funding regime for flood damaged roads

Indicator	Capacity to adapt		
Transport infrastructure	**What does the indicator mean?** Better use and investment in major transport infrastructure (regional airports, Pacific Highway and northern rail line) can enhance the capacity of the region to grow and adapt.	**What is stopping/promoting change?** *Constraints* • Some villages and towns are adversely affected when bypassed, affecting business and local economy • Gauge differences in railways constrain freight transport across the NSW–QLD border • Rationalisation of air services has led to removal of flights to some smaller regional airports *Enablers* • The Pacific Highway is a conduit between two large population centres enabling tourists to access local attractions and freight to move efficiently to markets	**Where is change needed most/least?** • Better understanding of the future role of roads/rail/airports in the region to maximise its potential and incorporate into strategic planning • Make better use of major infrastructure through development of regional rail–road transport hubs • Rail line upgrade to enhance freight and passenger movements
Health and aged care infrastructure	**What does the indicator mean?** The region's health and aged care systems will need to grow to meet the rapidly ageing demographic of the North Coast.	**What is stopping/promoting change?** *Constraints* • Ability to secure sufficient funding streams to service the growing need • Greatest use of hospitals is in the last three years of life • Private sector stepping in requires a problem before it is addressed	**Where is change needed most/least?** • A need to embrace the ageing population and promote private sector investment in servicing an ageing population • Promote opportunities for investment in aged care infrastructure
Financial			
Government efficiency measures	**What does the indicator mean?** Governments at all levels are seeking efficiency gains.	**What is stopping/promoting change?** *Constraints* • The financial position of many local governments on the North Coast is declining • Loss of individual contacts and loss of networks • Community as a whole think government still delivers services • Isolation of the community from government *Enablers* • Local Land Services 'as a rate enforcer' gives that organisation a more flexible role to encourage change	**Where is change needed most/least?** • Acknowledge local government has an important role in climate change adaptation • Identify funding streams for local government to implement climate change adaptation actions

Indicator	Capacity to adapt		
Research and development (R&D) incentives	**What does the indicator mean?** Incentives for R&D have been declining.	**What is stopping/promoting change?** *Constraints* • Overall R&D support has declined *Enablers* • Industry is inventive and will come up with cost effective solutions	**Where is change needed most/least?** • Design and deliver R&D incentives to stimulate development and adoption of technology for climate adaptation • Need to provide information for the community to fund innovation
Attitudes to risk	**What does the indicator mean?** It is currently 'solely on the individual's shoulders to look beyond' upfront costs of housing in risk-prone developments; however, there is limited transparency on what the risks are.	**What is stopping/promoting change?** *Constraints* • Information to allow individuals to fully consider risk is not always easily accessible • Expectations in the community that 'someone will bail me out' of unwise choices • People forget – after extreme events 'people withdraw for a year or two then move back in' to high risk areas • The internalisation of dollar-values of risk factors (e.g. through insurance premiums) is not included in the original decision-making by the community *Enablers* • Natural disasters often open the window for change	**Where is change needed most/least?** • Improve communication to increase community knowledge about climate risk • Improve the accessibility of information on climate risk for decision-makers
Regional investment	**What does the indicator mean?** The ability to attract investment to the region in competition with other regions of Australia would enhance adaptive capacity.	**What is stopping/promoting change?** *Constraints* • Big region without high population density – leads to localised investment or investment being spread too thinly • Ability to compete with large cities for investment • Ability to maintain investor confidence in agriculture sector when it is regularly affected by the changing climate	**Where is change needed most/least?** • Need to grow the human services economy in the region to meet the challenges and capture opportunities from an ageing population • Consider funding arrangements that better deal with the region's size, population and equity in the services provided (i.e. horizontal fiscal equity) • Consider strategic investment in climate change adaptation actions to maximise the flow-on to the broader community

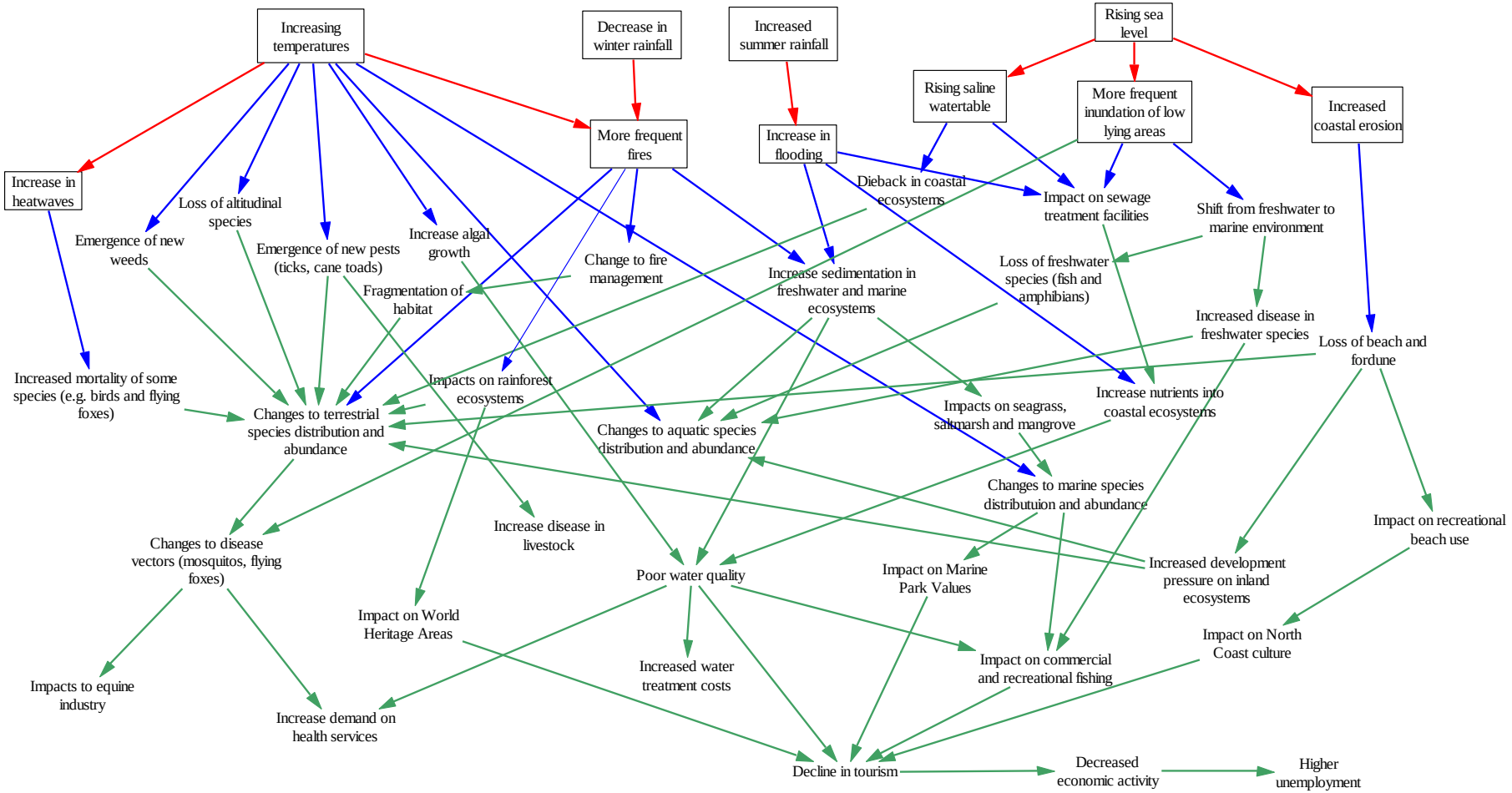
3. Landscapes and ecosystems sector

3.1 Workshop participants

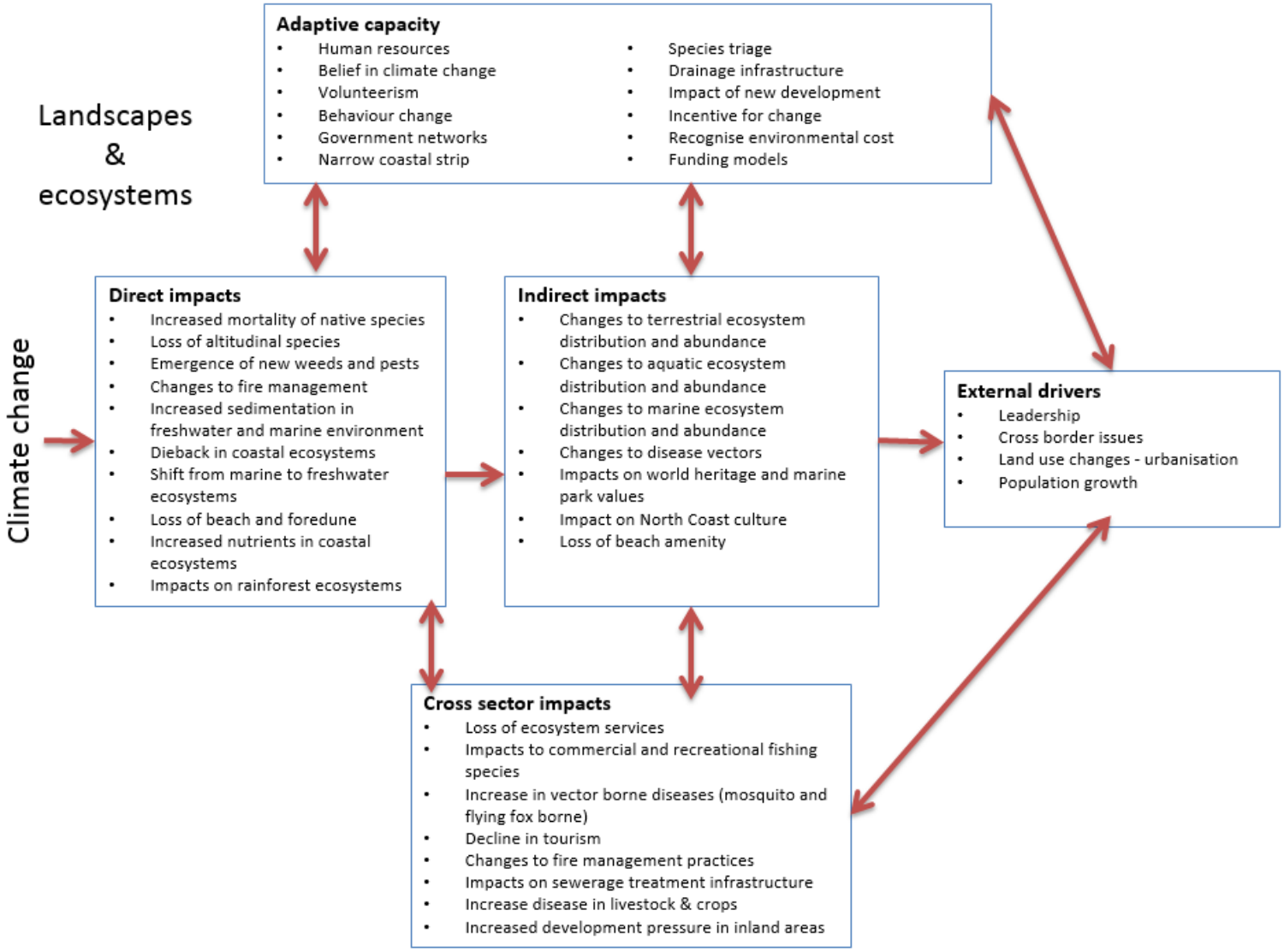
This workshop was held at the Coffs Harbour Race Course on 26 and 27 February 2014, with attendees from the following organisations:

- Department of Premier and Cabinet
- Department of Primary Industries
- Bellingen Shire Council
- Coffs Harbour City Council
- Marine Parks Authority
- Northern Rivers Local Land Services
- NSW Forestry Corporation
- Office of Environment and Heritage
- Port Macquarie–Hasting Council
- Richmond River County Council
- Richmond Valley Council
- Tweed Shire Council

3.2 Findings: Impact pathways for the landscapes and ecosystems sector



3.3 Findings: Vulnerability diagram for the landscapes and ecosystems sector



3.4 Findings: key vulnerabilities and adaptive capacity of the landscapes and ecosystems sector

The following indicators and descriptions are adapted from the discussions between workshop participants at the landscapes and ecosystems workshop.

Indicator	Capacity to adapt		
Human			
Human resources	**What does the indicator mean?** The North Coast is considered to have a good skills base in the landscapes and ecosystems sector, people are effective at working remotely, the regional population is generally healthy, and the region has a high proportion of retirees.	**What is stopping/promoting change?** *Constraints* • Existing resources on the North Coast are stretched and exacerbated by the constant drive for efficiency • Highly vocal activist groups on the North Coast divert staff resources from high value/return activities • Tree- and sea-change retirees from urban areas have higher expectations for the level of service than is available in the region • Loss of staff can equal loss of knowledge and networks • Harder to get and retain new/younger staff *Enablers* • Highly vocal activist groups on the North Coast ensure environmental issues are a priority • Contraction of resources can drive better ways of doing things, but these become increasingly limited with each cut • The North Coast has a good skills base in the landscapes and ecosystems sector • People are effective at working remotely • The regional population is generally healthy • The region has a high proportion of retirees, with 'spare' time	**Where is change needed most/least?** • Promote and support environmental education particularly in relation to the impacts of climate change on the region's ecosystems

Indicator	Capacity to adapt		
Belief in climate change	**What does the indicator mean?** Community belief in climate change and its impacts is a driver of change: 'It's about whether they believe it's an issue and then if they're willing to do something about it.'	**What is stopping/promoting change?** *Constraints* • People feel disempowered about climate change in general • Currently there is no consistent message from government about climate change • Disputes about the validity of the science can be confusing to the community • Politics seems to be stuck on whether or not to believe it is happening	**Where is change needed most/least?** • Getting the message right on climate change is critical • There is need for climate change to be viewed from a risk perspective
Social			
Leadership	**What does the indicator mean?** Perception of risk of climate change as a problem is a big driver of adaptation. The community is looking for leadership or cues/direction to act.	**What is stopping/promoting change?** *Constraints* • Often a proactive stance on environmental, social and political issues by the community is at odds with their lifestyle choices • Lack of support and guidance to manage the impacts • Reliance on economic growth as a panacea • Negativity surrounding climate change messages can be a barrier to leadership • Local government's capability to respond to climate change depends on institutional capacity *Enablers* • Influx of younger people to the region (in particular the Northern Rivers sub-region), will improve the status of the environment within the community	**Where is change needed most/least?** • Continue regional and state level support for *NSW2021* and its strong community engagement • Need for less negativity in the climate change discussion • Targeted education about what climate change means for the region • We need stronger leadership to drive change

Indicator	Capacity to adapt		
Volunteerism	**What does the indicator mean?** Regional participation in volunteerism on the North Coast is generally low.	**What is stopping/promoting change?** *Constraints* • High level of retirees who have 'spare' time but not for physical labour • Growing reliance (over-reliance) on volunteers • Ageing volunteer 'workforce' • Perception that volunteers are free labour is discouraging younger volunteers • Expectation among younger age groups of moving into lucrative positions without experience means that volunteerism and entry level positions in the sector are unattractive • Tendency for youth to be involved in multiple activities also limits the time available for volunteerism	**Where is change needed most/least?** • Remove barriers to volunteerism resulting from field management and insurance of people • Some areas (Urunga and Coffs Harbour) are worse than others, like Tweed, but it's more urban based • Some areas do receive volunteer support, e.g. surf life-saving and children's sport is well supplied with volunteers
Behaviour change	**What does the indicator mean?** Harnessing social and behavioural change is possible and an important component of adaptive capacity.	**What is stopping/promoting change?** *Constraints* • Limited understanding by community members about what they can do at an individual level to change • Community has become disenfranchised with the political system for dealing with climate change *Enablers* • Natural disasters can provide a catalyst for change • Financial incentives can help overcome barriers to behaviour change • There are a growing number of movements outside the political process to address climate change (e.g. community renewables)	**Where is change needed most/least?** • Explore ways to couple behaviour change activities to financial incentives as an effective mechanism to promote adaptation • Need to make improvements associated with adaptation visible to the community as this can encourage people to think more deeply about their own adaptation (lead by example and communicate it)

Indicator	Capacity to adapt		
Government networks	**What does the indicator mean?** The region is supported by strong, often informal, networks across government. These networks are an important component of adaptive capacity.	**What is stopping/promoting change?** *Constraints* • Need to increase processes where agencies and tiers of government can come together to work jointly on problem solving; these are important but opportunities are declining • Federal agencies usually have a high staff turnover and no staff on the ground in the region, which limits the practical support on offer • 'We are short staffed and we don't have dedicated people' *Enablers* • Good network of people can call each other and get the benefits of the minds working together • Networks also bring benefits through access to and combining of resources • Increasing cooperation amongst all groups	**Where is change needed most/least?** • Increase processes where communities can come together to work jointly on problem solving • Ensure critical skills are not lost to the region • Support initiatives to promote inter-agency and cross-government adaptive governance of the significant regional environmental issues
Natural			
Narrow coastal strip	**What does the indicator mean?** Regional geography limits the capacity to adapt because it reduces options available for managing the catchment, and flows on to the management of ecosystems.	**What is stopping/promoting change?** *Constraints* • Landholders aren't willing to do the things we want to fund at the moment, which means that problems are exacerbated through not being treated • There is a high risk of erosion which makes expenditure on structural works and riparian restoration difficult to justify *Enablers* • Projects that can show they are resilient or build resilience are usually the ones that get funded	**Where is change needed most/least?** • Seek long-term investment in the region based on a strategy that integrates productivity and landscape resilience

Indicator	Capacity to adapt		
Species triage	**What does the indicator mean?** Simply not the funds available to effectively manage all threatened species. Adoption of triage approach may be an inevitable consequence of adapting to climate change.	**What is stopping/promoting change?** *Constraints* • Scale of the problem compared to the resources available • Concept of triage is beginning to be discussed but tends to polarise views within the landscapes and ecosystems sector • At present there was a feeling that environment agencies were 'still doing the same things just doing them smarter' Enablers • Use of iconic species to deliver wider species/ecosystems benefits	**Where is change needed most/least?** • Greater emphasis on adaptive management of ecosystems under climate change • Current regulatory tools are based on ecosystem benchmarking and are reflected in NSW environment policy and legislation • Financial resources will be needed to assist in updating those regulatory tools to create new benchmarks under climate change • Adopt a more open-minded approach to transformation in some agro-ecosystems where change will overcome resilience, e.g. wet pasture management
Physical			
Drainage infrastructure	**What does the indicator mean?** The North Coast is a floodplain. There are thousands of square kilometres of coastal floodplain and infrastructure to drain it.	**What is stopping/promoting change?** *Constraints* • Region has a lot of drainage infrastructure at or near existing sea level; inundation is already a problem in some areas Enablers • In key areas councils are actively trying to deal with the current issues	**Where is change needed most/least?** • Consider the cost effectiveness of significant investment in drainage infrastructure in light of sea level rise projections and the coastal inundation that will result

Indicator	Capacity to adapt		
Impact of new development	**What does the indicator mean?** There is a lack of recognition that construction of new infrastructure can cause some loss or damage to ecosystems.	**What is stopping/promoting change?** *Constraints* • The concept of a 'shifting baseline' means that current residents and visitors to the area have limited memory of the natural environmental condition: 'fishing is nothing like it was generations ago' or push to dredge channels • A lot of people do not understand ecosystems, how they function or the services they provide, e.g. wetlands • Growth of the Gold Coast region is directly impacting the northern parts of the region • Some of the region's infrastructure has not been built for the natural variability or climate change • Some estuaries in the region have limited 'assimilation' capacity to handle increased urbanisation	**Where is change needed most/least?** • Ensuring consideration of the impact of development and infrastructure construction on the region's ecosystems • Need to look at what is needed to service this growing population and the management of environmental infrastructure
Financial			
Incentive for change	**What does the indicator mean?** Any adaptation strategy for future climate has to be able to deliver change but also be aware of the disincentives to change.	**What is stopping/promoting change?** *Constraints* • The absence of incentives for industry to do the right thing • Shifts in federal policy have penalised industry – NSW's largest abattoir was emitting more than 50,000 tonnes of CO_2; under the carbon tax they spent money on energy efficiency to bring down emissions. The payback was 15 years; now that the carbon price has been removed, the payback is more than 25 years • Existing subsidies promote activities that are likely unsustainable in the long term, e.g. farming below sea level and the associated drainage infrastructure • The region is relatively lacking in wealth and the majority of small businesses employ fewer than five people. 'There's not a lot of money for people to invest'	**Where is change needed most/least?** • Develop consistent policy approach to climate change incentives to avoid 'boom and bust' cycle • Emphasise to industry the long-term benefits to cost structures of many adaptation actions, in particular in relation to energy efficiency • Need to reflect the true costs of resource use in the current pricing models

Indicator	Capacity to adapt		
Recognise environmental cost	**What does the indicator mean?** There is a lack of recognition of the real cost to the environment of climate change and the behaviours that contribute to it.	**What is stopping/promoting change?** *Constraints* • We have sufficient information already to undertake an analysis of the true environmental cost of our actions, but this is not being done • General community are often not making the connection between their actions and climate change and its impacts • 'Climate change is the single greatest risk that faces the nation and we have no strategic plan to deal with it. There is a massive dissonance between the scale of the problem and the institutional response' • Natural assets are not on the 'balance sheet' *Enablers* • Environment sector could learn from other sectors such as health that have done a better job of making links between behaviour and social outcomes	**Where is change needed most/least?** • Seek ways to account for environmental assets on local government balance sheets • Natural resource management needs to be targeted. Some of these adaptions may have to be prioritised, as the most appropriate in terms of reducing vulnerability and risk may be too expensive
Funding models	**What does the indicator mean?** There is a need to identify ongoing funding stream models.	**What is stopping/promoting change?** *Constraints* • In most areas of the North Coast it is financial capital that is the missing ingredient for adaptation and this is attributable in part to the structure of the regional economy *Enablers* • A lack of resources in the environment sector can, up to a point, be a driver of adaptation for innovative funding approaches • Some local government areas (LGAs) have found ways to use scarce financial resources to target improved catchment management (the source of the problem) rather than improved infrastructure (an ameliorative response) • Tweed Council has a funding model which has been successful. Water and sewer resources provide a dividend back to council and that goes directly back to the management of the catchment and working on healthy riparian areas • Regional State of the Environment reporting has been a positive outcome of a strategic approach in the landscapes and ecosystems sector	**Where is change needed most/least?** • Align the funding to projects that access funding from multiple sources with longer times frames to improve project outcomes • Reduce the time lag between application for funding and decisions by funding bodies • Avoid funding small, reactionary projects in response to lobbying by taking a more strategic approach to funding allocation • Recognise that adaptation is a process not an outcome and that success does not mean that funding is no longer needed • Look for multiple drivers/benefits in projects so the driver is no single thing, e.g. being able to link to human health benefits • Need 'to do the number crunching which shows the benefit of actions' on climate change for the environment

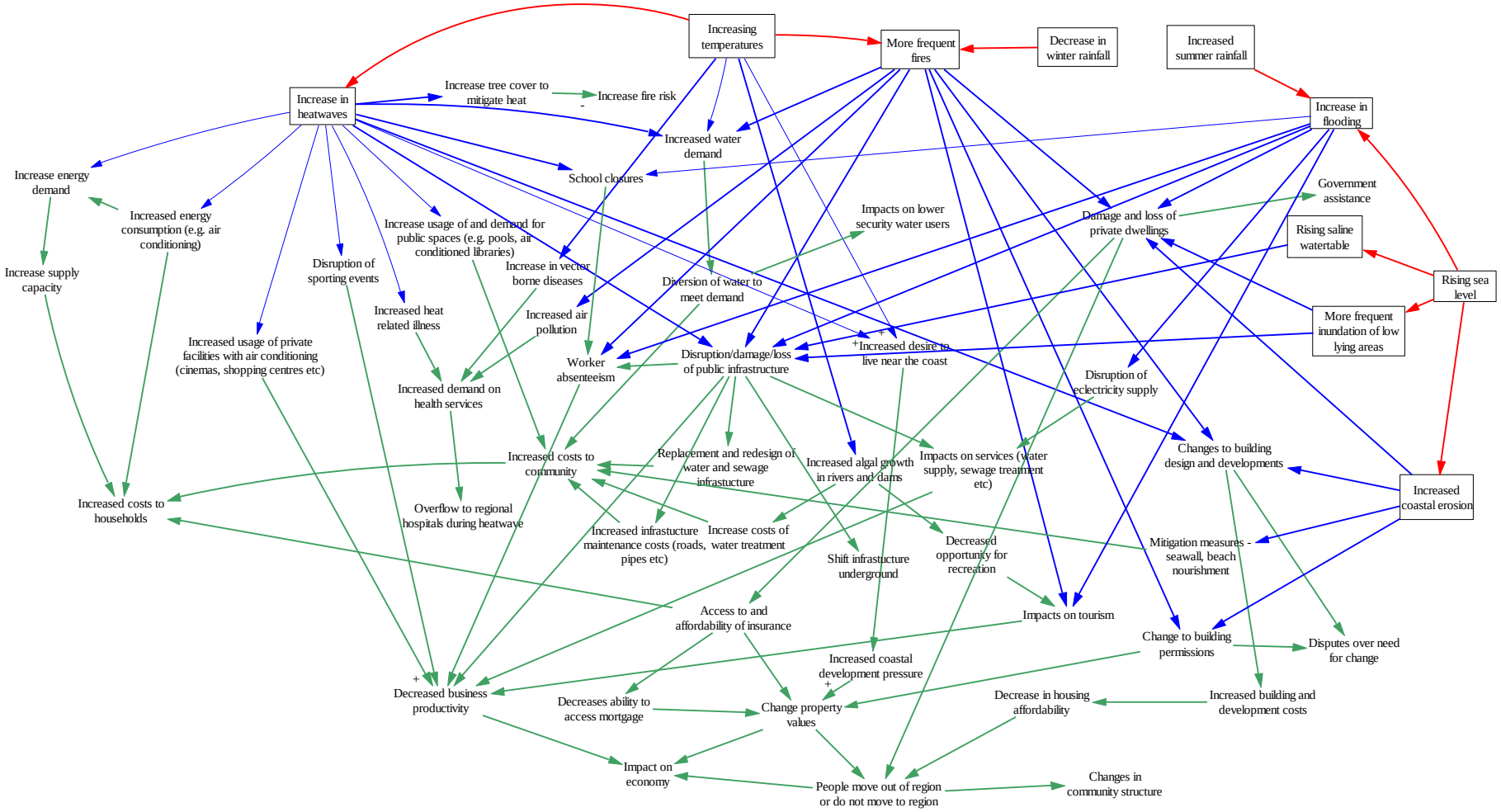
4. Settlements and infrastructure sector

4.1 Workshop participants

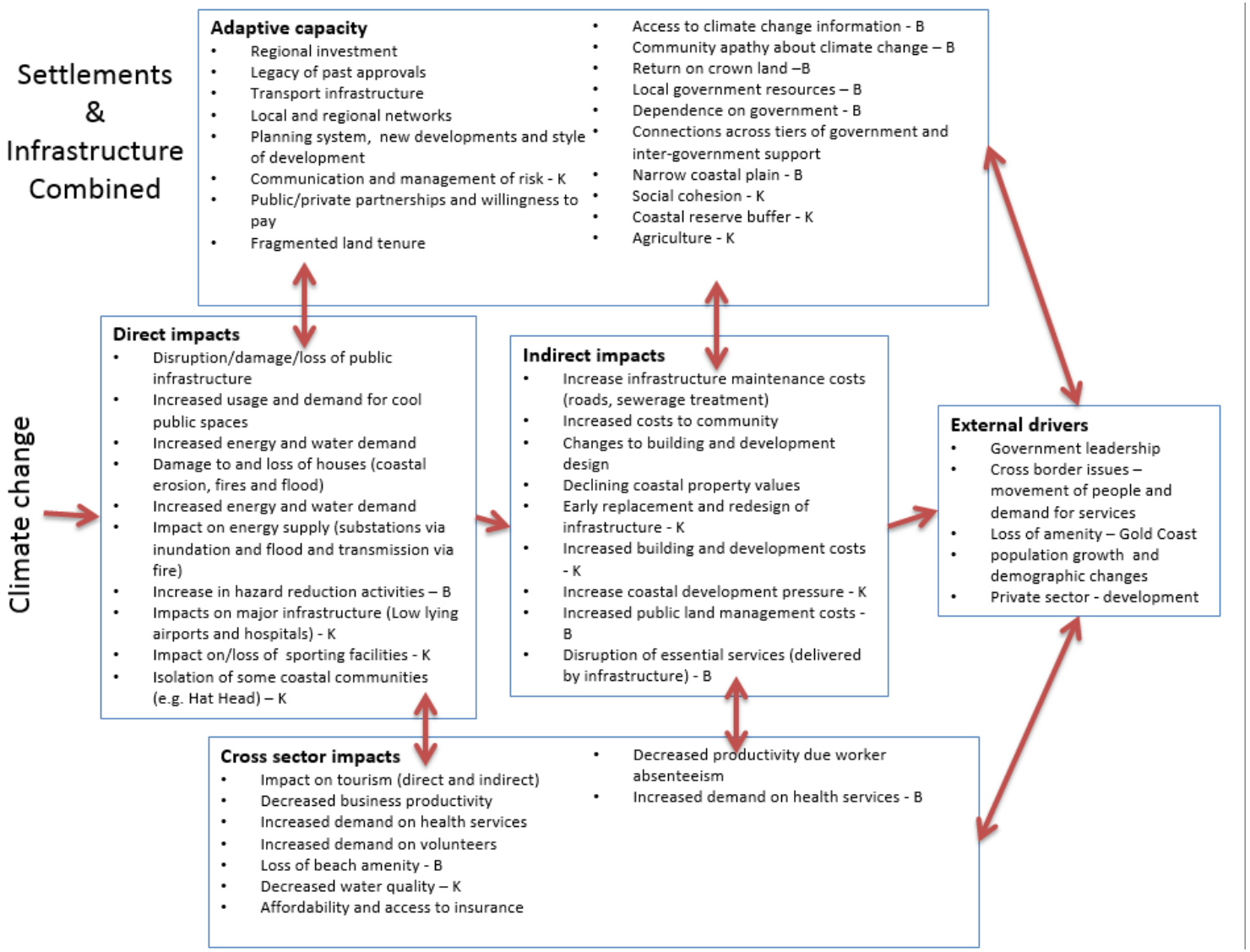
Two workshops were held for settlements and infrastructure, the first at Ballina RSL on 5 and 6 March 2014 and the second at Kempsey RSL on 12 and 13 March 2014. There were a total of 35 attendees from the following organisations:

- Ballina Shire Council
- Bellingen Shire Council
- Byron Shire Council
- Clarence Valley Council
- Coffs Harbour City Council
- Department of Education and Training
- Department of Planning and Infrastructure
- Department of Premier and Cabinet
- Department of Primary Industries
- Department of Trade and Investment
- Environment Protection Authority
- Kempsey Shire Council
- Kyogle Shire Council
- Land and Housing Corporation
- Mid-North Coast Regional Organisation of Councils (MIDROC)
- Northern Rivers Regional Organisation of Councils (NOROC)
- North Coast Area Health Service
- NSW Office of Water
- Office of Environment and Heritage
- Port Macquarie–Hastings Council
- Richmond Valley Council
- Roads and Maritime Services
- TAFE NSW North Coast Institute
- Tweed Shire Council

4.2 Findings: Impact pathways for the settlements and infrastructure sector



4.3 Findings: Vulnerability diagram for the settlements and infrastructure sector



4.4 Findings: key vulnerabilities and adaptive capacity of the settlements and infrastructure sector

The following indicators and descriptions are adapted from the discussions between workshop participants at the two settlements and infrastructure workshops. The workshop/s the indicator was identified from has been appended to each indicator.

Indicator	Capacity to adapt		
Human			
Climate change information – Ballina	**What does the indicator mean?** To act people need information that is relevant to their context.	**What is stopping/promoting change?** *Constraints* • The information coming through the media about climate change is currently unclear, confusing for the community and is not in a form that people can relate to • Minimal funding to support action *Enablers* • Currently good sustainability programs are in place for primary school children	**Where is change needed most/least?** • Information on climate change needs to be at a local scale and in a form that allows communities to understand the consequences • Fill local knowledge gaps to bring the information at a national level down to the local level
Community apathy – Ballina	**What does the indicator mean?** 'People don't care and it's too big for individuals to tackle – you can educate but if you don't get ownership (of the issue) you won't have change.'	**What is stopping/promoting change?** *Constraints* • Most people focus on the short term and 'coping' with daily life • Individuals don't see how they can help in the process • Continued debate about the reality of climate change will ensure the focus is not on the response, including adaptation • The invisible future cost of climate change prevents action *Enablers* • Ability to learn from other long running social change campaigns such as tobacco and anti-smoking. These actions were very successful with leadership from local, federal and state government to help bring about behaviour change • There are active segments of the community on the North Coast that are willing to protest at a local level on issues such as climate change and CSG	**Where is change needed most/least?** • Improve messaging around climate change: to emphasise its importance, to use language less confronting for particular groups (e.g. elderly) and discuss impacts in a way that holds currency for individual decision-makers (avoid 1:50 or 1:100 year timescales)

Indicator	Capacity to adapt		
Dependence on government – Ballina	**What does the indicator mean?** There is a perception in the community that government will make the changes that are required to adapt to future climate.	**What is stopping/promoting change?** *Constraints* • Community does not yet recognise what it can do	**Where is change needed most/least?** • Establish and communicate the respective roles of government, business and the community in adapting to climate change, to promote the level of self-reliance and individual action required to adapt • There is a need to strike the right balance between self-reliance and the respective levels of government taking responsibility for large decisions which are needed as a result of expected climate change
Communication of risk – Kempsey	**What does the indicator mean?** The community have found much of the terminology related to climate change risk assessments difficult to understand.	**What is stopping/promoting change?** *Constraints* • Some existing residents object to information about risks to their properties being available (i.e. Section 149 of *the Environmental Planning and Assessment Act 1979*) • A lack of a common approach means different approaches are being followed by different LGAs often 'based on belief of councillors' and the 'community is asking what is going on' • Older people are less familiar with environmental terminology • Climate change is often associated with the green movement and left politics leading to politicisation of the debate • Debate about the science takes the focus away from what an appropriate response is *Enablers* • A number of local government areas conducted risk assessments and have used them in community consultation to assist understanding of climate change impact • The need for change is often much easier to communicate to councillors without invoking climate – 'when you have to consider potential cost it becomes an issue for them'	**Where is change needed most/least?** • Ensuring messages use language less confronting for particular groups in the community, e.g. elderly

Indicator	Capacity to adapt		
Risk management – Kempsey	**What does the indicator mean?** There is a need to align state and local government management of climate risk.	**What is stopping/promoting change?** *Constraints* • Improved management of risk around flooding and bushfires is often constrained by 'vested interests' concerns about the controls' and 'fear of litigation by residents because development process is unreasonable' • Approvals for land development were made before knowledge of climate change and sea level rise and (developers) have been sitting on property since the 1980s – very hard for council to go back on decisions *Enablers* • If leaders understand issues better they will be able to manage better • The Local Government and Shires Association has attempted to address the issue of the understanding of climate change risk by councillors	**Where is change needed most/least?** • Seek amendment of the *Local Government Act 1993* to provide training for new councillors on local government business processes
Demographic changes – Kempsey	**What does the indicator mean?** Demographic change occurring at the regional scale and cultural differences at the local scale affect adaptation on the North Coast.	**What is stopping/promoting change?** *Constraints* • The conservative, older population, makes it hard to get action • Young people are leaving the region for work and higher education • Older people are generally more vulnerable to the impacts of climate change • Retirees moving to the region seek out affordable bushland or coastal settings; these tend to be in at risk areas • Lack of employment opportunities • Maintenance costs for (existing) education institutions – TAFE • Poor public transport access to higher education facilities *Enablers* • Growing availability of faster internet • Growth in online courses • Environmentally and politically engaged groups within this community can be drivers of change	**Where is change needed most/least?** • Engage local schools in the need for and action on climate change adaptation • Online courses and internet may help overcome the knowledge gap • Provide increased opportunities for on the job training to retain regional youth

Indicator	Capacity to adapt		
Social			
Government leadership – Ballina and Kempsey	**What does the indicator mean?** Leadership from all tiers of government can help empower communities to 'own' climate change adaptation more fully.	**What is stopping/promoting change?** *Constraints* • The gradual nature of climate change impacts is seen as a major impediment • Climate change is not viewed by all government agencies as 'core business' *Enablers* • The impacts of extreme weather events can often force government to act	**Where is change needed most/least?** • Need to recognise the respective roles and responsibilities of government and the community for managing climate change risks
Connections across tiers of government – Ballina	**What does the indicator mean?** Connections between tiers of government on climate change need to be strong to facilitate adaption.	**What is stopping/promoting change?** *Constraints* • Need to ensure a 'clear line of sight' between local, state and federal governments and the community; this can empower action on climate change and other local issues • High churn through of local government general managers is seen as contributing to local inconsistency on key issues *Enablers* • Interaction between local government and regional state government staff is generally positive and supportive	**Where is change needed most/least?** • Encourage greater regional autonomy of decision-making and limit top-down decision-making in local issues • Joint Organisations (Regional Organisations of Councils) are considered critical to establishing processes that will enable regional action on climate change

Indicator	Capacity to adapt		
Local and regional networks – Ballina and Kempsey	**What does the indicator mean?** Strong local networks exist within North Coast communities and among local governments that could support climate change adaptation.	**What is stopping/promoting change?** *Constraints* • Engineers tend to not liaise across councils • Local communities vary considerably in their level of cohesion on issues such as sustainability and the environment • Population growth in many areas of the North Coast can be a challenge for maintaining community networks: 'for people moving to a new area it takes a while to build up connections' • People effectively 'shift the costs in the hope they don't have to pay' • Climate change is not currently a priority for the Regional Organisations of Councils *Enablers* • Local communities vary considerably in their level of cohesion on issues such as sustainability and the environment. The nature of each community and population is what drives change and there can be an outflow of that (positive action) to other areas • The Floodplain Network Forum is a network of environmental officers covering the region from Taree to Richmond • Awards processes allow innovation to be visible	**Where is change needed most/least?** • Create more opportunities for regional engagement on climate adaptation to build up local networks • Adaptation awards to recognise innovation and progress in local government • Seek a greater recognition of the importance of these forums in fostering climate adaptation under alternative banners
Cross-border issues – Ballina	**What does the indicator mean?** Proximity to the border with Queensland puts significant pressure on regional service provision in the Northern Rivers sub-region.	**What is stopping/promoting change?** *Constraints* • The cross-border patient flow has had a massive impact on NSW and has been driven largely by Queensland's decision to reduce services • Cross-border differences in daylight saving policy cause problems for businesses • The wealthy councils to the north (e.g. Gold Coast City) lead to a considerable power imbalance *Enablers* • The State Health Agencies meet regularly to discuss the issue of cross-border flow and there is intense communication between the states on boundary issues	**Where is change needed most/least?** • Cross-border issues are most obvious in health, emergency management and policing, e.g. 40% of clients treated in Tweed Hospital live in Queensland • Governments work more closely to resolve cross-border impacts on local service provision

Indicator	Capacity to adapt		
Inter-government support – Kempsey	**What does the indicator mean?** There is a need to ensure all tiers of government support climate change adaptation.	**What is stopping/promoting change?** *Constraints* • Roads and Maritime Services hands responsibility for regional roads to local government. Tensions do occur over 'the amount of money that comes with it limited to a 10 year maintenance horizon'	**Where is change needed most/least?** • Improve government coordination and support for climate change adaptation
Social cohesion – Kempsey	**What does the indicator mean?** Social cohesion around climate change is currently fractured into 'two ends of a spectrum – believers and conservative areas'. Volunteerism – an important glue for social cohesion – is in decline.	**What is stopping/promoting change?** *Constraints* • Other issues are seen as more locally important than climate change • Coal seam gas exploration brought social beliefs to a head. The differences can be quite stark between neighbouring communities • Communities are generally not aware of where money is currently being spent on intervention around climate change because it can create tension between communities • Conflict over policy decisions across all tiers of government to address the concern of rising energy costs as a result of climate change mitigation • Declining volunteer numbers driven by an ageing population of locals, and higher service expectations of urban migrants is also impacting on volunteerism • New residents coming from the cities tend to have greater expectations on the services delivered by government • Ability of ageing population to engage in the physical aspects of emergency volunteering is declining *Enablers* • Long-term residents tend to do things for themselves	**Where is change needed most/least?** • Need to focus on communicating the co-benefits associated with any action

Indicator	Capacity to adapt		
Natural			
Loss of amenity – Gold Coast – Ballina	**What does the indicator mean?** With much of the Gold Coast developed there is a push for development at the northern end of the region.	**What is stopping/promoting change?** *Constraints* • Loss of amenity on the Gold Coast as a consequence of urban development to support population growth impacts on the natural environment south of the border • Increased pressure to develop natural areas because similar areas in Queensland have become degraded • Lack of clarity, e.g. Cobaki Estate is being undertaken by a Queensland-based developer but is being built in NSW with access through Queensland. This situation raises the question of 'who provides support services, schools, emergency management, etc.' *Enablers* • The Border Ranges provide a physical barrier to cross-border impacts and planning in Kyogle LGA has to date been largely unaffected • Improvements to the road infrastructure between northern NSW and Brisbane will lead to people living in Tweed and working in Brisbane	**Where is change needed most/least?** • Seek to resolve differences in environmental values between Gold Coast and Northern NSW communities • Improve protection for the North Coast's natural values

Indicator	Capacity to adapt		
Narrow coastal plain – Ballina	**What does the indicator mean?** The region is made up of a 'narrow coastal strip with large low-lying floodplains cross-cut by rivers' making it particularly vulnerable to flooding and sea level rise. Flooding 'makes movement of people and goods difficult and requires flood proofing of communities and infrastructure'.	**What is stopping/promoting change?** *Constraints* • Sewerage systems in all North Coast housing estates are gravity systems so that treatment facilities are located at the lowest point. 'They can't be moved and can't get ocean outfalls to operate' • Sewerage schemes have been rebuilt in alignment with climate change projections; however, state government policy changes on sea level rise projections are making infrastructure planning difficult • The constant debate about climate change impacts means that uncertainty is 'built into the core thinking and it becomes part of the debate' • A large infrastructure backlog exists, up to $10 million for roads alone, to which climate change adaptation will add considerably • Hydrology of the area can't be changed • Councils are not resourced to manage the future requirements of protecting the coast • Can't insure for coastal erosion and can't get a mortgage without insurance • Communities want to retain beach amenity but are reluctant to consider retreat as a serious option • Large areas that are not raised to meet future water levels and are now starting to be affected at very high tides • Despite the already obvious significant impacts and information available, there is continuing demand for coastal lifestyles • Increasing floor heights and other resilience measures increase the cost and time taken for developments *Enablers* • Action has been taken in many parts of the region to improve the resilience to flooding • Local government has begun using a triple-bottom line sustainability framework for infrastructure construction to help change practice: 'once you start reporting on that it changes the context'	**Where is change needed most/least?** • Improve recognition of the unique biophysical attributes of the North Coast that constrain adaptive responses • Increase rates to fund infrastructure improvements • Seek housing styles better suited to periodic flooding • Ballina is a large area of concern as it is already being affected by king high tide inundation • Provide support/guidance on making decisions in uncertainty

Indicator	Capacity to adapt		
Legacy of past approvals – Ballina	**What does the indicator mean?** Councils operate at catchment level when planning sub-divisions. All new subdivisions are in areas with plans that incorporate the requirements of BASIX and account for flood risk and climate change impacts. However, some areas of the North Coast were approved for development under previous planning frameworks that did not consider these risks.	**What is stopping/promoting change?** *Constraints* • Back zoning is very difficult in practice • Many of the legacy sites are flood prone and include areas of high biodiversity conservation value • There is pressure for rezoning from developers who have bought land on speculation of rezoning	**Where is change needed most/least?** • Seek recognition of and action to address legacy issues and how best to deal with development that is now subject to climate change
Coastal reserve buffer – Kempsey	**What does the indicator mean?** National parks and Crown lands along the coast act as a natural buffer to sea level rise and coastal erosion and also reduce the likelihood of over-development.	**What is stopping/promoting change?** *Constraints* • Many river villages and towns (such as Macksville, Urunga, Nambucca and Kempsey) are susceptible to flooding • Indirectly, sea level rise will exacerbate flooding risk upriver and up-estuary • A strong economic drive for sale of Crown lands still has the potential to see land susceptible to flood or inundation sold for development or development of land that could have increased the resilience of local communities *Enablers* • Many of the region's public reserves are adjacent to the coast in recognition of being unsuitable for development for their high conservation value	**Where is change needed most/least?** • Recognise the indirect effects of sea level rise on river villages and towns • There is a need to focus community education on the specific elements of the climate change scenario that will affect each community the most

Indicator	Capacity to adapt		
Agriculture – Kempsey	**What does the indicator mean?** The future of the region as a food producer will depend on the preservation of prime agricultural land. It's 'important to conserve land, agricultural land, to retain our resilience – keep options open and maintain diversity and competition'.	**What is stopping/promoting change?** *Constraints* • Economy of scale won't allow for broad scale agriculture but (the region) could still be a food producer • The 'most productive land is most vulnerable' on the coastal plain • Escarpment landholders used to use low-lying land as a drought refuge and escarpment country for flood refuge' – drainage of the floodplain through mitigation works has led to land tenure that is small farms and fragments, preventing access to refuges • Some areas on the floodplain are currently below level, 'sea level rise would see seawater going into areas, e.g. areas of Clybucca River have productive dairy lands in floodplain – drainage and salinisation is already an issue so likely to return to wetland as it was prior to intervention' • Old drainage unions that funded the floodplain drainage system have all folded except for one • What form future agricultural industries might take is difficult to predict *Enablers* • There is 'pressure for semi-urban development but protections are in place' • The relatively benign climate of the North Coast presents opportunities to attract agricultural producers from other regions in the future	**Where is change needed most/least?** • Seek opportunities for education to focus on the elements of the climate change scenario that will affect each community most • Preserve regional natural resources to ensure opportunities for expanded food production can be exploited as they arise • Support innovation in agriculture to exploit the climate and soil resources of the North Coast
Physical			
Style of residential development – Ballina	**What does the indicator mean?** The human settlement in the region is dominated by single houses on large blocks on the coast. People are happy to support sustainability and climate change action as long as it 'doesn't affect your lifestyle, dwelling demand and where we live'.	**What is stopping/promoting change?** *Constraints* • The dispersed nature of the population on the North Coast leads to increased costs of infrastructure • Many people will still live unsustainability despite the knowledge, because they are able to afford it • Big houses coupled with a lack of energy alternatives to fossil fuels limit the scope for people to adapt	**Where is change needed most/least?** • Address consumer demand and taxation anomalies that encourage over-investment in private housing

Indicator	Capacity to adapt		
Infrastructure – Ballina and Kempsey	**What does the indicator mean?** The location and style of existing infrastructure creates legacy issues for local government and constrains ability to adapt. Natural and built assets such as national parks, sections of the railway line, jetties and break walls are near coastlines. Existing buildings are not designed for increased temperatures and require air conditioning which adds to their running costs. Gravity-fed sewage treatment plants and pump stations tend to be at the low points in the landscape and subject to flooding and inundation. In some locations existing canal developments are highly vulnerable to flooding and inundation. Road maintenance is already a problem, 'rising water tables and salinity damage road pavements – unable to raise roads because this impacts on surrounding properties – causes flooding'.	**What is stopping/promoting change?** *Constraints* • The maintenance backlog of road and bridge infrastructure is a major source of vulnerability for the North Coast and is linked to the natural features of the region (narrow coastal plain) • There is support to repair roads damaged as a result of natural disasters but generally on a replacement only basis. There is no provision for improvement to reduce future damage to infrastructure • The loss of road connections impacts on rural industry's 'access to markets, ability to get stock out and to get back in' to farms after flooding passes. Rural roads are usually the last to be repaired • Many of the region's rural roads are constructed along river banks • Collapse of river banks has serious impacts on water quality • Increasing resilience of infrastructure increases its costs • Northern rail line could be vulnerable to future flooding without investment to improve flood resilience • TAFE infrastructure could be improved to cater for higher temperatures • Funding for public housing is already an issue • There is increasing demand for public housing yet there is considerable local public pressure in opposition of more • The reputation of the North Coast as a 'lifestyle destination attracts more/higher population, some of them into public housing' • Public transport arrangements on the mid-North Coast are poor, people must drive *Enablers* • Increase in online training and on the job training potentially reducing the requirement for TAFE facilities • Changing the design of housing precincts can help with the 'look' and social disconnection but can create other/additional problems for law and order that are hard to service • While climate change is not on the agenda for public housing, sustainability is, and developments are routinely fitted with photovoltaic panels and solar hot water • There are clearly business opportunities for entrepreneurs specialising in adaptation but such businesses are yet to emerge	**Where is change needed most/least?** • There is an urgent need to find a solution or develop a better standard for road reconstruction • Improve recognition of vulnerability and funding for both maintenance and improvement of the region's transport infrastructure • Recognise that the infrastructure backlog on the North Coast will be exacerbated by climate change amplifying legacy effects due to placement and style of existing infrastructure • Re-examine the infrastructure backlog on the North Coast to prioritise adaptation for climate change • Education about health impacts of climate change is needed

Indicator	Capacity to adapt		
Planning system – Ballina	**What does the indicator mean?** The planning system could help protect property buyers from climate change impacts	**What is stopping/promoting change?** *Constraints* • Community apathy towards climate change and the need to implement adaptive measures to deal with the potential risks	**Where is change needed most/least?** • Continue to manage development approvals where land will be significantly affected by future climate
Financial			
Local government resources – Ballina	**What does the indicator mean?** Most councils are under-resourced in terms of both people and time, and regional local government has insufficient resources to deal with climate change adaptation.	**What is stopping/promoting change?** *Constraints* • At present there is no mechanism to recoup the cost of public works from the community • Local government is always relying in some way on state agencies – and funding is not available for climate change actions • Perceived inequities in the funding models • The community want the council to adapt but don't want to pay • Some communities are asset rich – 'if prices go down then they won't be able to reverse mortgage' • 'Federal contributions are based on disadvantage – the model suggests it (funding) go to regional councils but legislative requirements see it go to Sydney councils'	**Where is change needed most/least?** • Review capacity of local governments to meet their obligations in the context of their budgets and what communities can reasonably be expected to pay • Explore new funding mechanisms to allow councils to recoup costs of protective infrastructure for at risk communities
Regional investment – Ballina	**What does the indicator mean?** Australia has a small population on a world scale which impacts on our ability as a nation to isolate the financial resources needed to deal with all the national infrastructure requirements in addition to adapting infrastructure for climate change.	**What is stopping/promoting change?** *Constraints* • The focus tends to be on increasing GDP and improving lifestyle • Always a challenge to get investment away from the metro regions – Sydney will continue to grow and be a magnet for government funds • The insurance industry is not insuring infrastructure on the North Coast – most people have dropped out (of private insurance) *Enablers* • It is a fast growing area by Australian standards: 'it's significant being between Brisbane and Sydney and Newcastle – big percentage of Australians move to this region – because of the climate and lifestyle'	**Where is change needed most/least?** • Encourage development of a strong regional investment case to attract a greater share of federal and state government funding

Indicator	Capacity to adapt		
Willingness of community to pay – Kempsey	**What does the indicator mean?** Despite community expectations about maintaining existing assets and adapting to climate change, they are not will to pay for it through increased rates/levies.	**What is stopping/promoting change?** *Constraints* • The funding pot keeps stretching thinner • Attempts by local government to rationalise costs through retirement of assets are met with resistance by the community • Community is vocal about retaining assets yet won't pay more rates that would allow for it • Much of the local government asset base on the North Coast can be traced back to the post-WWII construction program and it is reaching the end of its life • Retirees viewed as having limited capacity to pay • The proportion of people in the region receiving a discount on rates will increase *Enablers* • Intergenerational equity should also influence the community's willingness to pay for adaptation because 'those consuming should be paying for it' • Some LGAs have imposed levies to raise funds from the community for specific purposes, e.g. 'Kempsey has an environmental levy – because we need sufficient revenue'	**Where is change needed most/least?** • Need for change in understanding re taxes and how they're used • Explore a proactive model of community levies for climate adaptation action
Public–private partnerships – Kempsey	**What does the indicator mean?** Private–public partnership is potentially a mechanism to fund climate adaptation action but at present is not utilised.	**What is stopping/promoting change?** *Constraints* • 'Kempsey used to try to do private funding on private roads, but if one person pulls out whole project doesn't progress, results in higher neighbour tensions' • Greater funding from government for road infrastructure would be required to attract private investment 'but many are going backward' *Enablers* • In other regions, the Department of Education and Communities uses private agreements on campuses • Port Macquarie–Hastings Council has identified assets that might not be built without private contributions	**Where is change needed most/least?** • Explore ways that public–private partnerships could be used to fund climate adaptation projects • There is a role for local government to provide the proper environment for business to encourage people to spend money in the area

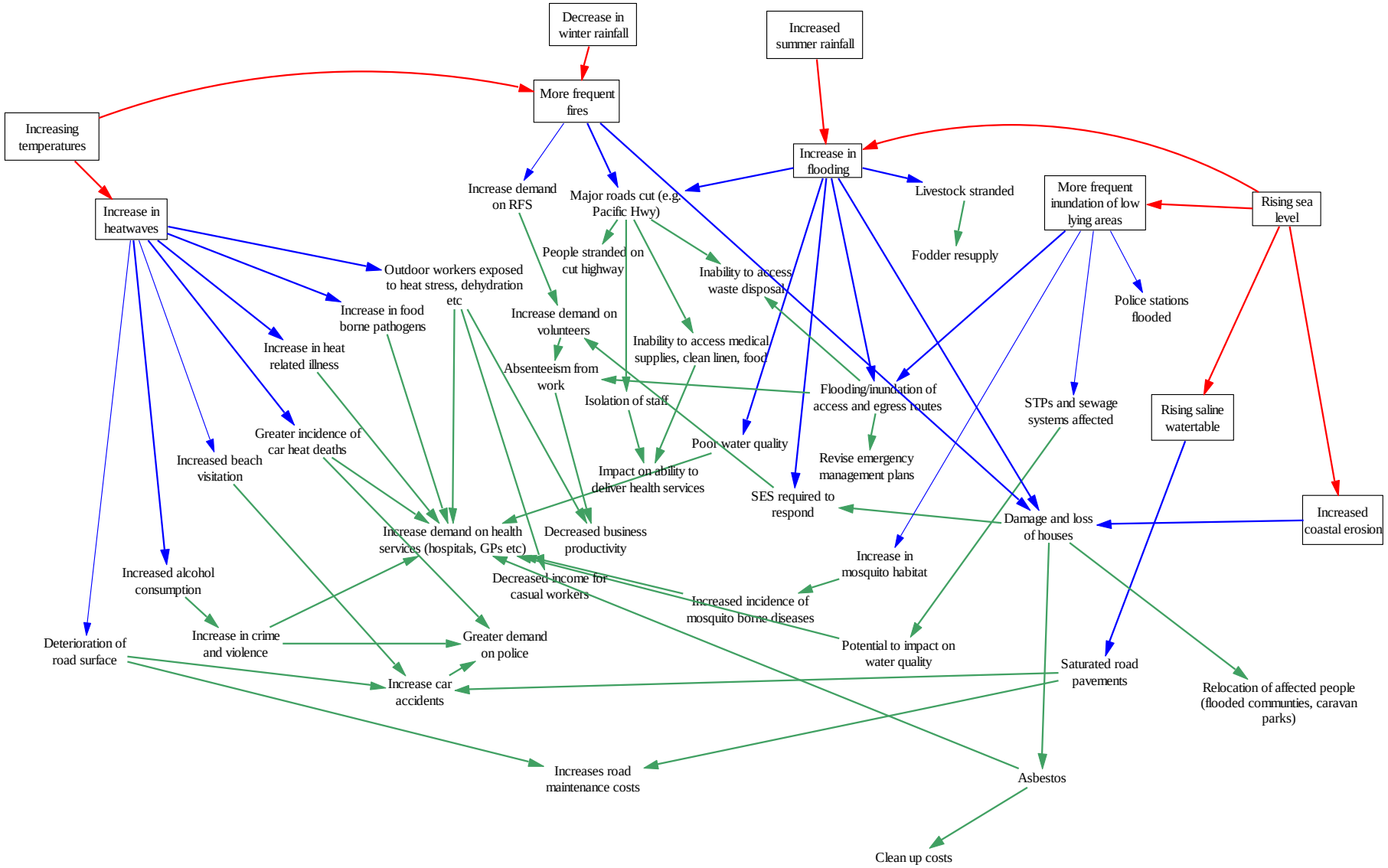
5. Emergency management sector

5.1 Workshop participants

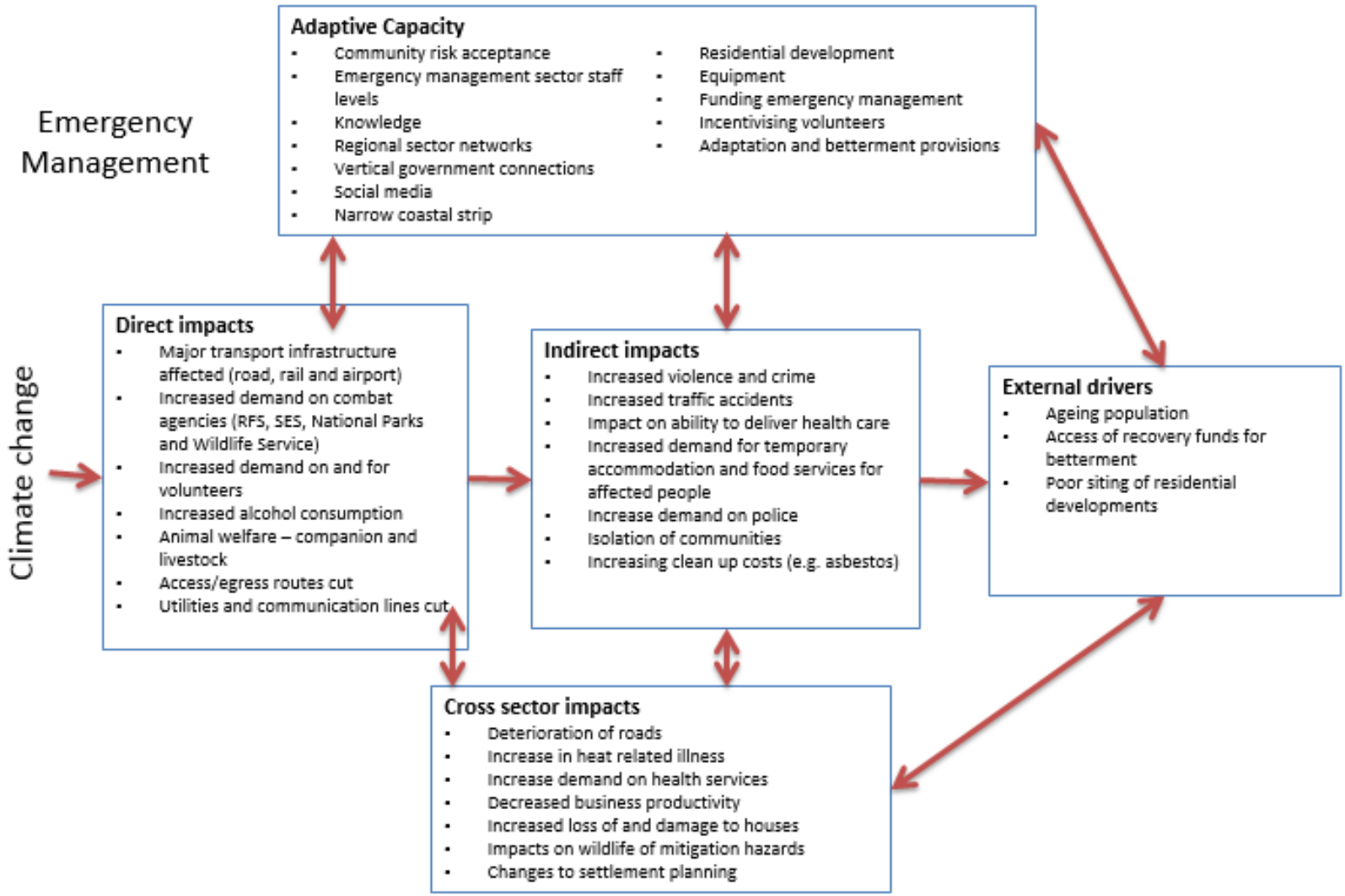
This workshop was held at the Rural Fire Service (RFS) Mid North Coast Fire Control Centre in Coffs Harbour on 26 and 27 March 2014, with attendees from the following organisations:

- Australian Defence Force
- Byron Shire Council
- Clarence Valley Council
- Department of Premier and Cabinet
- Department of Primary Industries
- Environment Protection Authority
- Kyogle Shire Council
- Lismore City Council
- Ministry of Police and Emergency Services
- North Coast Area Health Service
- North Coast Local Land Services
- NSW Police
- NSW Public Works
- NSW Volunteer Rescue Association
- Office of Environment and Heritage
- Roads and Maritime Services
- Rural Fire Service
- State Emergency Services
- Tweed Shire Council

5.2 Findings: Impact pathways for the emergency management sector



5.3 Findings: Vulnerability diagram for the emergency management sector



5.4 Findings: Key vulnerabilities and adaptive capacity of the emergency management sector

The following indicators and descriptions are adapted from the discussions between workshop participants at the emergency management workshops.

Indicator	Capacity to adapt		
Human			
Community risk acceptance	**What does the indicator mean?** In relation to existing climate risks the North Coast is in a calm period. This makes people complacent. People with vested interest oppose their property being recognised as at risk.	**What is stopping/promoting change?** *Constraints* • Many new residents to the region lack local, long-term knowledge of the area, the risks posed and what to do, and often have an expectation that someone will help them in an emergency • People currently view climate change as a long-term risk so they don't see it as being important • The framing of risk of climate change impacts in 1:50 or 1:100 year time scales doesn't hold currency for individual decision-making • The level of education of the community can have an impact on the acceptance of climate change and there are generally lower levels of education in the region • An older, more conservative population can make them resistant to change • The community complains about 'extreme risk' categories being applied to their insurance premiums or property certificates and then try to get them downgraded, often using political lobbying • In some ways the increase in service provision of the emergency management sector can limit people from being proactive around extreme events • Warnings are more individual and personalised – I'm expecting someone to knock on my door to tell me to move personally • Shifting people's behaviour is difficult because people know we've survived past disasters and we have good resources so there is a sense of security, which can be misplaced • The most vulnerable people are at highest risk and least likely to be able to help themselves or draw on resources that are available in emergencies. This group is growing in number	**Where is change needed most/least?** • Reframe the risk of climate change impacts in discussions because 1:50 or 1:100 year time scales don't hold currency for individual decision-making • Develop a state response team that comes in and helps manage engagement with the community immediately following an event while level of interest is high and opportunities for change available • Incentives are also required to promote change: 'a suite of incentives – information plus other incentives'
continued…			

Indicator	Capacity to adapt		
Community risk acceptance, continued		**What is stopping/promoting change?** *Enablers* • There is evidence that communities on the North Coast are becoming more self-reliant rather than relying on handouts • Insurance bills have been a real change for the community and a motivator for them to think about the issue of disasters; makes people realise that their properties are actually at risk	
Emergency management (EM) sector staff levels	**What does the indicator mean?** The work of the EM sector is 'lumpy' making it very difficult to effectively manage human resources. The current trend is through providing surge capacity from outside the region.	**What is stopping/promoting change?** *Constraints* • Current strategy of using people from outside the region can lead to EM staff fatigue, particularly during multiple events occurring in different parts of NSW • There is resistance among EM volunteers for people to fly / travel out of their own region too frequently • Emergencies can cause staffing issues for local government because 'they divert their day staff for emergencies and that can go on for long while' • Frequency of events is also an issue 'if you get another flood event, you're still recovering from last one' • For post-flood there is rarely extended psychological support *Enablers* • The sector has improved the way it manages psychological issues such as depression for its staff • Rural support program – there is drought support – rolling out through Department of Primary Industries–external agents hired to do this. Churches and non-government organisations are also offering support to the community	**Where is change needed most/least?** • Maintain and expand the mental health support programs on offer to EM volunteers, local professionals and the community to deal with the lasting effects of extreme events

Indicator	Capacity to adapt		
Knowledge	**What does the indicator mean?** EM sector actively seeks to learn from experience and incorporate it into its planning for future events. But they are yet to really think forward to how things may need to change due to climate change.	**What is stopping/promoting change?** *Constraints* • Ageing workforce can see the loss of experience as older staff retire • A common assumption is that every flood is the same • Community recognition of what EM truly is and the coordination across sectors required, before, during and after *Enablers* • EM planning assumes new challenges will arise and so there is an inbuilt flexibility to the approach which is likely to prove useful for other sectors and for climate change where many of the impacts are unexpected • The sector is getting better at the situational awareness in the response and recovery phase of an event	**Where is change needed most/least?** • Engage the community to ensure there is an appreciation of the complexity of emergency management and their role in it • Promote emergency management to younger people to ensure availability of future volunteers for the sector • Need for experience of retiring staff to be passed on to the younger generation before they retire
Social			
Regional sector networks	**What does the indicator mean?** Improving communication between services is always the most critical aspect of the emergency management sector. 'There is always room for improvement'. Outside of events it is the communication and networks that give you better trust in doing your own job during an event because you know that others are doing their jobs and you can rely on them'.	**What is stopping/promoting change?** *Constraints* • During an event, agencies tend to do their own thing, but with better communication this could be done better • While the community is moving to make greater use of social media, adoption by government is constrained • Absence of EM agencies as a 'loud' voice of authority in the social media space during an event • Loss of key staff with the networks and knowledge • Still trying to meet the emerging need/expectation for instant access to key information by the community (road reopening, return of power, water, etc.) *Enablers* • The network is currently growing because Local Land Services is planning to cross-train all staff to have some active role in EM • There is an increased expectation for instant information – both for external stakeholders and within government' • 'There are formal meetings but there are also personal networks where there are informal conversations happening between people who know each other'	**Where is change needed most/least?** • Seek to improve the networking and information exchange opportunities across the emergency management sector • Improve usage of social media as a means of communication during an event

Indicator	Capacity to adapt		
Vertical government connections	**What does the indicator mean?** Changing media and the community need for information is driving change in the connectivity required between levels of government and within agencies (central versus regional/local).	**What is stopping/promoting change?** *Constraints* • Insatiable demand from outside the region for 'instant 360 degree communications' • Absence of communication can be perceived as lack of control over a situation • Increasingly media driven aspect to communications to get the communications looking good fast • High pressure to make early declaration of a disaster, before damage estimates can be made • More frequent events could lead to an upward shift in the disaster declaration thresholds • Big events are being recognised as an opportunity for display of leadership by political leaders. Need to ensure that politically driven responses are appropriately targeted *Enabler* • Situational awareness prior to an event is improving through pre-event briefings for local staff, but need to ensure all combat agencies have similar structured access to key information	**Where is change needed most/least?** • Ensure emergency management retains the right balance between 'bottom-up' and top down process/control • Provide support for damage estimation • Provide better support for communication during an event
Social media	**What does the indicator mean?** There are mixed feelings in the sector about the value of social media in emergency events. But despite the problems, social media is seen as the way of the future.	**What is stopping/promoting change?** *Constraints* • Misinformation on social media has been a problem • Absence of information will see media pick up whatever they can get • Concern that the constant information on emergency warnings or informal social media may make the community complacent and not take warnings seriously • NSW Health currently has no access to social media *Enablers* • The availability of official information can circumvent problems with social media	**Where is change needed most/least?** • Increase access to social media for agencies in the region

Indicator	Capacity to adapt		
Natural			
Narrow coastal strip	**What does the indicator mean?** The North Coast region is made up of a narrow coastal strip with lots of rivers. Flooding is the most important event to manage in this region and also has the biggest impact.	**What is stopping/promoting change?** *Constraints* • Protecting people with levees has meant people have become less familiar with how to respond during flood • Leadership is needed to drive a more strategic response to developing outside of at risk areas • Short term political cycle can inhibit longer-term strategic thinking *Enablers* • The emergency management sector is well adapted to the rapid response needed to cope with the large variation in river levels	**Where is change needed most/least?** • For primary industries in particular, develop state and federal grants for natural events that focus on proactively reducing impacts rather than simply recovery after an event
Physical			
Residential development	**What does the indicator mean?** Residential development on the North Coast to accommodate rising population can make the work of the emergency management sector more difficult if it fails to incorporate hazards from extreme events.	**What is stopping/promoting change?** *Constraints* • Highest density of development and population is on the coast • Growth strategies are putting people where they want to live • Variations between council controls are exploited and used to pressure more restrictive councils • Individual councillors are not liable for the decisions they make on behalf of council • Signals from the 'market' are very weak and not driving community behaviour change • People see the impacts as so far off that they won't be affected, they can transfer the risk (through sale) well before they will be affected	**Where is change needed most/least?** • Ensure a proportion of recovery funding is tied to improvement rather than just replacement of infrastructure • Seek greater incorporation of climate hazards into development approvals

Indicator	Capacity to adapt		
Equipment	**What does the indicator mean?** The sector is heavily reliant on buildings and equipment to operate effectively under the conditions of an extreme event.	**What is stopping/promoting change?** *Constraints* • High cost of EM equipment to meet the high specifications needed • High maintenance costs of equipment – often infrequently used • Pressure for lowest cost tender • Poor siting of some Emergency Management Centres • The sector is also heavily reliant on the electricity supply and telecommunication systems • Many organisations going to Voice Over Internet Protocol (VOIP), 'but if you lose internet or power you lose it. So going back to phone lines'	**Where is change needed most/least?** • Ensure procurement processes reflect the requirement for cost effectiveness not simply lowest cost, to ensure quality standards of equipment and 'fitness-for-service' in emergency management
Financial			
Funding emergency management	**What does the indicator mean?** Existing funding arrangements for emergency services are complex and see rural land holders pay 4 or 5 times for the same service.	**What is stopping/promoting change?** *Constraints* • Community engagement and risk management side of EM is often targeted for cuts as it is harder to demonstrate its effectiveness, e.g. what would have happened in an emergency if the sector had not been in operation? • No disincentive for 'being stupid' during an emergency • Complex and convoluted funding arrangements for Rural Fire Service can see rural landholders pay multiple times for the same service and others none • Local government has the power to charge a levy for fire services but currently there is 'fear if local government do that (impose a levy), then local government will have to do it (provide the service)'! • At a local level, local governments don't have input on what their contributions to RFS or SES will be *Enablers* • Aggregating combat agencies under 'one banner' could offer improvement • The Police Service is more active now in saying to people undertaking risky behaviour 'you're an idiot for doing this'. This approach appears to send a behaviour change message to the community	**Where is change needed most/least?** • Consider aggregation of emergency services to improve efficiency and cost effectiveness of the sector • Provide additional support for community engagement on emergency management • New models of funding for emergency services could incorporate user-pays approaches for people ignoring directions like driving into flood water and needing rescue

Indicator	Capacity to adapt		
Incentivising volunteers	**What does the indicator mean?** There is a declining trend in volunteerism in the emergency management sector which requires attention.	**What is stopping/promoting change?** *Constraints* • Business profitability is affected when self-employed volunteers or volunteers employed in small businesses are required • Private sector employers are less supportive of staff volunteering where they are deployed interstate *Enablers* • Volunteers in public service roles are generally released during emergencies • Private sector employers are supportive of staff volunteering where there are direct community benefits	**Where is change needed most/least?** • Examine new ways to incentivise private sector employers to release emergency management workers during extreme events that recognise the constraints on small business and the self-employed • Providing incentives to volunteers directly is not the preferred approach

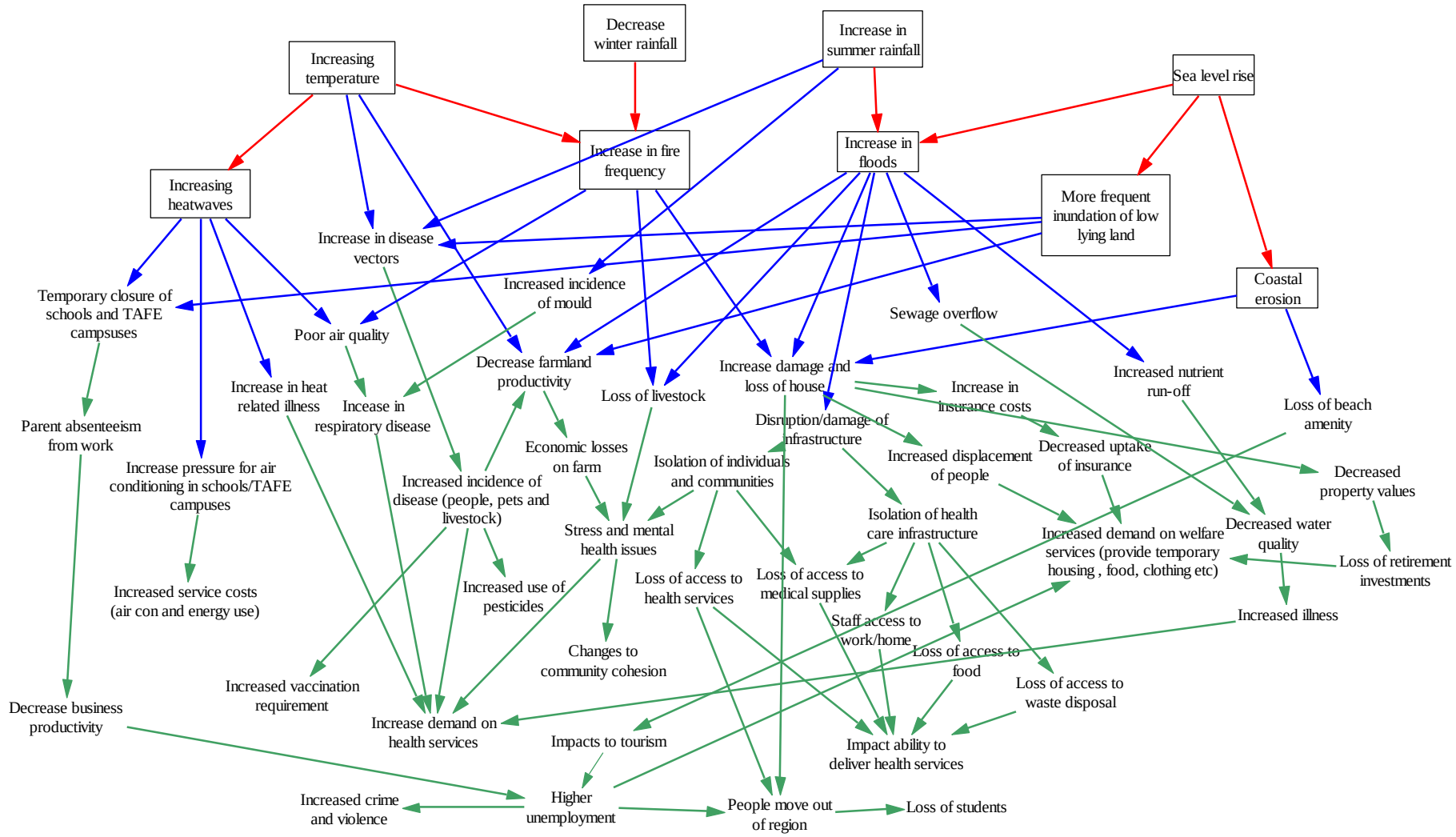
6. Human services sector

6.1 Workshop participants

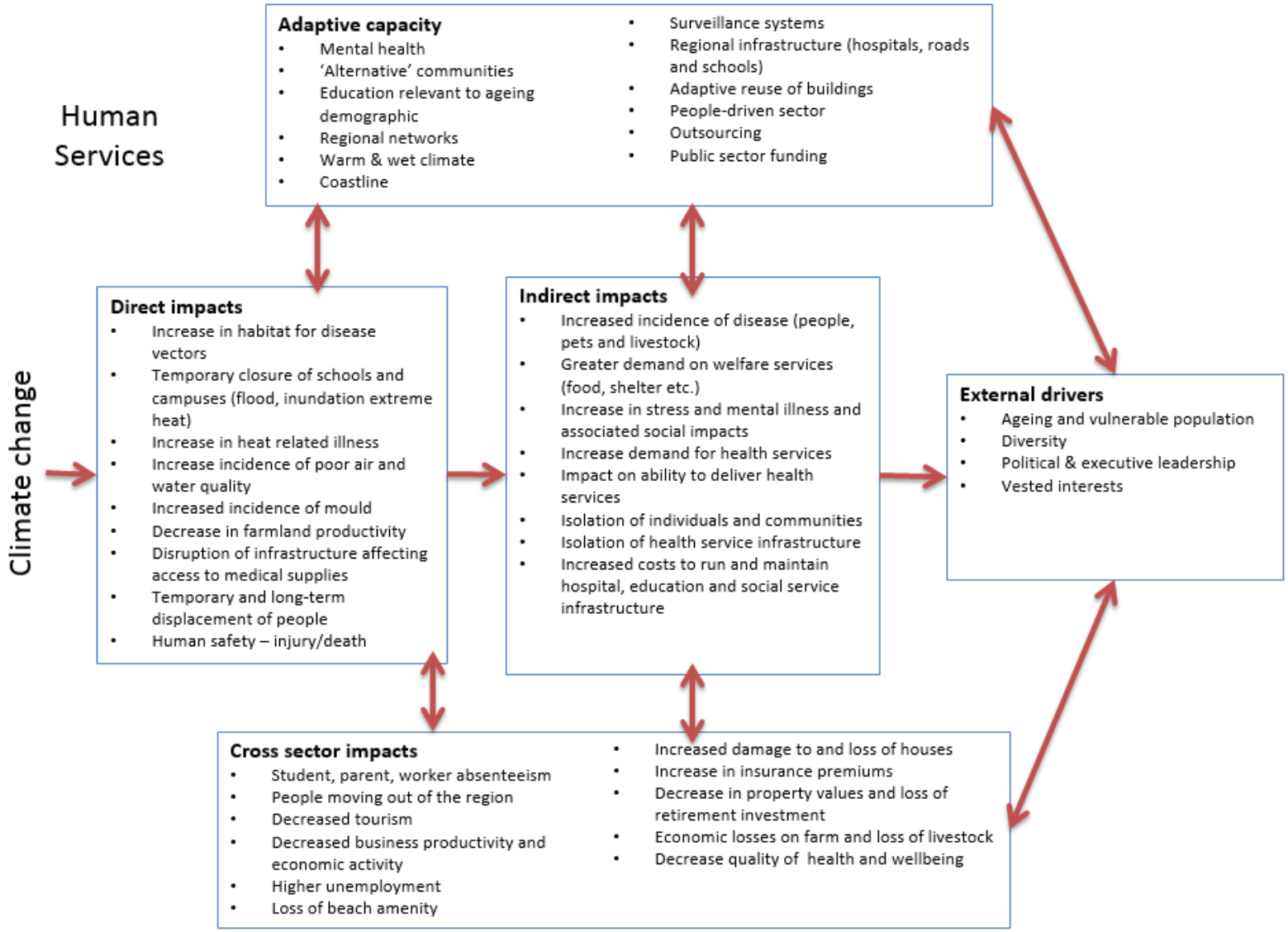
This workshop was held at the Coffs Harbour RSL on 10 and 11 March 2014, with 12 attendees from the following organisations:

- Bellingen Shire Council
- Department of Education and Communities
- Department of Family and Community Services
- Department of Premier and Cabinet
- Mid North Coast Regional Organisation of Councils (MIDROC)
- North Coast Area Health Service
- Office of Environment and Heritage
- TAFE NSW

6.2 Findings: Impact pathways for the human services sector



6.3 Findings: Vulnerability diagram for the human services sector



6.4 Findings: key vulnerabilities and adaptive capacity of the human services sector

The following indicators and descriptions are adapted from the discussions between workshop participants at the human services workshops.

Indicator	Capacity to adapt		
Human			
Ageing and diverse population	**What does the indicator mean?** There are multiple demographic trends that will drive the region's vulnerability to climate change.	**What is stopping/promoting change?** *Constraints* • An ageing population that is less mobile and will drive demand for health and aged care services • Older people have longer stays in hospitals • Ageing trend is driven by low birth rate, influx of retirees and youth leaving the region for education and jobs • Lifestyle of the retirees sees a greater reliance on government services • Evacuation in emergencies is 'difficult for older people because they are unwilling to move, we are unable to force people out but we can suggest that they evacuate' • Aged care reforms typically translate to cost cutting, which will disproportionately affect the region and its economy • Use of GP services as a means for older people to socialise • The sector is also called on to service a large seasonal and transient population. 'Population doubles during harvest time and tourism season' • Large proportion of small business and lower management skill levels mean business planning and workforce planning are not done well *Enablers* • Retirees looking for something to do could be directed toward volunteering • Services follow people – aged people will still drive services	**Where is change needed most/least?** • Seek enhanced funding to support demand for regional volunteer training • Establish a skills mentoring program to build volunteer skills • Encourage partnership with the media to promote a 'check on/know your neighbour' campaign • Build capacity around self-management during emergency events

Indicator	Capacity to adapt		
'Alternative' communities	**What does the indicator mean?** The North Coast has a large, relatively invisible alternative lifestyle community.	**What is stopping/promoting change?** *Constraints* • The alternative communities are 'embedded in bushland, the large hinterland because it's a nice place to live, but also high risk' • They are often groups of people who are opposed to authority and seek seclusion • Their dwellings are not approved, which leads to legacy issues • Local government is made aware of issues through safety incidents • They can be difficult for government to engage with and they don't perceive themselves to be at risk • Alternative community members are less likely to immunise their children *Enablers* • Some of these alternative communities are well organised and self-reliant, but they are the exception	**Where is change needed most/least?** • There is the potential to make champions of leading 'joint tenancies'
Education	**What does the indicator mean?** Education was seen as central to the community's capacity to adapt to climate change. Education opportunities are needed to retain youth but also ones that target the older demographic.	**What is stopping/promoting change?** *Constraints* • Education focus is on the region's youth and doesn't meet the needs of the older demographic • Lack of education opportunities is contributing to the region's ageing population trend • New learning technologies are harder to employ with older population • Climate change information can be challenging for young people to deal with emotionally • Core personal development skills (e.g. resilience, self-esteem, problem solving) have been lost from the curriculum *Enablers* • Universities are starting to change their mode of delivery – decentralising, and are starting to see a retention of young people in the region • Good network of environmental education centres in the region	**Where is change needed most/least?** • Need for better engagement between business, youth and education providers to create a shared understanding of the region's employment needs and opportunities • Seek greater support from regional businesses for training in climate change adaptation linked to sustainability through TAFE • Greater consideration and opportunities for inclusion of the ageing population in education on the North Coast • Support environmental education centres to deliver appropriate information on climate change to the region's children

Indicator	Capacity to adapt		
Mental health	**What does the indicator mean?** All sectors of government, not just specialists, contribute to delivery of mental health services.	**What is stopping/promoting change?** *Constraints* • Mental health services in the region are under-resourced but there is capacity to better utilise what is available on the North Coast	**Where is change needed most/least?** • Need to try to address mental health issues before they become a problem • Seek greater collaboration across human service sector providers on mental health • Need to know how to build resilience (in the community) to avoid mental illness
Social			
Regional networks	**What does the indicator mean?** The sector has good networks in the region but only around core issues.	**What is stopping/promoting change?** *Constraints* • Human service agencies are not focused on risk • Core business term is misused to say 'this is only what we do' rather than 'we do this stuff and the stuff around it', particularly as 'core' business is shrinking • A lot relies on personal (informal) relationships and networks • Personal relationships within and across agencies are easier to maintain and networks built in the region if you are running into people all the time – opportunities are declining • It can be difficult to coordinate action that requires engagement of the federal government • Local government action on climate change can be heavily constrained by community perceptions and community pressure • Not all councils have a fulltime environment officer • Support networks within families are weaker because of changing family demographics *Enablers* • A strategic approach to emerging health issues would likely see climate change more prominent • A culture of collaboration across agencies is starting to emerge and being promoted by the Department of Premier and Cabinet • Every council report has to have a sustainability element, which embeds consideration (of the environment) as an everyday issue	**Where is change needed most/least?** • Make the case that climate change adaptation is core business of government in the region • Strengthen cross-border communication and networking to avoid contentious development issues • Extend research findings on social networks and resilience to demonstrate their importance in climate change adaptation

Indicator	Capacity to adapt		
Political and executive leadership	**What does the indicator mean?** If dealing with climate change impacts is not a priority for political or executive leadership then there is no immediacy in the need to act.	**What is stopping/promoting change?** *Constraints* • Unfortunately there are community 'thought leaders' such as some elected leaders or 'shock jock' type leaders who play a role in influencing the climate change discourse • People are quick to adopt the position of the media without critical analysis	**Where is change needed most/least?** • There needs to be a more diverse discussion of climate change among 'multiple voices and leadership levels to combat misinformation'
Natural			
Warm and wet climate	**What does the indicator mean?** The North Coast has a climate that is relatively warm and wet. This climate presents some problems for health services as the 'region is an incubator for disease vectors, new diseases, and health threats generally'.	**What is stopping/promoting change?** *Constraints* • The region's climate presents some problems for health services as the 'region is an incubator for disease vectors, new diseases, and health threats generally' • Part of the problem of the viability of agricultural production stems from consumer preferences • The region 'can't support extensive cropping but can be used to create local markets for local produce' • Decline of regional research and extension capabilities in agriculture may limit adoption *Enablers* • Agriculture 'utilises the region's goods soils, highest rainfall in the state and good growing capacity' which results in a high 'diversity in agricultural production nationally' • Spiritual and emotional links with the land are strong with people in the region; people come here for the natural beauty and connection with the environment. Connection with the land is drawn from its natural values	**Where is change needed most/least?** • Support local research and extension services to ensure the region's capacity to exploit future opportunities in agricultural production • Create value in locally grown food

Indicator	Capacity to adapt		
Coastline	**What does the indicator mean?** The extensive coastline of the region ensures a focus of adaptation in the future will be sea level rise.	**What is stopping/promoting change?** *Constraints* • Coastline is vulnerable because of sand dunes and beach rather than rocky coast • Planning of physical infrastructure will be more costly • Multimillion dollar properties on sand dunes will be at risk • The power and wealth of developers acts to constrain the most effective risk reduction options for adaptation • Legacy effects of sand mining along the coast mean it is less resilient • As the market value of minerals rises spoil dumps in areas already mined might be re-examined for mineral extraction	**Where is change needed most/least?** • Ensure sea level rise risk is incorporated into coastal infrastructure planning • Examine the mechanisms of disposal of Crown lands to take account of climate change risk • Foster greater appreciation of coastal dunes in providing a buffer from effects of coastal erosion
Physical			
Surveillance systems	**What does the indicator mean?** There are extensive and well established systems built around surveillance of disease in NSW, Australia and globally.	**What is stopping/promoting change?** *Constraints* • Understanding trends over time is critical in using health information. No information is worth anything until you have done it for a while and can spot trends and change • These surveillance networks are important to maintain for continued resilience *Enablers* • The region looks over the border to coastal areas in Queensland with similar climate to understand and prepare for the changes predicted under climate change • NSW Health collaborates in these surveillance systems, such as the Communicable Disease Network Australia, to track, monitor and control potential outbreaks of disease	**Where is change needed most/least?** • Include heatwave related illness and food spoilage in regional surveillance to understand trends resulting from climate change

Indicator	Capacity to adapt		
Regional infrastructure	**What does the indicator mean?** Regional NSW generally has a lack of infrastructure or is serviced by aged infrastructure.	**What is stopping/promoting change?** *Constraints* • Investment in infrastructure is irregular • Infrastructure spending is often given and then taken away • Model of service delivery now focused on major comprehensive hospitals being developed in large centres while small hospitals offer palliative care and rehab • School infrastructure is considered 'out dated' because extensive use is made of demountable classrooms • The region also has a high transient school population and road works lead to changes in numbers – permanent student numbers are the determinant of funding • Many older buildings in education were not designed for human comfort in high temperatures • There is an expectation in the community that 'buildings are air conditioned – when it does go in it is used all the time rather than only when needed' • Road system crosses a large number of regional river systems which means that the North Coast has the 'most timber bridges in the country' which are expensive to maintain, some requiring replacement • Roads are often 'returned to local government control without the dollars to address adequate maintenance' *Enablers* • The Pacific Highway upgrade • Some infrastructure critical to human services is being upgraded. 'Coffs Harbour, Lismore, Byron, Kempsey, Port Macquarie, Grafton – many hospitals in the region were built in the 1950–60s and this is being addressed'	**Where is change needed most/least?** • Seek support from state and federal governments to address the regional infrastructure repair and maintenance backlog
Adaptive reuse	**What does the indicator mean?** Some government owned assets like TAFE buildings are used for other community purposes providing a public benefit.	**What is stopping/promoting change?** *Constraints* • Online learning is changing things and people are learning around work, leading to lower utilisation of public buildings (e.g. TAFE) • Potential to lose use of buildings by growing pressure to sell underutilised assets; they will be lost to the detriment of the community	**Where is change needed most/least?** • Consider adaptive reuse of built assets to support the community as an alternative to sale to commercial interests

Indicator	Capacity to adapt		
Financial			
People-driven sector	**What does the indicator mean?** The people in the human services sector are the key asset. The view of participants is that funding is important and that the sector's work is fundamentally carried out by people.	**What is stopping/promoting change?** *Constraints* • Our infrastructure is old and degrading • Demand for services to cater for an ageing population is growing • We are not well prepared for the growth in demand from our ageing population *Enablers* • People are the key asset	**Where is change needed most/least?** • Recognise that people are the primary asset of the human services sector and invest in them accordingly
Public sector funding	**What does the indicator mean?** There are multiple challenges within the sector about public funding for human services.	**What is stopping/promoting change?** *Constraints* • Ability to have a genuine debate with the community about services is being lost • The pace of change in technology and the ability of TAFE to maintain and update technology to ensure the currency of training outcomes • Councils are becoming increasingly less able to maintain infrastructure and community assets • Large infrastructure backlog • North Coast weather plus high tourism traffic combined have a high impact on roads • Costs of repair and maintenance of assets are not transparently factored into the construction of assets • Maintenance of hi-tech plant and equipment to deliver TAFE training is expensive and requires specialist skills • Potential sale of TAFE assets prompts questions about the level of influence and control the sector will have under a sell and lease back model of property assets	**Where is change needed most/least?** • Focus the debate about funding models on service delivery to the community • Factor into infrastructure funding the costs of asset maintenance • Need to see true costs of (community) lifestyle choices

Indicator	Capacity to adapt		
Outsourcing	**What does the indicator mean?** Pressure to reduce the cost to government of delivering services is driving a shift to services being delivered by NGOs.	**What is stopping/promoting change?** *Constraints* • Use of outsourcing is viewed by the community as cost shifting • Growing trend for services to be delivered by for-profit businesses rather than not for profit non-government organisations • Charity sector appears to be decreasing and less diverse • Vulnerable people have complex needs • Small organisations in the region will lose out to big organisations and this results in a one size fits all service	**Where is change needed most/least?** • Recognise that out sourced services may not be better for the community