

# VCCCAR

## think tank report

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### Towards a Gippsland regional climate adaptation study

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victorian centre for climate change adaptation research

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# Executive summary

Adapting to new environments caused by both structural adjustment and climate change can be likened to the challenges facing a novice sporting team. The players know some of the rules and principles, but their efforts are uncoordinated and sometimes counterproductive. As a new player in climate change adaptation, Gippsland is at risk of not adapting successfully to a rapidly changing world. This could lead to undesired social, bio-physical and economic outcomes.

The Gippsland Local Government Network, the Victorian Department of Primary Industries and the University of Melbourne recognised this challenge and convened a think tank at Ellinbank on 9 August 2011. The goal

was to stimulate discussion on required research and to promote collaboration that would meet the long-term goal of a region that is resilient to future climate and structural change. Specific emphasis was on the relationship between the broader Gippsland community and those involved in primary production, excluding mining and power generation.

This report describes the design, key questions, discussion and responses generated at the think tank. These key messages for policy and recommendations for research emerged from the discussion:

Key message	Policy response	Research and development direction
The current level of information and knowledge exchange between industry sectors and communities of interest is inadequate for robust decisions to be made that will drive regional growth.	A systemic approach should be taken to information gathering, analysis and sharing across each level of government, industry and the community where there is common interest.	Research should be directed towards determining information needs common to the various sectors and discovering mechanisms for sharing this information in meaningful way to achieve resilient regional growth.
The current <i>modus operandi</i> in Gippsland is an 'open loop' process of gathering resources, using them once and discarding them. For long term, sustainable regional growth a 'closed loop' is required where resources are used repeatedly, whether it be water, nutrients, or social and economic capital.	Gippsland should be driven towards a culture of 'closed loop' systems where the maximum benefit is made of scarce physical, social and economic resources.	The flow of biophysical and social resources in Gippsland should be examined to determine how these could be redirected to a closed loop economy that can amplify regional growth and adapt to climate variability and structural adjustments.

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# Think tank approach

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Organisers included government representatives, university researchers and members of the Gippsland Climate Change Adaptation Study Steering Committee. It was determined that:

*“The principles of our research, and this think tank, are to enable a change in mindset of stakeholders, so they are in a position to recognise opportunities and create the conditions necessary for collaboration. We want to unearth the potential for synergy by ensuring realistic, reliable knowledge is readily available for all stakeholders in the system.”*

With this in mind, it was decided to bring together 60 to 70 people to realise the possibility. The list of attendees is attached to this report (Appendix 5). They included:

- Local government staff including CEOs and planning officers
- Councillors with an interest in climate change adaptation issues
- Gippsland region senior managers from a range of government departments
- Melbourne based senior managers from a range of government departments
- Representatives of a range from natural resource management authorities
- Representatives from agriculture, agribusiness, and transport companies
- Researchers from Monash University (Gippsland and Clayton) and the University of Melbourne.

## Design principles

- Community ownership is central to success - *this ownership extended to the invitation process as well as the participatory nature of the workshop itself.*
- Sustainable agreements and good ideas emerge from dialogue between groups of people - *at every opportunity we designed conversation into the workshop process.*
- Self organisation is a key operating principle in nature as well as networks of people - *participants were invited to shape the agenda with their own topics for group conversations.*
- It's about them and not all about us - *we created the conditions for people to strengthen existing relationships and build new ones ... the workshop hosts also viewed this workshop (and the outputs) as a key learning opportunity to inform a research proposal.*

## Event overview

### Welcome

Helen Antis (CEO of Baw Baw Shire) opened proceedings and Associate Professor Colin Duffield (University of Melbourne) gave a brief overview of the Gippsland Climate Change Adaptation Study and planned future work that would be informed by the Think Tank (Appendix 1).

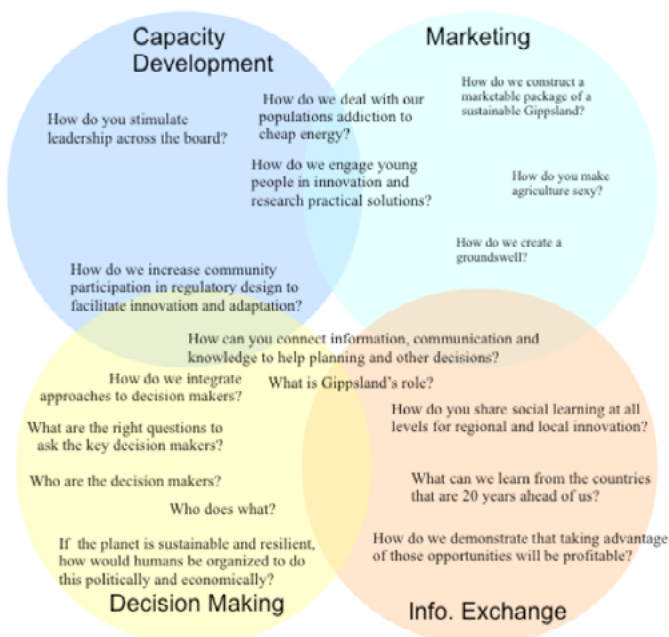
The workshop facilitator, Geoff Brown, invited participants to talk about why they came and explore the context for the think tank and the research project.

### Keynote presentation

Professor Andrew Campbell provided a scene setting presentation 'Positioning Gippsland for a carbon, nutrient, energy and water constrained world' (Appendix B). Participants discussed key messages and formulated questions that were shared with the group. A whole group discussion followed.

Focus questions for the afternoon conversations were presented. Participants were encouraged to consider these over the lunch break and add their own questions.

Figure 1. Questions arising from keynote address categorized into four themes.



### Group conversations

New questions emerged from participants who selected the question that mattered most to them. Each table had a designated host who took notes on the main ideas discussed. Participants then rotated to another table to contribute to a second question of their choosing. Each host gave a brief report back on the main ideas.

### Converging to key ideas

Individuals were then invited to reflect on two questions, which were intended to stimulate discussion on future directions for the development of a Gippsland adaptation strategy:

1. What are the no-regrets decisions I take now to adapt to the future under climate change?
2. What are the no-regrets steps my organisation can take now to adapt to the future under climate change?

Individuals shared their responses and formed groups with other like-minded participants (e.g. planners with planners & researchers with researchers). This process provided the main themes. Groups of professionals developed and shared ideas in order to contribute to future research.

### Close

Proceedings were officially closed by Professor Craig Pearson (University of Melbourne) with closing comments by Graham Moore.

## Think tank outcomes

Some of the questions stimulated by the keynote address:

1. How do you share social learning at all levels for regional and local innovation?
2. How do we integrate approaches to decision making?
3. How do we construct a marketable package of a sustainable Gippsland?
4. How do we demonstrate that taking advantage of those opportunities will be profitable?
5. Who does what?
6. Who are the key decision makers?
7. What are the right questions to ask the key decision makers?
8. How do we increase community participation in regulatory design to facilitate innovation and adaptation?
9. How can information, communication and knowledge to help planning and other decisions be connected?
10. How do we deal with our populations' increasing use of energy?
11. How do we engage young people in innovation and research practical solutions?
12. What can we learn from the countries that are 20 years ahead of us – that have put a price on carbon?
13. What innovative thinking has occurred around water, food and energy?
14. How do we create a groundswell for change?
15. How do we stimulate leadership across the board?
16. Suppose we fix carbon, population, soils, water, etc, and in 100 years time the planet is sustainable and resilient, how would humans be organised to do this politically and economically?

These questions were analysed and classified into four categories to inform future research:

- Capacity development
- Marketing issues
- Information exchange needs
- Collaboration and decision-making.

These were mostly of an organisational nature rather than a technical nature. (Figure 1). Naturally, some questions crossed classification boundaries.

## Group conversations and responses

Nine focus questions were posed for the group conversations:

1. **What information flows need to exist to enable Gippsland organisations, businesses and communities to plan for future prosperity?**

Responses concentrated on mechanisms for information flow rather than information required for planning. The information was often actually available, if communication channels were clear, and getting a broader signal to the wider community was an issue. There was some focus on the future and the potential role of the National Broadband Network and social networking. Others asked how to improve information flows of current organisations such as GCCN, Committee for Gippsland, GLGN, Regional Managers Forum and other bodies. The role of local newspapers and the possibility for a full page climate action page to capture local activity and events was floated.

Apart from the broader community, it was also felt that better provision of information to decision makers was required.

All in all, it was felt that there was a lot of information, but it was not well marshalled or easily accessible to the right people. Putting effort into finding a regional solution to this would be worthwhile. The current South Gippsland eCommunity project may be a step in the right direction. Leadership from local government would be welcome.

2. **What primary production activities could flourish to underpin Gippsland's desirable future?**

As resources become scarcer, there is a tendency to direct them to higher value, more intensive enterprises. As a consequence, enterprises that could flourish include permanent and annual horticultural crops, dairy based on crops rather than pasture, and cropping systems that are typified by high input, high output production that might use raised beds or precision agriculture techniques.

3. **How will Gippslanders exchange goods and services with themselves, the rest of Victoria, Australia, and the world?**

Information and quality in the processes of exchange of goods and services were key concerns. Exchange may not take place in a very competitive environment, unless Gippsland can make use of, and articulate, its advantages through robust information systems. Online trading and e-commerce were considered important, as were building 'brand' quality, trust and value adding to products produced in the region. The importance of rail freight, ports and distribution centres figured prominently as was their perceived vulnerability to floods, fire or other natural and climate related disasters.

4. **If there is an influx of people to Gippsland due to climate change and structural adjustment where will they find homes and farm land?**

Scarcity of land resources due to population growth, demand for agricultural and industrial land, and loss of land due to sea level rise and flood risks were key issues. Planning processes needed strengthening to manage these pressures. For example, the creation of dormitory suburbs for Melbourne where there were few local employment opportunities was not seen as a good outcome. Concentrating housing close to public transport and services was important for an ageing population. Protecting good agricultural land was also important but finding a way to achieve this while meeting other needs was difficult. Current regulations were not flexible enough to meet a variety of needs and circumstances in the region. Local farmers felt under pressure from newcomers to Gippsland who had more capital than local landholders. This trend could expand with climate change, if the adaptation strategies of farmers from drier areas outside the valley involved moving to Gippsland.



**5. What governance arrangements are required to enable the community to better respond to change?**

A telling quote “3D governance is governance that does not see other governance organisations as a threat. They see them as a resource and fellow stakeholders and an opportunity to getting change to occur”. It seems that the group thought the current arrangements are some way from this ideal. Statutory planning frameworks were seen as ‘blockers’ and were too inflexible. Having the same planning framework for the non-irrigation districts of the Mallee region as the Bass Coast did not enable locals to respond to change effectively. Governance was equated to decision-making arrangements. There was some discussion about who can participate in a practical sense and that there was a need to increase the level of informed participants in the processes. The need to better connect, in an information sense, with government (local, state, federal) and other organisations (GCCN, universities, business associations, trade unions) was evident.

**6. How will agricultural enterprises meet their water needs?**

This could not be discussed in isolation from industrial and urban needs. Water security in Gippsland was not seen as a pressing issue over the last decade of drought in SE Australia, although it was potentially an emerging issue as climate change proceeded, population increased and the nature of agriculture changed.

The sustainable use of groundwater was an important point of discussion. Groundwater was seen to be a key resource for both stock and domestic use as well as for irrigation, but some group members felt the governance arrangements, allocation and monitoring for sustainable use were inadequate.

Recycling of water both within agricultural and other businesses as well as community and regional recycling was highly supported as a means of supporting the idea of closed loop systems. This general idea was seen as important for all aspects of transformation to adapt to a changing climate. Changes to agricultural practice and enterprises were seen as required to live with the restrictions of the available water supply.

Building more large storages was not supported because the group, including primary producers, felt regional river systems were already highly utilised and river health would suffer if they were exploited more.

**7. How will primary producers adapt to scarcity of energy, nutrients and other natural resources?**

This group focused on closed loop systems. Actions to achieve these included reducing losses of nutrients to runoff, improved agricultural/enterprise management, (for example by using legume crops and pastures), creating energy from biomass or oil seeds and importing nutrients from waste of nearby urban areas. These would require a range of basic and applied research ranging from breeding plants with low phosphorous, potassium and nitrogen demands to methods of efficiently and socially acceptably capturing and re-using human waste. Better communication and networking of farmers and urban dwellers would also be required. An important starting point is to ensure that careful planning is practised in deciding the best use of productive agricultural soils that takes into account more than its current real estate value.

**8. How do we ensure that Gippsland attracts an entrepreneurial workforce that can drive the innovations required for adaptation and transformation?**

This discussion centred on two themes. The first was to do with the required lifestyle to attract and an entrepreneurial workforce. Basic things such as transport, health and social services are key platforms to making a place attractive to live and work. The second theme was around motivation and training of young and older people within the region, and then having inspirational workplaces and projects to hold them or convince them to return.

### 9. How will we measure quality of life in the transition/post transition period?

The main themes emerging here were that traditional measures of financial wellbeing and continuous growth were not good measures of quality of life. It was acknowledged that there had been some response in quality of life indicators developed by the Australian Bureau of Statistics and Department of Planning and Community Development. Indicators around physical and mental health, happiness, non-depletion of natural capital, social fabric, intergenerational equity and food security were considered important. The idea of closed loop systems also came up in the conversation. Building resilience was considered important; it was observed that during the 1990s the response to employment and social upheaval in the Latrobe Valley was to encourage exit rather than build resilience. Social connectedness through information networks was considered important for good quality of life.

### Reflections

Participants were asked to reflect on some 'no regrets' measures in response to the issues raised (Appendix 3). These included:

- Closed loop farming systems
- Bio-energy systems
- Knowledge and information systems including NBN, performance monitoring, ecommerce, and social media
- Improved governance structures and procedures
- Improved infrastructure to assist adaptation
- Collaboration and cooperation
- Better and more flexible land use planning

Participants then considered possible organisational initiatives. These included:

- Risk knowledge and response
- Land use planning
- Lobbying for transformation
- Closed loop systems
- Knowledge and communications
- Research and education
- Transport
- Vision and leadership
- Cooperative government
- Family adaptation
- Food planning

## Think tank evaluation

Thirty-five percent of those attending the think tank responded to an evaluation questionnaire. A significant majority (87 percent) of respondents thought the mix of participants and presenters was appropriate for the event, while 67 percent felt that the think tank improved their understanding of the climate adaptation issues in the Gippsland region. Most respondents (83 percent) rated the scope and relevance of the issues discussed at the think tank as 'good' or 'excellent'. The keynote presentation and networking opportunities were especially well regarded. Some respondents felt the think tank could have been broadened to include discussion of sea level rise and other coastal impacts, the role of local government, technological responses to climate change and climate variability. Several respondents expressed the hope that the think tank would be a first step in developing more detailed, industry, geographical and demographically specific activities to aid adaptation planning.

## Conclusions

Two areas of need were identified, revolving around the concept of the Gippsland region as a system comprised of a series of nested subsystems including agricultural industries, governance, community groups and other industries.

The first area will involve knowledge and information management, clearly a key area of need coming from the think tank. Taking the above system approach, we plan to portray Gippsland as a series of viable systems that exchange information with the social, economic and biophysical environment horizontally and exchange information and take direction from their supra and sub systems vertically.

Models developed as part of this research will enable scenario planning and infrastructure requirements for the region. Given the identified areas of interest, applying this systems approach initially to closed loop farming, food strategies and land use planning, is valuable for research collaboration.

The second area involves biophysical modeling to explore possible scenarios of food and energy production in the region in times of climate change. This could include closed loop methods of agriculture or changing seasonal conditions. The GLGN has initiated research in this area with DPI. DPI have developed climate projections for the region and are modeling the suitability of commodities under future climate scenarios.

In both these areas, the emphasis of the Victorian Government on regional growth will be the focus. Participants or their organisations that wish to collaborate in these activities by seeking to assign resources (either in kind, monetarily or by participating in joint grant applications) are encouraged to discuss these aspirations with Rob Faggian at DPI or Graham Moore at the University of Melbourne.

# Appendix 1: Think tank agenda

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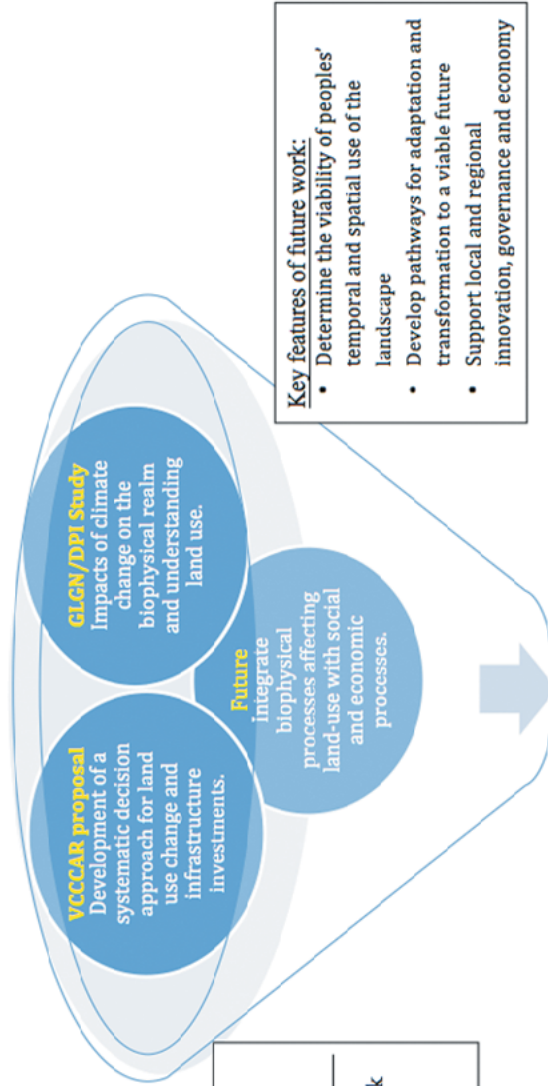
## Think tank agenda

11.15 am	<b>Arrivals and morning tea</b>
11.40	<p><b>Welcome</b> Helen Anstis CEO Baw Baw Shire on behalf of the Gippsland Local Government Network</p> <p><b>Context</b> Associate Professor Colin Duffield, University of Melbourne, will give a brief overview of the Gippsland Climate Change Adaptation Project</p>
11.50	<p><b>Who is here?</b> Introduction to the range of people attending the think tank</p>
12.00 noon	<p><b>Keynote Speaker</b> Professor Andrew Campbell Charles Darwin University 'Positioning Gippsland for a carbon, nutrient, energy and water-constrained world'</p>
12.30 pm	<p><b>Interactive Lecture</b> <i>Groups to devise key questions to discuss with Professor Campbell</i></p>
1.00pm	<b>Lunch</b>
1.45pm	<b>World Cafe Style Conversations</b>
2.45pm	<p><b>Whole Group Conversation to sum up priorities</b> <i>Next Steps in research program. Commitments of the attendees.</i></p>
3.10pm	<p><b>Summary and Close</b> Professor Craig Pearson, Melbourne Sustainable Societies Institute, University of Melbourne</p>

# Appendix 2: Overview of the Gippsland climate adaptation study

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Appendix 2: Overview of the Gippsland climate adaptation study



**VCCAR Investigators:**  
 University of Melbourne  
 DPI  
 University of Hull  
 Monash University  
 Gippsland Local Government Network  
 DPCD/DTF  
 Interdynamics  
 Master Research

**Key features of future work:**

- Determine the viability of peoples' temporal and spatial use of the landscape
- Develop pathways for adaptation and transformation to a viable future
- Support local and regional innovation, governance and economy

To develop a vision and feasible opportunities for Gippsland's adaptation to climate change, and other drivers of change, to transform it into a low carbon society and economy.

Appendix 3:  
Keynote address by  
Professor Andrew  
Campbell

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## Repositioning Gippsland for a carbon, energy, water and nutrient- constrained world

ANDREW CAMPBELL

WARRAGUL 9 AUGUST 2011

Research Institute for the Environment & Livelihoods  
<http://riel.edu.edu.au>



## Outline

- **Converging Insecurities**
  - Climate
  - Water
  - Energy
  - Food
- **Sustainability & resilience**
- **Regional opportunities**
- **Repositioning Gippsland**

## Key Points

- The age of cheap, abundant fossil fuel energy is coming to an end
- The age of carbon accounting and pricing is here
- Water security will be a perennial issue for southern Australia
- Each of these has their own imperatives, but their interactions are equally, if not more important
- Regions that get their heads around these issues can start to reposition themselves for the 21<sup>st</sup> century
- There will be opportunities for the nimble & the smart

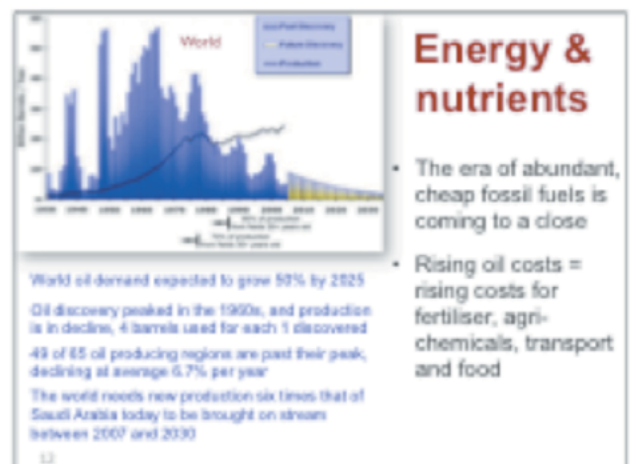
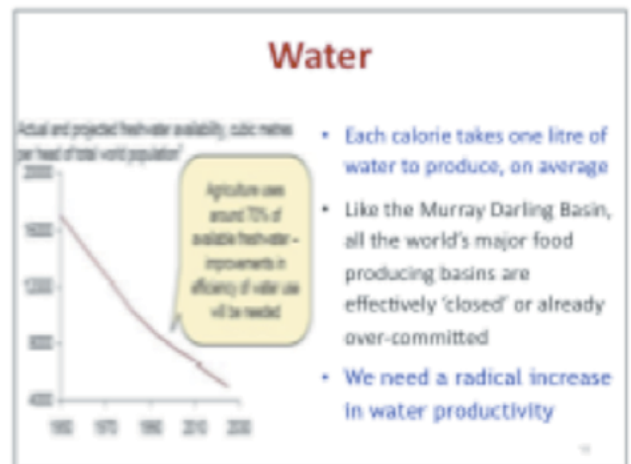
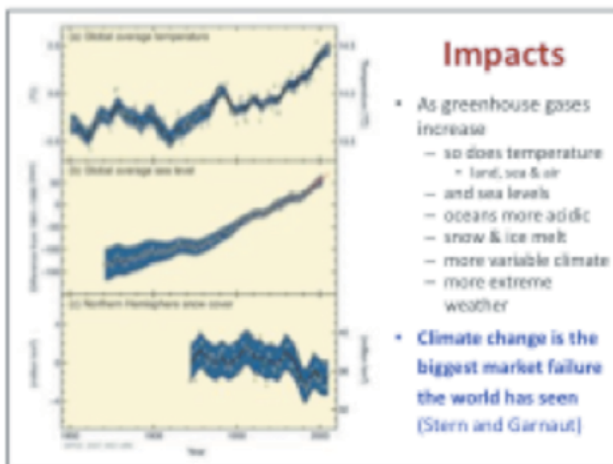
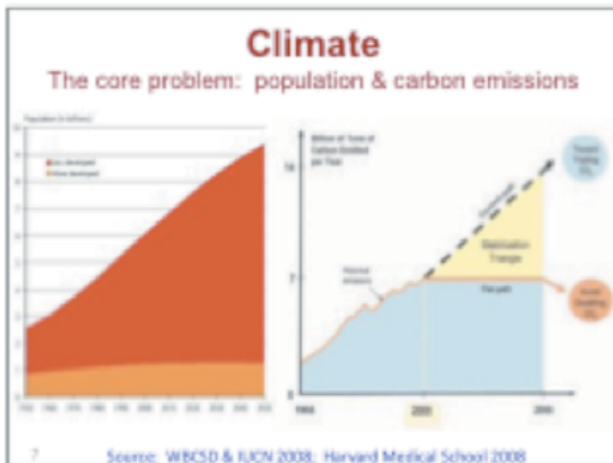
## Drivers for integrated regional and coastal NRM

- Climate
- Water
- Energy
- Food
- Demographic change and development pressures
- Competition for land & water resources
- Resource degradation

## The human footprint on the planet

	1950	2050
Population	2 billion	9 billion
CO <sub>2</sub>	310 ppm	>450ppm
Energy Use	80EJ/yr	>550EJ/yr
Sea Levels	————	0.2-1.5m higher

- This trajectory cannot be sustained without a radical decoupling of economic growth from resource depletion and degradation, and from emissions of greenhouse gases (GHG).
- Achieving such a decoupling is the most profound structural change the world has ever attempted



## Profound technical challenges

- To decouple economic growth from carbon emissions
- To adapt to an increasingly difficult climate
- To increase water productivity
  - decoupling the 1 litre per calorie relationship
- To increase energy productivity
  - more food energy out per unit of energy in
  - while shifting from fossil fuels to renewable energy
- To develop more sustainable food systems
  - while conserving biodiversity and
  - improving landscapes, soil health, animal welfare & human health
- TO DO ALL OF THE ABOVE SIMULTANEOUSLY!**
  - improving sustainability and resilience

## Scales for response to climate change



## Sustainability and Resilience

- Complementary concepts
- Sustainability remains relevant and desirable
  - Living within our means
  - Thinking long term (inter-generational equity)
  - Distinguishing between depletable and renewable resources
  - Avoiding or limiting actions that degrade, pollute, over-use or compromise ecosystem function
- **BUT:** Sustainability is less instructive around:
  - Social and economic dimensions
  - Operating in contexts with inherent variability

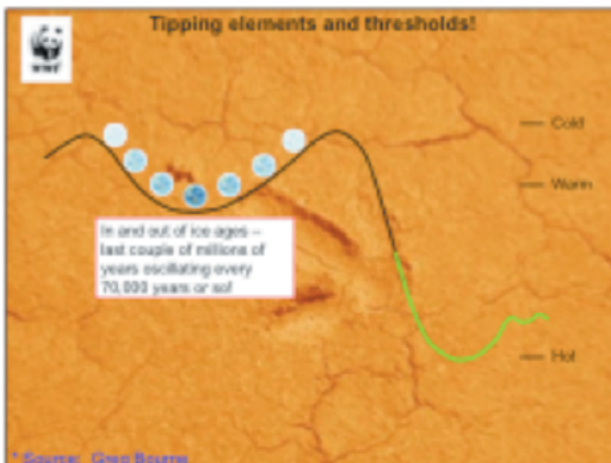
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## Resilience – the cool new kid on the block

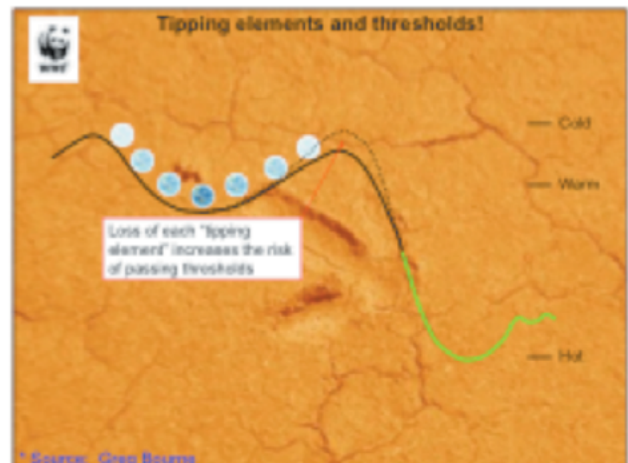
- Basically refers to the capacity of a system to absorb shocks, reorganise and retain the same functions
  - As resilience declines, it takes a progressively smaller shock to push a system across a threshold
- Adds value in explicitly embracing change and variability
- Introduces the useful concept of thresholds or **tipping points**
- Also embraces scale
  - Resilience at a given scale requires an understanding of at least one scale up & down

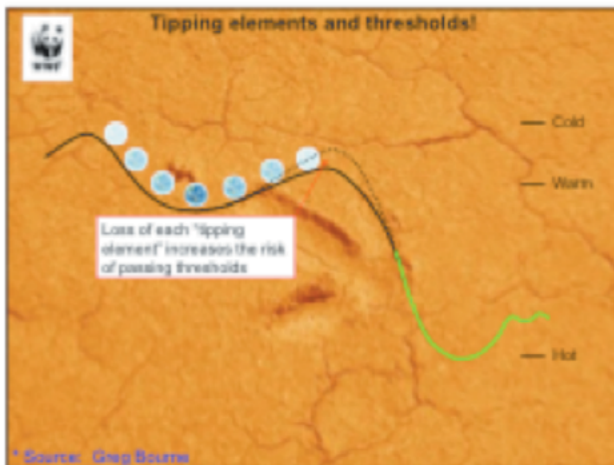


### Tipping elements and thresholds!



### Tipping elements and thresholds!





## Building resilience

**What determines resilience, in general?\***

- Diversity: biological, economic (e.g. energy sources), social
- Modularity (connectiveness, engagement)
- Tightness of feedbacks
- Openness – immigration, inflows, outflows
- Reserves and other reservoirs (e.g. seedbanks, nutrient pools, soil moisture, memory, knowledge)
- Overlapping institutions
- Polycentric governance & leadership

**Are any of these changing? Are any limiting?**

\* Source: Brian Walker  
<http://www.nature.com/news/building-resilience-papers.023>

## We need a third agricultural revolution

— what might it look like?

- Closed loop farming systems (water, energy, nutrients, carbon)
- Better understanding of soil carbon & microbial activity
- Radically reducing waste in all parts of the food chain
- Farming systems producing renewable bioenergy (2<sup>nd</sup> generation)
- Smart metering, sensing, telemetry, robotics, guidance
- Urban food production, recycling waste streams & urban water
- New/old food marketing systems, integrated with transport
- Detailed product specification
- 'Carbon plus' offsets and incentives
- Attracting young talent back into agriculture and rural communities

## Murrumbidgee Irrigation - a current case

- Bulk water distributor and seller in the MIA
  - \$1B GWP and \$7B value-add of food, wine and fibre production
- 100 year old irrigation & drainage network being modernised
  - Replacing 'leaky', gravity-fed open earthen channels
  - Piping and pressurisation will treble energy consumption
  - And hence greenhouse gas emissions
- Options:
  - Biomass energy plant – 0.5m tonnes p.a. of ag & food process waste
  - Solar thermal power plant on linear easements (C price-dependent)
  - Conversion to biogas
  - Carbon offsets through large scale tree planting
- Turning a water company into a water, energy & carbon company
  - Liberating opportunities through a more integrated approach



### Transition to carbon-neutral, energy-positive, water-smart rural landscapes

- “Carbon plus” grass-fed, rain-fed, red meat, cereals and oilseeds
  - significant offsets built-in to grazing & cropping systems
  - benefits for habitat, micro-climate, aesthetics, water quality, shelter, bioenergy and carbon
- Regional biomass energy plants using municipal waste & energy trees
- **BUT:** MS schemes show that, without good planning & controls, the market will default to large monoculture plantations replacing agriculture, not integrated into farming (**sub-prime carbon!**)
- Potential reductions in water yields and food security
- Huge regional planning & infrastructure implications
- **HENCE:** the integration imperative

## Land Use Planning & Design

- Vic already "post-agricultural" in some regions (Neil Barr)
- We have some elements of a new paradigm
  - Ecoservices etc
  - Carbon offsets market (Greenfleet et al)
  - New corporate players — e.g. VxSuper, energy companies
- And we know areas that need to expand
  - Water conservation
  - Habitat restoration and reconnection
  - Residential (600,000 new homes just for Melb)
  - Renewable energy (wind, solar, biomass, biogas)

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## How can this all 'fit' at a landscape and regional scale?

- The landscape needs to be re-plumbed, re-wired and re-clothed
- We need new regional planning approaches that:
  - are robust under a range of climate change & demographic scenarios
  - build in resilience thinking (e.g. improve habitat connectivity & buffering, protect refugia)
  - accommodate carbon pollution mitigation options (energy, transport, food)
  - safeguard productive soil and allow for increased food production
  - facilitate recycling of water, nutrients and energy
- Integrating and/or replacing regional catchment strategies and local government planning, zoning, rating and development approval processes

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## Regions next to big cities have opportunities

- Cities suck in water, energy and nutrients from their hinterland
- Much of which becomes waste
- Replumbing, rewiring and restamping is required on a massive scale
- Cities also suck in people, and are part of the solution, not the problem
- Gippsland should see Melbourne as a major ally and opportunity



## Innovation & Research Opportunities

- Urban food production (shorter supply chains)
- Forensic mapping of stocks and flows of water, energy, nutrients and biomass in urban and peri-urban areas to identify opportunities for use in food production
- Integrate the above 2 points into Food Sensitive Urban Design
- Opportunities from waste (e.g. algal biodiesel)
- Spatial optimisation for food, water, carbon & energy from a regional planning perspective
- Integrated farming of food, energy (biofuels & bioenergy) & carbon — site and landscape scale

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## The integration imperative

- **Managing whole landscapes**
  - "where nature meets culture" (Simon Schama)
  - landscapes are socially constructed
  - beyond 'ecological apartheid'
  - NRM means people management
  - engage values, perceptions, aspirations, behaviour
- **Integration**
  - across issues — e.g. climate, energy, water, food, biodiversity
  - across scales — agencies, governments, short-term, long-term
  - across the triple helix — landscapes, lifestyles & livelihoods

## Implications for communities

### PROFOUND SOCIAL CHALLENGES:

- To avoid scaring people, or perceptions of blame
- To bring people along on a challenging journey
- To build understanding, skills and capacity
- To honour the past, while inventing a new future
- To attract, reward and retain talent



## Repositioning Gippsland

- Identify champions, networks, linkages
  - Gippsland supporters, investors, nostalgics, alumni
  - Look for cross-sectoral alliances
- Invest in distributed leadership (e.g. shared training)
- Pilots, demonstrations, experiments, celebrations
- Develop a vision, a narrative, a buzz about 23°C Gippsland
- Look for ways to engage the community at all levels, from pre-school to retirement
- Network relentlessly, up, down, sideways, outwards (web 2.0)

**GO FOR IT!**

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## For more information

- e.g. *Paddock to Plate*
- *Policy Propositions for Sustainable Food Systems*
- *Powerful Choices: transition to a biofuel economy*
- *Managing Australian Soils*
- *Climate Change Primer for Regional NRM*
- *The Getting of Knowledge*

<http://riel.cdu.edu.au>

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# Appendix 5: Analysis of individual reflections

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### Appendix 5: Analysis of Individual Reflections



Figure 2. A tag cloud of the frequency of words occurring in the personal 'no regrets' measures.



Figure 3. A tag cloud of the frequency of words occurring in the organisation initiatives measures.

# Appendix 6: Gippsland think tank participants

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## Gippsland think tank participants

Mr	Craig	Birch	Senior Project Manager	Planning and Development Gippsland
Ms	Heather	Adams	Soils Extension Officer	Department of Primary Industries
Ms	Julia	Agostino	A/g General Manager, Economic Sustainability	La Trobe City Council
Mr	Rod	Anderson	Regional Manager	Department of Primary Industries
Ms	Helen	Anstis	Chief Executive Officer	Baw Baw Shire
Mr	Alex	Arbuthnot		Agribusiness Gippsland
Mr	Robert	Ashworth	Manager, Economic Development	Wellington Shire Council
Dr	Danielle	Auldist	Executive Officer	GippsDairy
Mr	Charlie	Beckley	Senior Policy Officer	Regional Development Victoria
Professor	Kurt	Benke	Senior Research Scientist	Department of Primary Industries
Ms	Tara	Brooker		Department of Sustainability and Environment
Mr	Patten	Bridge	General Manager, Sustainability	Murray Goulburn
Ms	Jane	Burton	Manager Stakeholder & Community Relations	Department of Primary Industries
Professor	Andrew	Campbell	Director, Research Institute for Environment and Livelihoods	Charles Darwin University
Dr	Matthew	Carroll	Senior Research Fellow	Monash University
Ms	Sharna	Cole		Department of Planning and Community Development
Mr	Greg	Cook	Councillor	Wellington Shire Council
Ms	Rosemary	Cousin		Baw Baw Shire
Ms	Jennie	Deane	Councillor	South Gippsland Shire
Ms	Kolivas	Despina		Regional Development Victoria
Dr	Colin	Duffield		University of Melbourne
Ms	Hannah	Duncan- Jones	Director Planning & Environment	Bass Coast Shire
Mr	Peter	Durkin	Principal Program Manager – Environmental Sustainability	Department of Planning and Community Development
Mr	Nick	Edwards	Strategic Planner	South Gippsland Shire
Dr	Rob	Faggian	Senior Research Scientist	Department of Primary Industries
Dr	Quentin	Farmar- Bowers	Research Fellow	Deakin University
Mr	Scott	Ferraro	Executive Officer	Gippsland Climate Change Network
Mr	Steb	Fisher	Owner, The Pathfinder Network	
Mr	Tom	Garrish	Senior Policy Officer	Department of Transport and Infrastructure
Ms	Julie	Grant	Councillor	Baw Baw Shire
Ms	Deirdre	Griepsma	Manager, Consulting and Laboratory Services	ASIRC
Mr	David	Griffin	Policy Manager	Department of Primary Industries
Ms	Melissa	Harris	Director Growth & Development	Baw Baw Shire
Ms	Gillian	Hayman	Co-ordinator	Gippsland Dairying for Tomorrow

Ms	Nikki	Hellyer	Coordinator	Southern Farming Systems
Mr	Geoff	Hill	Manager Economic Development	La Trobe City Council
Mr	Paul	Holton	General Manager Development	Wellington Shire Council
Professor	Ray	Ison	Professor Systems for Sustainability	Monash University
Ms	Rosslyn	Jenzen	Economic Development Coordinator	Bass Coast Shire
Ms	Tricia	Jones	Councillor	Baw Baw Shire
Mr	Peter	Kershaw		VicRoads
Ms	Ann	Kirwan	Assistant Director	Department of Planning and Community Development
Mr	Peter	Kulich	Economic Development Co-ordinator	Baw Baw Shire
	Ras	Lawson		Agribusiness Gippsland
Ms	Carole	McMillan		
Ms	Rosemary	Maher		
Ms	Helen	Martin	Chair	Gippsland Coastal Board
Mr	David	McInnes	Sustainability Specialist	Linfox
Ms	Maree	McPherson	President	Victorian Local Governance Association
Ms	Claire	Miller	Water Policy Analyst and Strategic Advisor	Dairy Australia
Mr	Ben	Morris	Environment Policy and Projects Manager	Municipal Association of Victoria
Mr	Jeff	Nottle	Engagement Facilitator (for Planning and Environment)	Bass Coast Shire
Mr	John	Parker	Secretary	Gippsland Trade and Labour Council
Mr	Tim	Paulet		
Professor	Craig	Pearson	Director, Melbourne Sustainable Societies Institute	University of Melbourne
Mr	Neil	Rankine		Department of Sustainability and Environment
Mr	Ian	Richardson		Regional Development Victoria
Ms	Beth	Ripper	Councillor	Wellington Shire Council
	Harmen	Romeijn		Department of Primary Industries
Ms	Julianne	Sargant	Senior Project Officer	Department of Sustainability and Environment
Mr	Steve	Shinners	Manager Environmental Governance	Gippsland Water
Dr	Victor	Sposito	Principal Research Scientist	Department of Primary Industries
Dr	Margaret	Stebbing	Population Health Academic	Monash University
Ms	Nicola	Watts	Executive Officer	East Gippsland Food Cluster
Ms	Sue	Webster	Executive Officer	Agribusiness Gippsland
Mr	Des	Williams	Community Relationships Manager	Department of Primary Industries
Mr	Kim	Wills	Gippsland Regional Manager	Aus Industry
	David	Wilson	Senior Research Fellow	University of Melbourne
	Ray	Wyatt	Honorary Principal Fellow	University of Melbourne
Mr	Alham	Yusuf	Senior Policy Officer	Regional Development Victoria

# Appendix 7: Participant evaluation

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## Participant evaluation

1. Which of the following best describes your affiliation?	Tally
Government (federal)	2
Government (state)	7
Government (local)	3
Industry	5
University/other higher education	5
Other, please specify:	3
<i>Not for profit</i>	
<i>Farmer / Agricultural community locally</i>	
<i>Farmer</i>	
2. Why did you attend the think tank?	
To present	2
To network	11
To represent a workplace	11
For personal interest	6
Other, please specify:	3
<i>To hear what was said and the audience response</i>	
<i>Representing community &amp; personal interest</i>	
<i>Develop greater knowledge base</i>	
3. Which sessions did you attend?	
Welcome and context	22
Who is here?	21
Keynote speaker	24
Interactive lecture	24
World cafe style conversations	23
Whole group conversation	24
Summary and close	20
4. Did the think tank improve your understanding of climate adaptation issues in the Gippsland region?	
Strongly disagree	1
Disagree	0
Neither agree or disagree	7
Agree	16
Strongly agree	0
Total	24

**5. Were there any regional climate change adaptation issues that you felt should have been included / given more attention by the think tank?**

Yes	11
No	9
Total	20

- Role of local government
- Sea level rise/storm surge effects on coastal towns, potential for these towns to relocate inland, effect on Gippsland if that occurs.
- Influence of agricultural change in new climate, strategic positioning within state, national and international contexts
- Ideas on the employment issues in the Valley post brown coal use. I was expecting equity to be a big issue but it was hardly mentioned. I was expecting transport issues to get a bigger voice given that fuel prices are going to increase. What does a 'sustainable population' mean in Gippsland?
- Too much focus on agriculture to exclusion of other industries which are economically more significant to the region.
- We could have given an overview of how agriculture will ride out climate change in Gippsland.
- Wasn't much on transport
- We need to focus the agricultural discussion on how we can manage in a climate with greater variability at the extremes.
- More about adaptation of settlements and land use to coastal impacts of climate change (sea level rise and storm surge, combined with catchment-based flooding).
- Impact of Carbon Pricing on future of Brown Coal. Role of NBN as a catalyst for change.
- more about land inundation and loss of jobs in the power generation industry.
- I think all relevant issues were well covered - the trick will be to reconcile and coordinate some inherently contradictory objectives around regional development, population and environmental protections.
- How to better educate business/industry to clean energy & energy saving options
- More discussion of technologies that farmers could consider applying in their land management strategies when responding to a changing climate.
- More farm level issues
- biodiversity

**6. Were you introduced to any people, organisations or projects at the think tank that may assist you to improve your / your organisation's adaptive response to climate change?**

Yes	19
No	4
Total	23

- Ausindustry
- On the table, local reps of industry, and my industry reps on cafe tables
- I re-met people which was good and also met 3 people who were (and will be) valuable contacts. I will be working with one of these people (we have agreed to work together on a topic)
- Lots of contacts but still depends on a vehicle or mechanism for easier, effective communication between busy groups and people
- Key local govt reps
- Good to see some of the younger members of the agriculture/environment profession involved.
- Local Gov't Researchers Regional RDA
- DPI and Andrew Campbell
- A wider group of people than has generally been at such events
- The whole team
- Reaffirmed relationships with regional contacts
- Introduced myself to various people which may prove advantageous in the future
- Melb university's work

### 7. How would you rate the scope and relevance of the issues discussed at the think tank?

Very poor	0
Poor	0
Neither good or poor	4
Good	15
Excellent	5
Total	24

### 8. Which aspects of the think tank did you find most useful?

24 Responses

- *Networking and reflection questions*
- *Andrew Campbell's lecture and detailed consolidation of issues*
- *Networking with people/organisations that I would not normally cross paths with.*
- *Guest lecture and questions (although it would have been good to have an open forum of key local issues following on from the presentation).*
- *I enjoyed the talk by Andrew Campbell and his own slant on the issues. I am not sure about some of the 'conversations'.*
- *Networking and Key note address, also the discussions at group tables*
- *Very interactive and provided good opportunity for input*
- *Enthusiasm of participants and receptiveness to consideration of alternatives.*
- *To hear the acceptance of agriculture in the region in the future, very good to hear of the support.*
- *Networking Listening to views of stakeholders I don't generally encounter*
- *Very good keynote speech contained some PRACTICAL ideas.*
- *The focus on ag issues it outside my specific area of interest but it was still useful to get an overview of the climate change impacts*
- *Networking and looking at output from mapping exercise in pre reading.*
- *It got me thinking about the potential for closed loop systems in agriculture, in order to reduce its water and energy footprint -- especially given that water use per calory produced in industrialised agricultural systems is unsustainable ...*
- *World cafe style conversations and the keynote*
- *Keynote speaker and opportunity to circulate among participants for different discussions*

### 9. Which aspects of the think tank did you find least useful?

20 Responses

- *The tribes response (although identifying the silo was informative).*
- *Conflicting personal/organisational views, which lead to discussions (arguments) which kept groups off topic or used up all available time - during the small group discussion sessions.*
- *The second table discussion and writing down group questions*
- *The two or so main questions from each table after Andrew Campbell were very similar so not sure much scope was covered by writing them down - you'll be a better judge of that*
- *Scope seemed too broad - seemed to cover almost everything relevant to future of the region - narrower scope and more depth would have suited my needs better*
- *Philosophising and politicing.*
- *The whole group conversation didn't really go anywhere - would have been good to have more time to discuss next steps, possible collaborations, etc.*
- *Rushed time*
- *The two standing in circles activities*
- *Summing up - no mention about the mechanisms with which this project will feedback to the region in a broader sence. How will the Shires use it and communicate the outcomes*
- *whole group discussion, summary and close*



10. How would you rate the level of discussion and input from participants of the think tank	
Poor	0
Undecided	0
Fair	5
Good	15
Excellent	4
Total	24
11. How would you rate the level of opportunity that you had to contribute to the forum	
Poor	0
Undecided	0
Fair	5
Good	14
Excellent	4
Total	23
12. Did you think the number and mix of participants and presenters was appropriate?	
Yes	21
No	3
Total	24
<ul style="list-style-type: none"> <li>- More diversity and different points of view needed and perhaps have somebody talking about options for planning in regard to the big changes that might be on the way and how they relate to each other (globalisation, fuel costs increases, climate change, increasing inequity, government policy, changing community values etc). I would like to see more of the context in which climate change is being considered. Is it just another risk to economic growth or has it some other significance. I think the regional perspective would give that opportunity to put Climate change in perspective in terms of what people want for the future.</li> <li>- OK for first meeting</li> <li>- Depends on the goal - but I felt there was a lot of people for such a short length of time.</li> <li>- As an introductory event, yes - but if anything concrete is to come of the exercise, it needs smaller groups that can focus on action planning to ensure real change can occur.</li> <li>- Would have been useful to have more industry representatives present, particularly those active in energy conservation &amp; clean energy options</li> <li>- Missing the catchment management authorities in the region a dedicated representative</li> <li>- Think tank than drew in ideas from across region to inform debate</li> <li>- Diverse participation</li> </ul>	

### 13. How could the think tank have been improved?

20 Responses

- More space
- More focus on future action
- More in depth discussion and exploration of opportunities for Gippsland
- Collaborative activities in the region to make a better future. DPCD discussion about the objectives of strategic regional plans and regional growth planning and what this kind of planning could do. Analysis of what regional (state or national) processes are underway that have the capacity to actually change the direction of development towards sustainability and towards giving people (all people even the poor) a better life.
- Smaller groups -conducted over several sessions.
- More manufacturing and industry representatives from individual firms not associations.
- More discussion about PRACTICAL ideas rather than abstract policy
- It would have been useful to hear more about the research priorities of the think tank organisers. A quick session with all participants saying why they were in attendance - I realise this takes up time but it is a valuable networking tool. Plus a more direct discussion about 'next steps' at the end of the session.
- The world cafe style conversations need to be followed by a plenary session which needs to allow for more debate of the concepts arising from the conversations.
- A clearer explanation of the proposed research project and the ways in which participants could contribute to shaping it.
- Fewer people more time.
- Less about the problem and more about exploring solutions.
- Some 'thought starter' questions provided before the event, which may form basis of some discussion groupings.
- How can the region itself work together after we have all been introduced.
- I would like more localised 'Think tanks'.
- More quality key note speakers

### 14. Do you have any suggestions of groups or people that didn't attend the workshop that would be interested in future work in this area? Please put names here.

12 Responses

- Food industry was not well represented.
- Centrelink who know about regional employment, people from social security NGOs.
- Kos Galtos - Coldry Project John Mitchell - John Mitchell Consulting
- Would have been good to include more local researchers
- The two Gippsland Catchment Management Authorities East Gippsland CMA - Rex Candy
- More industry representation
- Landcare groups, agricultural industry groups.
- Case studies of what's worked for other regions.

15. Overall, how would you assess the value and importance of the Gippsland climate change adaptation think tank as a forum to discuss regional climate adaptation issues?	
Very poor	0
Poor	0
Undecided	0
Fair	9
Good	9
Excellent	5
Total	23

**16. Do you have any other comments/suggestions regarding the Gippsland climate change adaptation think tank that may assist with planning future think tanks?**

11 Responses

- *A worthy first effort and can be built on by introducing a deeper level of influences from localised climate change affects.*
- *Have somebody put climate change into the regional context (what is in the regional strategic plans or similar documents), covering issues such as equity, population, employment, planning processes, education.*
- *Segmenting the interest groups to get some focus on particular issues. Eg, tourism, manufacturing, farming, etc.*
- *A stronger focus on the adaptation options and an opportunity to evaluate the environmental, social and economic consequences of each.*
- *Future think tanks could focus on specific issues, to pinpoint barriers to change and clearly identify what can be done to change those barriers and by whom.*
- *Interested in the final analysis and the future applications of it.*
- *Case studies from other regions who have had success in adaptation planning.*



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