Transitioning climate change information into policy and action: some reflections

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National
Climate Change Adaptation
Research Facility

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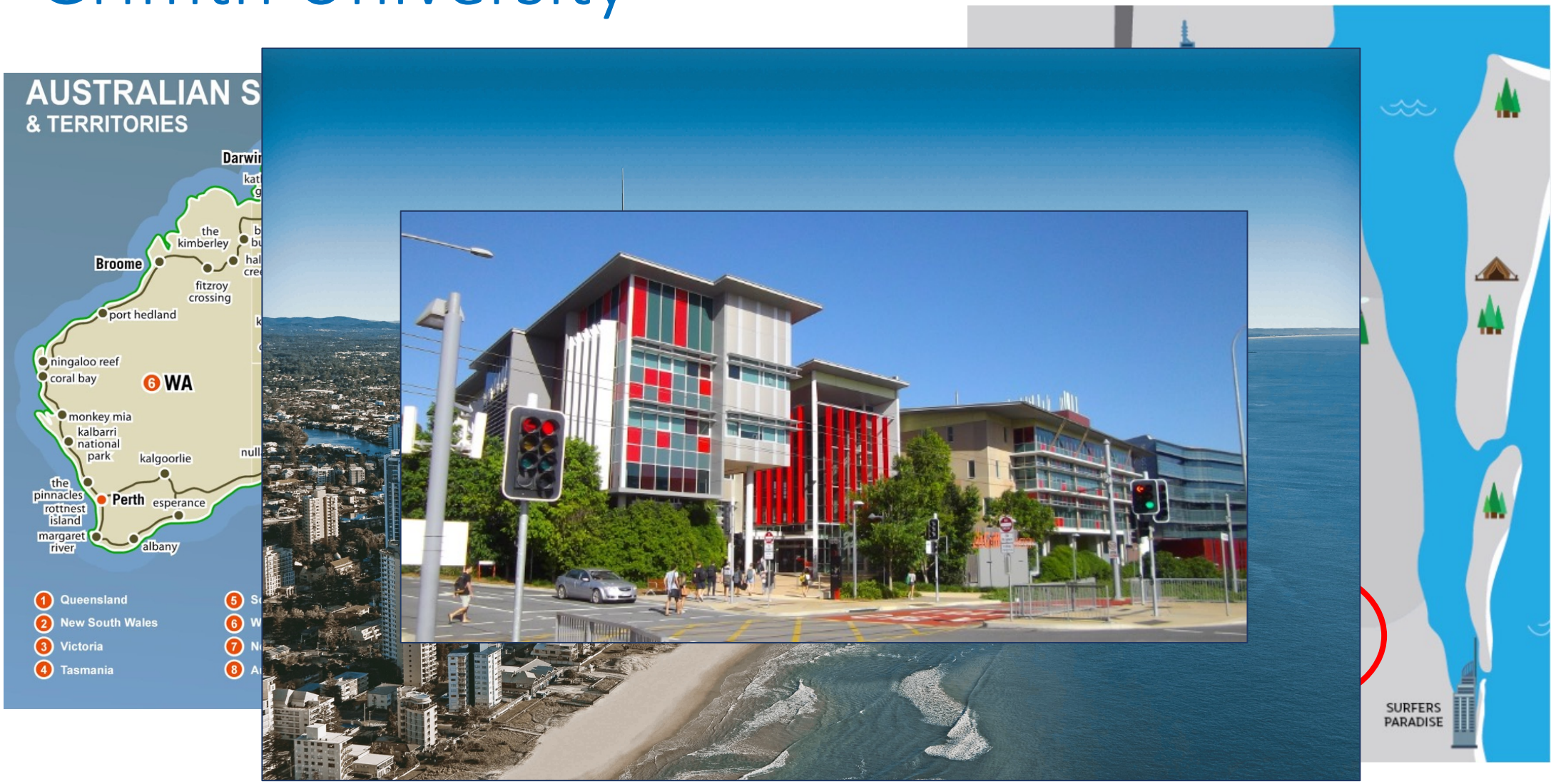


Who am I and why am I here?

- The why:
  - I worked at the Climatic Research Unit from 1979 to 2004
  - I was Co-Director, with Phil Jones, for the last 6 years of that time
- The who:
  - Lecturer, University of Nairobi 1974-79
  - CRU 1979-2004
  - Met Office 2004-2008
  - Griffith University 2008 to present: the National Climate Change Adaptation Research Facility

These will be post-2004 reflections

2004-2008: Working as Head of the Technical Support Unit for the delivery of the IPCC Working Group II Fourth Assessment, with Martin Parry and Osvaldo Canziani as Co-Chairs

2004-2018: Working as Director of NCCARF on building knowledge and capacity to adapt to climate change among Australian policy- and decision-makers

Some definitions (Bremer et al. 2019)

- **Climate services:** the transformation of climate-related data – together with other relevant information – into customised products … and any other service in relation to climate that may be of use for society at large" (European Commission, 2015)

- **Co-production:** the deliberate, collaborative product-development work between climate scientists, or producers of climate data, and practitioners, or users who require climate information, including potential or even 'imagined users' (Porter and Dessai, 2017).

Three ‘case studies’:

1. From the Met Office: working on the IPCC AR4
2. From NCCARF: the build of a decision support framework for coastal managers coastadapt.com.au
3. From NCCARF: working with health service managers in Queensland to build a risk assessment and management system for climate change

1. Beginning with the case of the IPCC

* Intergovernmental Panel on Climate Change

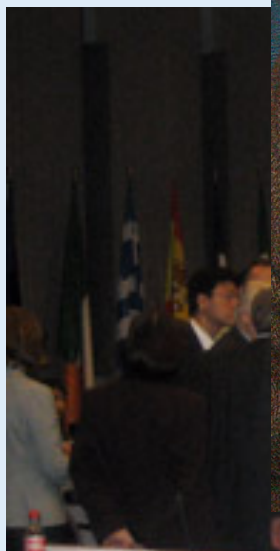
The process in IPCC Working Group II

2002		*Elections to appoint Chair, Co-Chairs and Bureau*
2002		*Decision taken to produce report*
2003		*Outline approved by governments*
2004		*Authors and review editors selected*
2004	Sept	WGII 1st Lead Author Meeting - Vienna
2004	Dec	Zero Order Draft (ZOD) Delivered
2005	*Feb*	*Informal Peer Review of ZOD*
2005	Mar	2nd Lead Author Meeting - Australia
2005	June	First Order Draft (FOD) Delivered
2005	*Sept*	*Expert Review of FOD*
2005	Nov	3rd Lead Author Meeting - Mexico
2006	Apr	Second Order Draft (SOD) Delivered
2006	*July*	*Government and Expert Review of SOD*
2006	Sept	4th Lead Author Meeting – Cape Town
2006	Nov	Final Government) Draft Delivered
2007	*Feb*	*Final Government Review*
2007	*Apr*	*Approval by WGII Plenary*
2007	Dec	Publication

The Approval Meeting

- Government negotiators on the floor
- IPCC on the podium: Co-Chairs, TSU, authors
- Text of SPM is projected line by line and approved


Wednesday 4th April
Next session starts 8:00pm




GreenFacts

Text submitted to the Final Government Review

Roughly 20-30% of species are likely to be at high risk of irreversible extinction if global average temperature exceeds 1.5-2.5°C. * N [4.4]

Text projected at the Approval Meeting

[Page 6, lines 27-28]

~~Roughly~~ Twenty to thirty percent ~~20-30%~~ of species will be ~~are likely to be at high~~ ~~risk of~~ committed to~~irreversible~~ extinction if increases in global average temperature exceed~~s~~ 1.5-2.5°C. * N [4.4]

Final published text

Approximately 20-30% of plant and animal species assessed so far are likely to be at increased risk of extinction if increases in global average temperature exceed 1.5-2.5ºC

IPCC reports 'diluted' under 'political pressure' to protect fossil fuel interests

alition sought to make policy summaries as vague as inimise climate action

Berlin: April 14th 2014. Sigmar Gabriel speaking at the IPCC WG3 briefing. 'TheFuture.net' protestors watch him in silence.

SBS News Just In Top Stories Census Explorer Australia World COVID-19 Politics Immigration Indigenous Environment Life

Environment

Australia rejects leaked claims it lobbied to change major UN climate report

Australia had asked the UN to play down the need to phase out fossil fuels, according to leaked documents obtained by Greenpeace and reported by the BBC.

abc.net.au/news/2021-10-22/greenpeace-australia-ipcc-pressure/100558890

ABC NEWS Brisbane Change location 23°C Now Feels like 22°

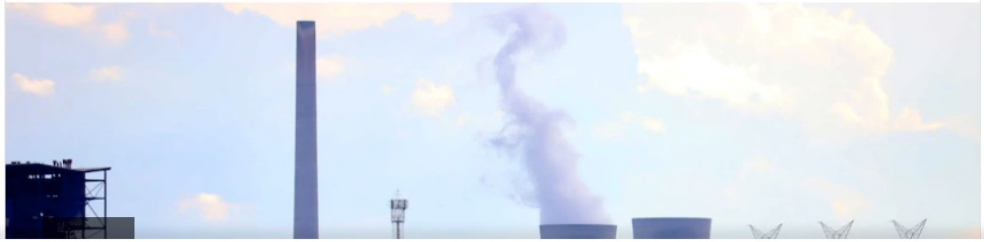
Just In Watch Live Coronavirus Politics World Business Analysis Sport Science Health Arts Fact Check Other

FLOOD WARNING For the latest flood and weather warnings, search on ABC Emergency 1/2

Leaked documents show Australia lobbied to change key IPCC climate change report, Greenpeace says

By Europe correspondent Nick Dole in London

Posted Fri 22 Oct 2021 at 6:16am, updated Fri 22 Oct 2021 at 9:33am



Top Stories

LIVE

'Too late to leave': Remaining residents in multiple Victorian towns told to find shelter as floodwaters rise

How are Australians without internet coping as the world moves online?

Federal government announces flood support payments for parts of Victoria and Tasmania

'Run as fast as you can': Family issues warning over WA Public Trustee

Evolution of the science

FAR: *insufficient observational evidence to make a statement*

SAR: ‘The balance of evidence suggests a discernible human influence on global climate’

TAR: ‘Most of the observed warming over the last 50 years is likely to have been due to the increase in greenhouse gas concentrations’

AR4: ‘Warming of the climate system is unequivocal’

AR5: Concludes that many observed changes are ‘unprecedented over decades to millennia’

AR6: Evidence of observed changes in extremes … and, in particular, their attribution to human influence, has strengthened since AR5

To conclude

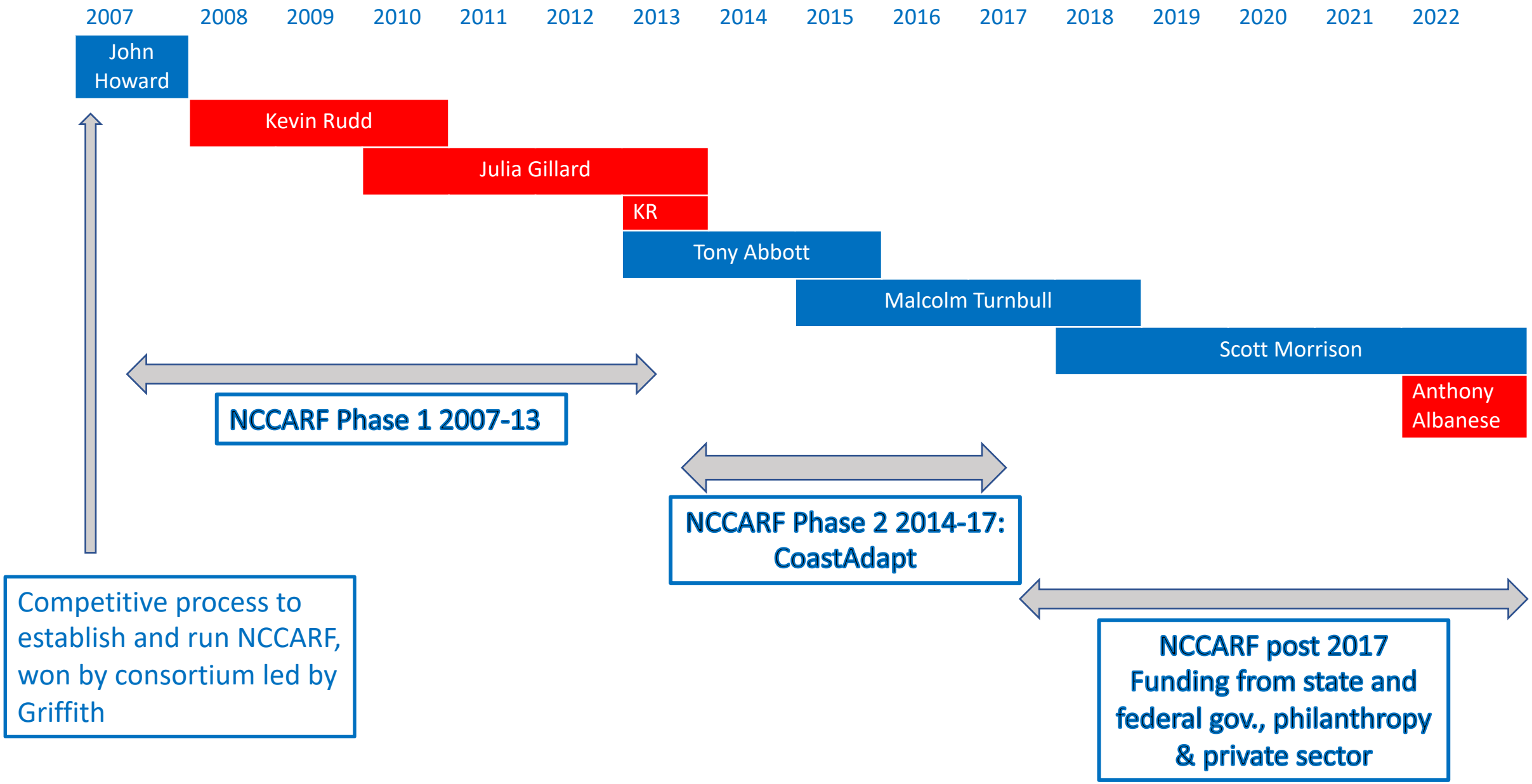
- The role of the IPCC is to provide an evidence-based foundation for the decision-making processes of the UNFCCC (and COPs)
- It demonstrates importance of consensus building to arrive at an agreed understanding of climate change: what causes it, how it is evolving, how it will evolve, the severity of the challenge, how it can be met
- And therefore to build a platform at international level from which action can be taken

Palutikof, JP, Boulter SL, Field CB et al. Enhancing the review process in Global Environmental Assessments: the case of the IPCC . Accepted for publication in *Environmental Science and Policy*

2. Moving on to think about NCCARF* and CoastAdapt

* National Climate Change Adaptation Research Facility

Australian federal governments:



Some NCCARF publications:

Accessible at nccarf.edu.au

CoastAdapt

NCCARF's knowledge and guidance resource for coastal managers and communities

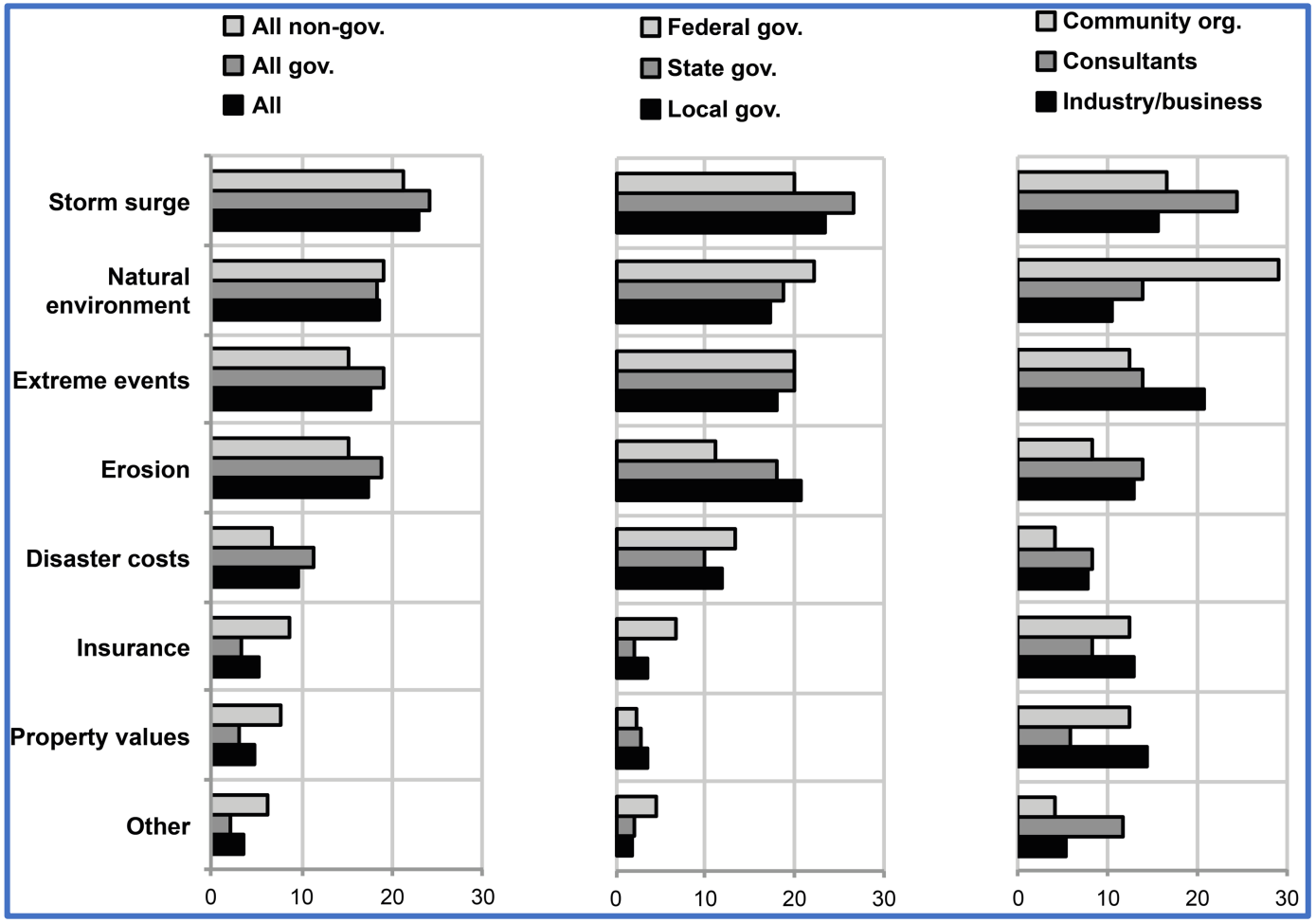
coastadapt.com.au

Engagement before the design and build:
What do you want/need from CoastAdapt?

- Mechanisms:
  - 15 consultation meetings
  - An on-line survey for 3 weeks with 14 questions
  - Altogether, we accessed around 600-700 people
- Target audience: state governments + local councils, business and industry in the coastal zone

43.5% respondents from government
8.5% industry
24% universities (staff or student)
10% consultants
Remainder NGOs, community groups etc.

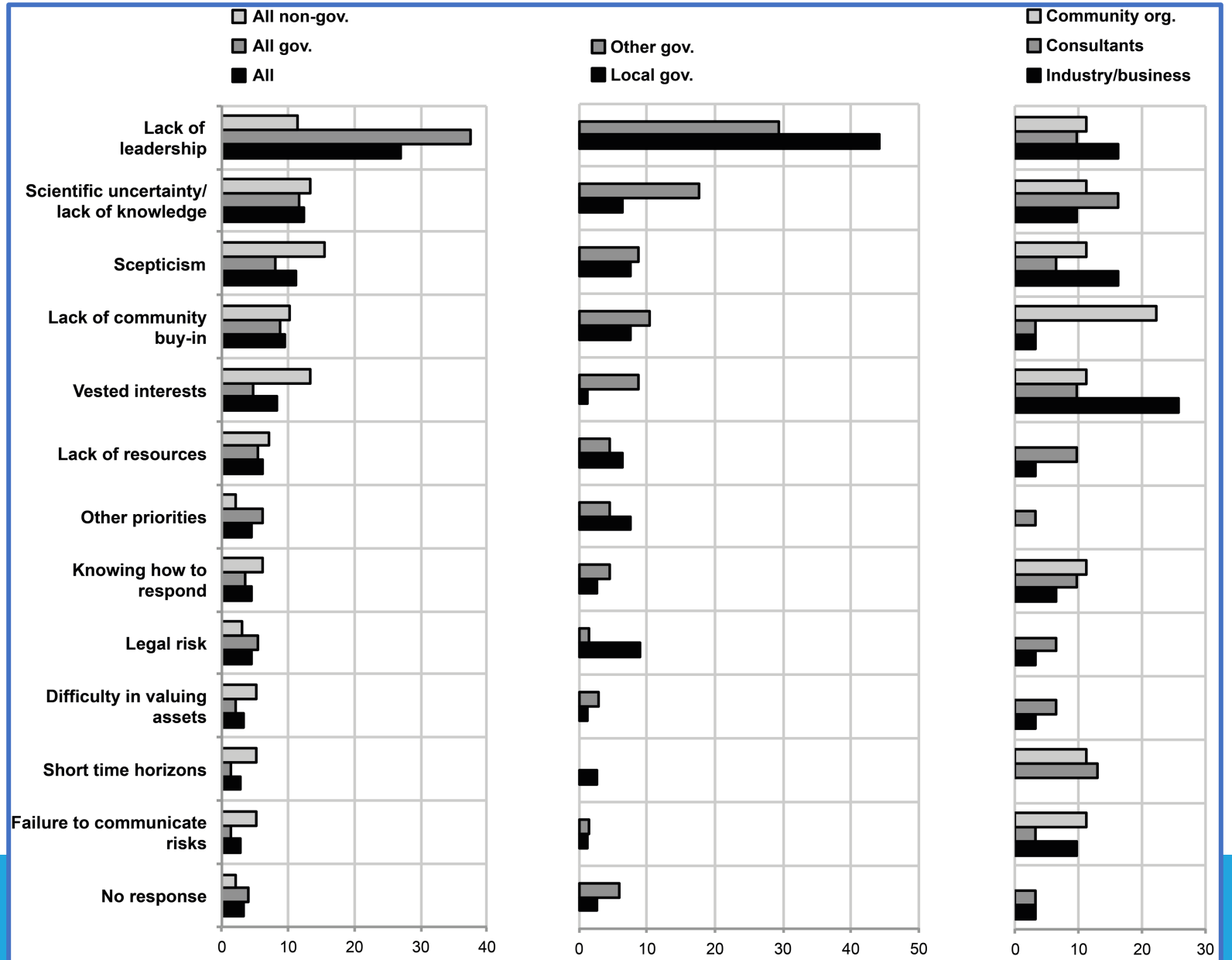
What are the impacts?



What are the most important impacts resulting from climate change and sea-level rise that you believe coastal organisations must address?

- *Dominance of storm surge, effects on the natural environment and extreme events*
- *Different emphasis in private sector, towards costs, property values and insurance*

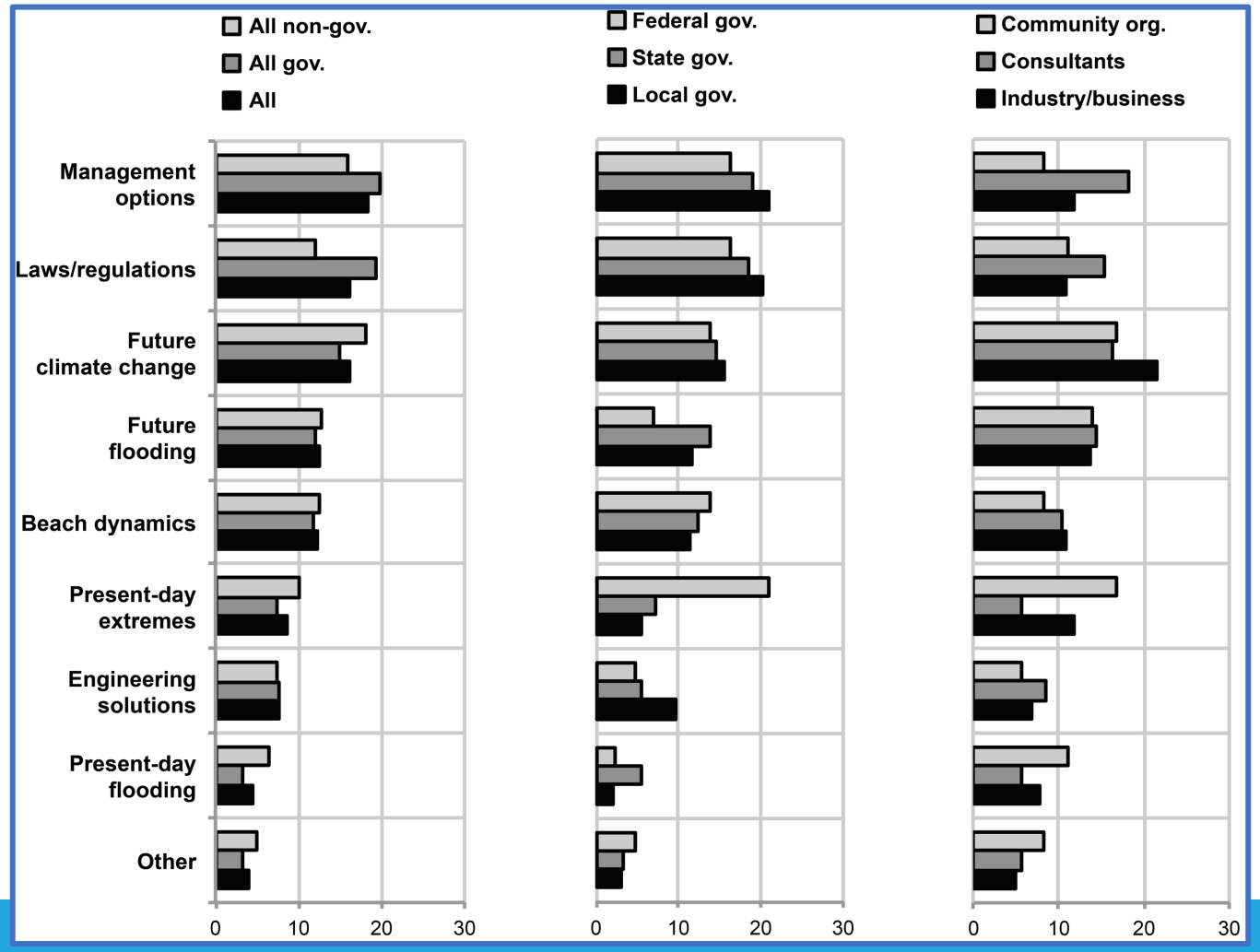
What are the barriers?



What do you consider to be the single most important barrier to progress on planning for climate change in the coastal zone?

- *Strong emphasis on lack of leadership, dominated by public sector*
- *We might get a different result if we repeated the survey today*
- *Private sector emphasis on vested interests (property development) and scientific uncertainty*

What are the knowledge gaps?



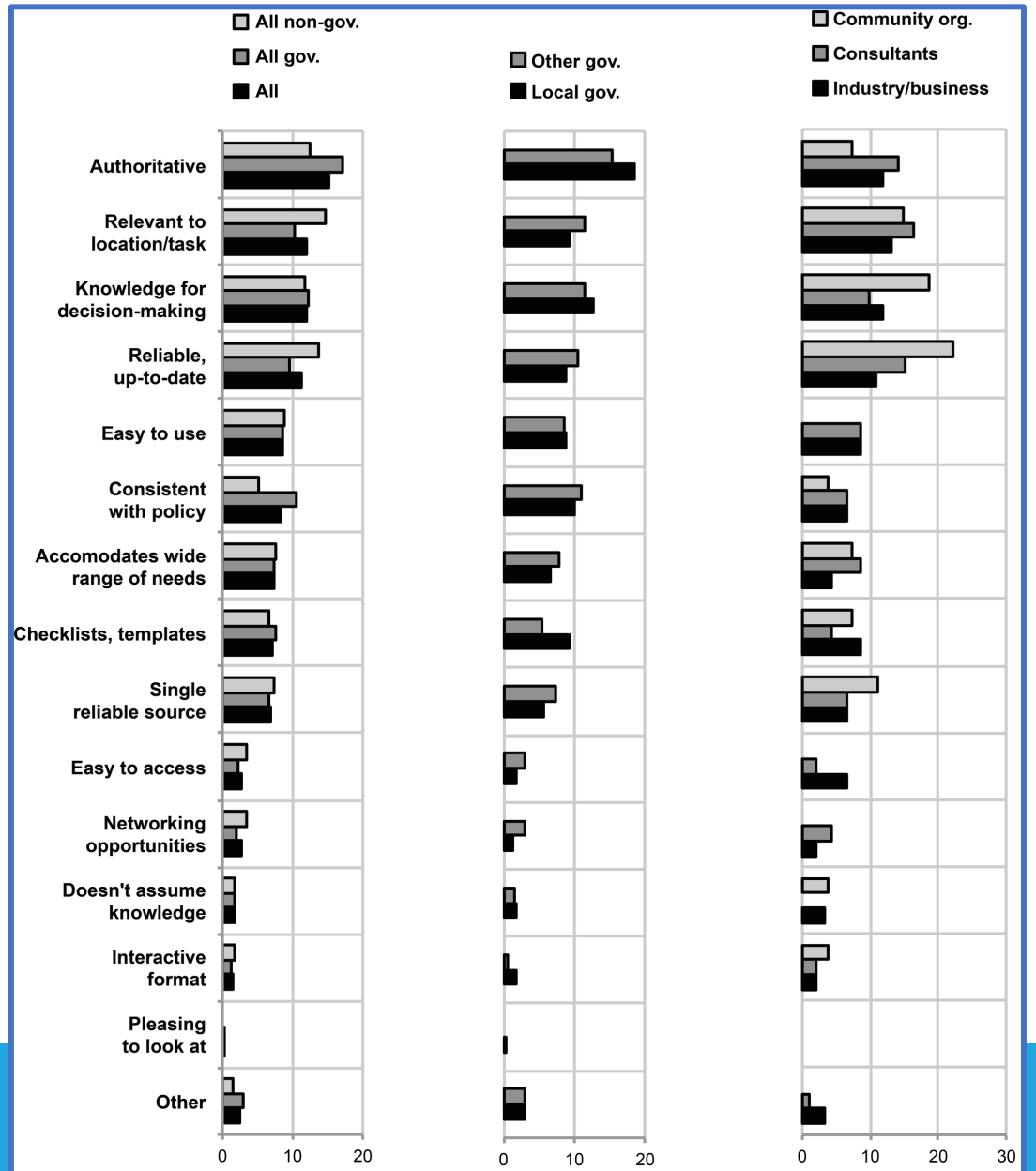
What knowledge gaps prevent the best possible decisions being made about present and future climate-related risks?

Top choices:

- *management options,*
- *local climate change,*
- *law, planning and regulation.*

- *Federal government employees were the only group to choose present-day risks from climate extremes*
- *Present-day risk of flooding and engineering solutions were **not** seen to be knowledge gaps*

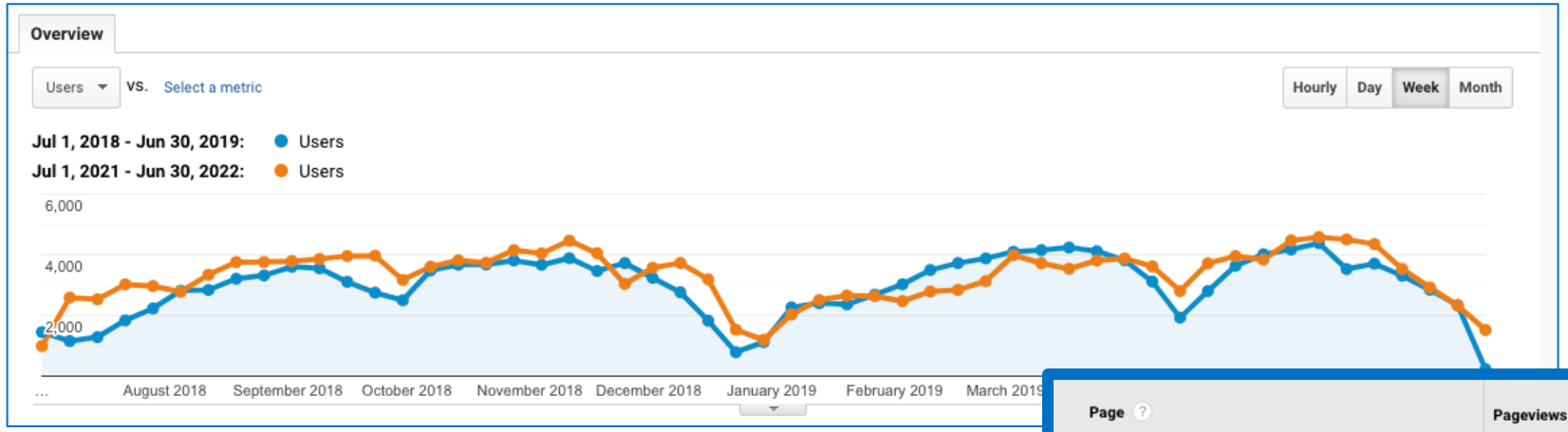
What guidance do you need?

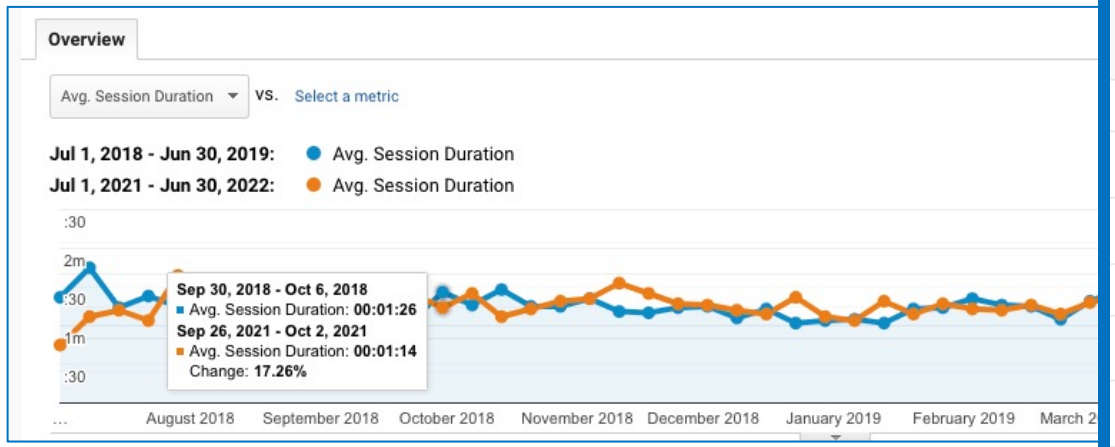


What do you think are the key features of a Coastal Climate Risk Management Tool that will make it useful for coastal decision makers?

- Authoritative (guidance should be developed, reviewed and approved by experts
- Tailored to user location and requirements, and
- Provide the knowledge needed to make the best possible decisions

Google Analytics for CoastAdapt





Page	Pageviews
	277,089 % of Total: 100.00% (277,089)
1. /ocean-acidification-and-its-effects	77,681 (28.03%)
2. /how-to-pages/identifying-indicators-monitoring-and-evaluation	20,067 (7.24%)
3. /C-CADS/c-cads-step-6-monitor-evaluate-and-review	14,726 (5.31%)
4. /	13,966 (5.04%)
5. /climate-change-and-sea-level-rise-australian-region	10,716 (3.87%)
6. /overview-likely-climate-change-impacts-coast	8,546 (3.08%)
7. /tools/coastadapt-datasets	7,140 (2.58%)
8. /sea-level-rise-information-all-australian-coastal-councils	7,015 (2.53%)
9. /infographics/what-are-rcps	6,683 (2.41%)
10. /climate-change-and-sea-level-rise-based-observed-data	4,912 (1.77%)

Country	Acquisition Users
	9,976 % of Total: 100.00% (9,976)
1. Australia	2,635 (26.14%)
2. United States	1,651 (16.38%)
3. Philippines	675 (6.70%)
4. Germany	599 (5.94%)
5. India	518 (5.14%)
6. United Kingdom	333 (3.30%)
7. South Africa	312 (3.09%)
8. Canada	299 (2.97%)
9. New Zealand	214 (2.12%)
10. France	169 (1.68%)

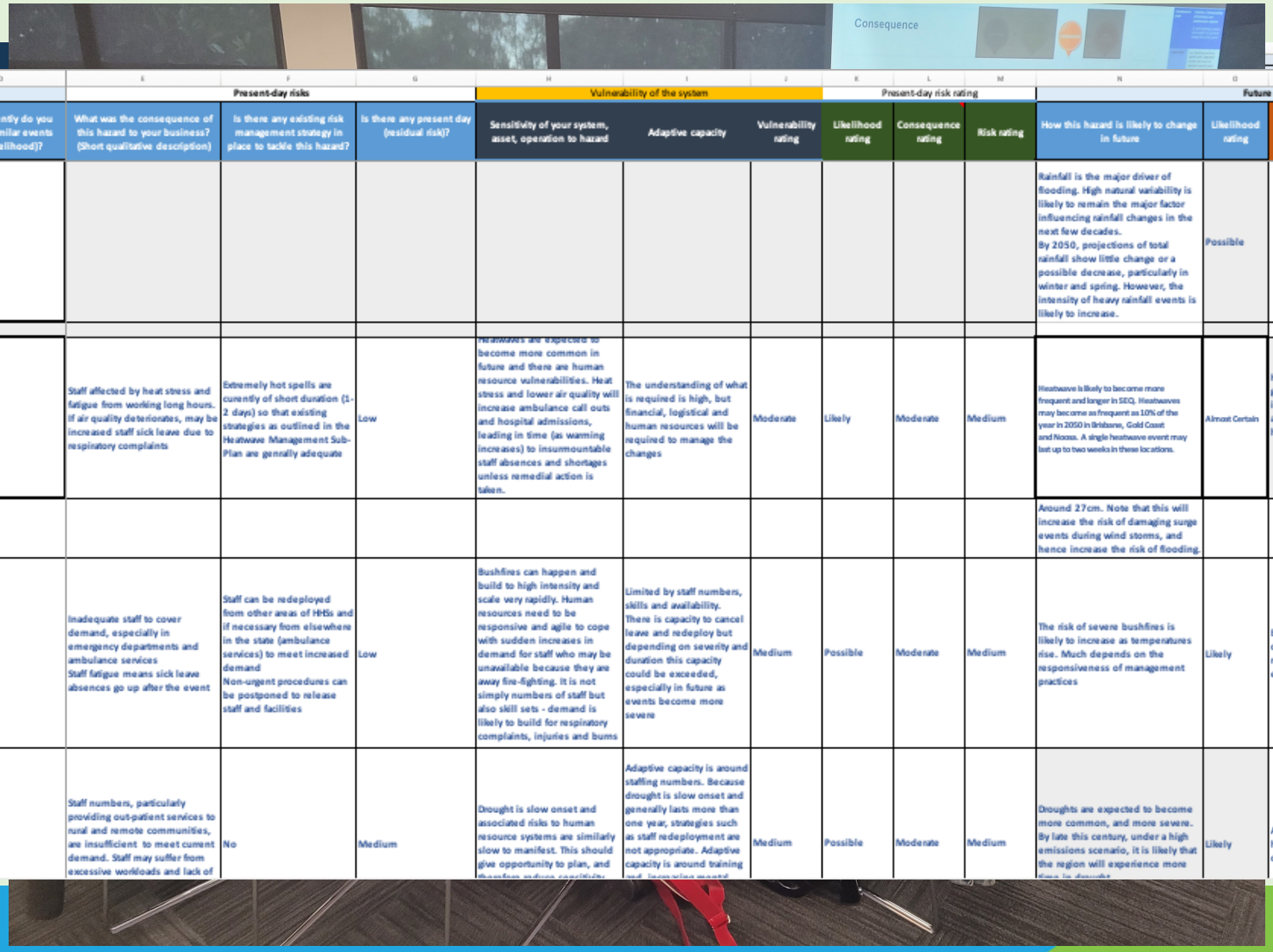
To conclude

- It’s possible to construct useful and usable support for adaptation decision-making
- It takes time and willingness among providers and recipients – to work to understand what is required and how it can be effectively delivered and supported
- And that takes money – a long-term commitment from funding agencies

Palutikof JP, Rissik D, Webb S et al. (2019) CoastAdapt: an adaptation decision support framework for Australia’s coastal managers. *Climatic Change* 153:491-507. doi: 10.1007/s10584-018-2200-8

3. Finally, the case of risk assessment for Queensland Health

A risk framework for Queensland Hospitals and Health Services



		Present-day climate		Present-day risks			Vulnerability of the system			Present-day risk rating			Future climate change (relevant to 2050)				Future ri
List of systems, assets and operation	Hazards	Relevant recent climate conditions or hazards affecting this system, asset or operation	How frequently do you estimate similar events occur (likelihood)?	What was the consequence of this hazard to your business? (Short qualitative description)	Is there any existing risk management strategy in place to tackle this hazard?	Is there any present day (residual risk)?	Sensitivity of your system, asset, operation to hazard	Adaptive capacity	Vulnerability rating	Likelihood rating	Consequence rating	Risk rating	How this hazard is likely to change in future	Likelihood rating	Future risks	Consequences	Consequenc e rating
	flood	Flooding has been experienced in different region of SEQ differently based on the characteristics of the river catchments. For example, Brisbane River has experienced major flooding in 1973, 2011 and 2022.	Possible										Rainfall is the major driver of flooding. High natural variability is likely to remain the major factor influencing rainfall changes in the next few decades. By 2050, projections of total rainfall show little change or a possible decrease, particularly in winter and spring. However, the intensity of heavy rainfall events is likely to increase.	Possible			
	storm																
Human resources	heatwave	Heatwave is a regular occurrence in SEQ with different degrees of severity between year to year. Severe heatwave was recorded in SEQ in 1940, 1972, 2004, 2014 which recorded increased excess death and hospitalisation.	Likely	Staff affected by heat stress and fatigue from working long hours. If air quality deteriorates, may be increased staff sick leave due to respiratory complaints	Extremely hot spells are currently of short duration (1-2 days) so that existing strategies as outlined in the Heatwave Management Sub-Plan are generally adequate	Low	Heatwaves are expected to become more common in future and there are human resource vulnerabilities. Heat stress and lower air quality will increase ambulance call outs and hospital admissions, leading in time (as warming increases) to insurmountable staff absences and shortages unless remedial action is taken.	The understanding of what is required is high, but financial, logistical and human resources will be required to manage the changes	Moderate	Likely	Moderate	Medium	Heatwave is likely to become more frequent and longer in SEQ. Heatwaves may become as frequent as 10% of the year in 2050 in Brisbane, Gold Coast and Noosa. A single heatwave event may last up to two weeks in these locations.	Almost Certain	HR services and staffing levels in general will not be able to cope with increased demand due to heat stress and its consequences during heatwaves.	Staff well-being and morale deteriorates; sickness absences and resignations increase.It becomes more difficult to recruit as positions are seen as stressful and unattractive	Major
	sea level rise												Around 27cm. Note that this will increase the risk of damaging surge events during wind storms, and hence increase the risk of flooding.				
	bushfire	Bushfire is an ever-present risk in SEQ summers. The most recent severe bushfire season in SEQ was the period September-December 2019, when 49 homes were destroyed and insured losses amounted to $70 million	Possible	Inadequate staff to cover demand, especially in emergency departments and ambulance services Staff fatigue means sick leave absences go up after the event	Staff can be redeployed from other areas of HHSs and if necessary from elsewhere in the state (ambulance services) to meet increased demand Non-urgent procedures can be postponed to release staff and facilities	Low	Bushfires can happen and build to high intensity and scale very rapidly. Human resources need to be responsive and agile to cope with sudden increases in demand for staff who may be unavailable because they are away fire-fighting. It is not simply numbers of staff but also skill sets - demand is likely to build for respiratory complaints, injuries and burns	Limited by staff numbers, skills and availability. There is capacity to cancel leave and redeploy but depending on severity and duration this capacity could be exceeded, especially in future as events become more severe	Medium	Possible	Moderate	Medium	The risk of severe bushfires is likely to increase as temperatures rise. Much depends on the responsiveness of management practices	Likely	Bushfires will become more common/more severe so that existing risks will increase and new risks may emerge	There will be more occasions when it becomes necessary to take emergency action to ensure staffing levels are adequate - to cancel leave and redeploy staff.	Major
	drought	In 2019-20, 67% area of QLD was drought declared. Although this does not include SEQ, there are implications for health service delivery (especially mental health) to rural and remote areas. The last	Possible	Staff numbers, particularly providing out-patient services to rural and remote communities, are insufficient to meet current demand. Staff may suffer from excessive workloads and lack of	No	Medium	Drought is slow onset and associated risks to human resource systems are similarly slow to manifest. This should give opportunity to plan, and	Adaptive capacity is around staffing numbers. Because drought is slow onset and generally lasts more than one year, strategies such as staff redeployment are not appropriate. Adaptive capacity is around training	Medium	Possible	Moderate	Medium	Droughts are expected to become more common, and more severe. By late this century, under a high emissions scenario, it is likely that the region will experience more	Likely	As drought events intensify, mental health issues will become more common.	Demands on staff will increase leading to failures to meet targets, increased workplace stress and increased absenteeism due to sickness.	Major

To conclude

- Decision-makers have limited time to devote to climate change and action to address the risks
- Which needs to be recognized and accommodated
- An ambassador within the system really helps, but can also be a weakness – if they move on

Take home messages

- Consensus building is vital to arrive at an agreed understanding of climate change: what causes it, how it is evolving, how it will evolve, the severity of the challenge, how it can be met
- To build a foundation (at any level) from which action can be taken: hearts and minds
- To support action, It's possible to construct and deliver useful and usable information and guidance
- But, it takes time and willingness among providers and recipients – to work to understand what is required and how it can be effectively delivered and supported
- And that takes money – a long-term commitment from funding agencies
- Decision-makers have limited time to devote to climate change and action to address the risks
- Which needs to be recognized and accommodated
- An ambassador within the system really helps, but can also be a weakness – if they move on

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Thank you!