Pacific-Australia Climate Change Science and Adaptation Planning program

International CLIMATE CHANGE ADAPTATION Initiative

Report on PACCSAP Science Symposium

Honiara, Solomon Islands

13-15 March 2013

Participants from the PACCSAP Science Symposium, Honiara, Solomon Islands, March 2013

Introduction

The Pacific-Australia Climate Change Science and Adaptation Planning (PACCSAP) Program Science Symposium was held in Honiara from 13 to 15 March 2013, as part of the Program's ongoing work to communicate new climate science findings and to develop climate science capacity in key regional stakeholders in the Pacific and East Timor.

More specifically, the objective of the symposium was to communicate the latest Pacific climate science carried out under PACCSAP, to gain key stakeholder feedback and to engage in further discussion about shared experiences, learnings and achievements, and challenges and strategic directions of the program going forward. The theme of the symposium was

'Science-based evidence to inform decision-making', and was targeted at Pacific National Meteorological Services (NMSs), regional organisations and national climate adaptation planners, policy-makers and associated decision-makers. More broadly, the symposium also provided an excellent networking and capacity development opportunity for scientists and regional stakeholders alike.

The primary objectives of the PACCSAP Program are to:

- improve scientific understanding of climate change in the Pacific
- increase awareness of climate science, impacts and adaptation options, and achieve better adaptation planning to build resilience to climate change impacts.

This program is funded by AusAID through the Australian government's International Climate Change Adaptation Initiative, and managed by the Australian Department of the Environment (formerly the Australian Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education/Climate Change and Energy Efficiency) in partnership with the Australian Bureau of Meteorology (the Bureau), the Commonwealth Scientific and Industrial Research Organisation (CSIRO) and partner Pacific island countries and regional organisations. The symposium was delivered jointly by the Bureau and CSIRO specifically as part of the PACCSAP Science Program, with local support provided by the NMS and government of the Solomon Islands.

Participants

A total of 46 participants attended the event, including representatives from Pacific island country (PIC) partner countries and regional organizations, as well as PACCSAP team members and stakeholders from Australia and the Pacific (Figure 1; Appendix 1). PACCSAP supported the participation of 25 attendees from partner PICs and some regional organisations. Additionally, some regional organisations supported their own representatives to attend, bringing the total number of regional participants to 35. Of these 35 participants, nine were female and 26 were male; an approximate ratio of 1:3.

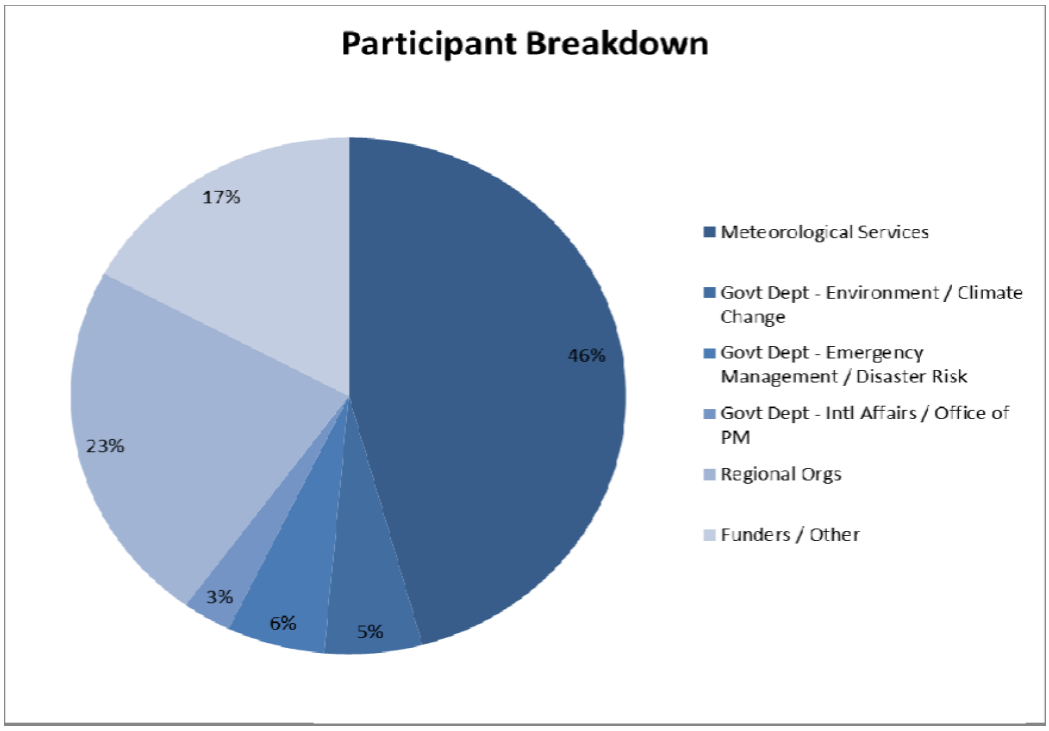

Figure 1. Summary breakdown of participants at PACCSAP Science Symposium, Honiara, Solomon Islands, March 2013.

Science Symposium Program

The symposium program of presentations, activities and discussions was scheduled over three full days, from 13 to 15 March inclusive (Appendix 2), with all participants attending all sessions.

The symposium was broken into thematic sessions centered on different aspects of climate science. Each day contained a mix of presentations and activities to help consolidate understanding of key information sessions, and began with an overview presentation that explained the key 'context, concepts and content' of that session. This was followed by brief presentations on topics of interest and a short question time. Each session ended with a breakout ('Climate Café') panel session consisting of smaller groups designed to facilitate active engagement between all participants, and to provide the space to ask questions about the day's sessions and to engage in discussion with experts. The Climate Café sessions used four key questions to guide the discussions:

1. What is most useful thing you have learnt from the presentations in this session?
2. How could this science be used in climate adaptation and planning in your country?
3. What are the challenges to using this science in decision-making?
4. What are the gaps and future needs to ensure informed decision-making?

The symposium began with a welcome to the event by Mr Frank Wickham (A/Permanent Secretary, Ministry of Environment, Climate Change, Disaster Management & Meteorology), an opening prayer by Mr Lloyd Tahani (Solomon Islands NMS), and brief participant introductions. Colleagues from the Secretariat of the Pacific Community (SPC), Secretariat of the Pacific Regional Environment Programme (SPREP), Australian Agency for International Development (AusAID) and Australian Government Department of the Environment (DoE) then delivered the opening plenary, giving valuable context around climate science and adaptation planning in the Pacific.

Day One , Session One - Introduction to PACCSAP:

PCCSP and PACCSAP Science – past, present and future, including preliminary results of the PACCSAP Science Program evaluation undertaken during 2012-13
Overview of the tools created under PCCSP and PACCSAP Science, including the two historical data portals, four seasonal prediction tools, Pacific Climate Futures and the Tropical Cyclone Risk Model (TCRM)
PACCSAP Animation project, including débuting the animation storyboard

Day One , Session Two - Introduction to Climate Change in the Pacific:

El Niño Southern Oscillation (ENSO) and on its impact across the Pacific
South Pacific Convergence Zone (SPCZ) and its effect on partner country climates
Western Monsoon, including the presentation of work done under the PACCSAP Science Mentoring and Attachments project on the effect of topography on the monsoon
Temperature variability, detections of trends and causes, including discussion around the difficulties in attribution

Interesting feedback from the Day One Climate Cafés included:

Noting the different impacts of El Niño and La Niña events respectively
Challenges in finding local words to explain "ENSO" and other such terms that are too technical for the public
The delicate balance between the complexity and subtleties of the research and the need to take this science to an applied level and translate it into real decisions with local relevance and detail
Pride in the achievement of colleagues – "science is moving!"

Day Two, Session Three - Data and Projections:

Importance of data, particularly with regard to interpreting and understanding trends
Global climate models and projections, including model evaluation and comparison of CMIP5 model projections to CMIP3 projections
Downscaling, including discussion of the pros and cons of downscaling

Day Two, Session Four - Coasts, Oceans and Ecosystem Health:

Waves, including presentation of a completed thirty year global wave hindcast
Sea level prediction, including the creation and verification of a seasonal prediction system for sea level anomalies
Coastal inundation, including "Why are my feet wet?" – a quiz activity to raise awareness of the different contributions to coastal extreme sea levels
Ocean acidification and coral bleaching, including demonstration of the seasonal SST and coral bleaching risk portal
Tuna distribution and abundance, including discussion on the need to use climate science in supporting the sustainability of fisheries

Interesting feedback from the Day Two Climate Cafés included:

Useful to learn about the importance of data records for ground-truthing global models
Useful to have an explanation of the difference between acidification and bleaching

Challenges in explaining conflicting messages from models, "uncertainty"
Challenges in balancing the demand for downscaling with understanding when it is appropriate and useful
Challenges in how to utilise projections and frame them in terms of impacts and likelihood – perhaps using analogies, such as "your roof will blow away" and "move your boat" to aid communities in visualising climate/weather information
Research conducted to homogenise, digitise and produce reliable data trends helps meet stakeholder priorities in the Pacific Islands Meteorological Strategy 2012-2021

Day Three, Session Five - Disaster Risk Management:

Historical changes in extremes, including discussion on extending and expanding rainfall and temperature trend analyses and better understanding trends in mean sea level pressure and sunshine hours
Systems causing extreme rainfall, including presentation of work done under the PACCSAP Science Mentoring and Attachments project on extreme rainfall in the Solomon Islands
The interaction of seasonal prediction and disaster risk management, including presentation of work done under the PACCSAP Science Mentoring and Attachments project on seasonal prediction of climate extremes
Tropical cyclone projections, particularly predicting seasonal activity of tropical cyclones
Drought projections, including discussion of the large uncertainty in drought projections in relation to climate features and climate variability
Extreme rainfall projections, including how projections of climate extremes can be used to inform disaster planning

Interesting feedback from the Day Three Climate Café included:

Really interesting to learn about drought and extreme rainfall, particularly how to classify these
Incorporation of extremes information into tools (for example, Pacific Climate Futures) would be useful
Current disaster risk management has strong focus on tropical cyclones (in affected areas) due to the high impact – loss of life primary concern in the short term, damage to infrastructure in the long term
Tropical cyclone seasonal forecasts are important for informing communities of 'active' seasons
This information is important for projects in other sectors; there is a need for collaboration
There is a strong need to integrate science into planning

Day Three, Session Six:

This session focussed on forward planning, and gave participants an opportunity to reflect and remark on their experience with PCCSP/PACCSAP so far and on remaining gaps and emerging needs. This involved:

Presentation on capacity building, communications and needs looking forward, including preliminary results of the PACCSAP Science Program evaluation undertaken during 2012-13.
Panel discussion on key drivers, evaluation and future directions. The Panel consisted of NMS Directors/representatives from the Cook Islands, Vanuatu, Tonga, Solomon Islands, Samoa, Fiji, Kiribati, PNG, Niue & Marshall Islands

Key points from the panel discussion are summarised here, and are relevant across partner PICs unless otherwise stated. In consideration of key points/comments raised in the discussion, it was reasonably agreed that:

Benefits of PACCSAP

- PICs (thru NMS & other sectoral stakeholders) highly value PCCSP/PACCSAP science products and services; only science program in Pacific providing 'real benefits' to partner countries; nothing prior!
- CliDE very helpful; filled a void & needs further support; digitised data needs to be analysed; data ownership and ready access by PICs is a key issue
- Long-term research mentoring and in-country attachments are effective in building science capacity in key PIC stakeholders and are therefore valued activities

Challenges and concerns

- PIC NMS are very concerned over a possible lack of science support after June…"journey only just commenced"…., and
- Decline in observational network including monitoring stations & instruments is major concern in many countries, including Tonga and PNG
- Who is going to maintain data portals, & how will this be done to ensure NMS role is delivered effectively?
- The science must be based on high quality data, but there is a risk that ongoing data sources will be constrained by underinvestment in (and maintenance of) the observational monitoring network
- Key challenge within PICs is to ensure climate adaptation and the role of science to inform decision-making is appropriately prioritised within government, noting competing issues such as health, education, security, infrastructure etc
- How to get science outputs into national planning and policy development is a key need and a challenge
- Recurrent funding support for science is preferred compared with short/fixed term

Future Direction

- There is consensus support from PIC NMS & representative PIC government sectors at the symposium for the science program to continue on a broad front
- Many 'science questions' remain in relation to better understanding climate drivers and associated projections
- Research on better understanding SPCZ impact on climate is important as PIC communities deal with effects on daily basis!
- Research focus needs to be at both regional and national/sub-national scale
- Collaboration between Australian & NZ scientists and NMS is very important to PICs – NMS capacity is very limited!
- Need to address uncertainty in regional projections & make them relevant to sectors
- Need to integrate science into university curriculum & tap into research capability
- Need to integrate science with traditional knowledge, including translating science into language/knowledge useful for local stakeholders
- NMS staffs need formal science training (role for USP?) & also continue with mentoring & attachments via CSIRO/BOM
- Concept of Pacific regional centre for climate research proposed

- Facilitate in-country science capability & research
- Forum for collaboration between USP and PIC stakeholders
- Need to better integrate climate change adaptation and disaster risk reduction in the Pacific:
- To be supported by climate research as well as social and economic research
- Sea level rise needs to be incorporated as a key variable into Pacific Climate Futures, particularly for countries such as Solomon Islands which has major problem managing impacts of sea level rise and coastal flooding
- Further development of dynamic models such as POAMA required to improve seasonal predictions
- Science-based evidence to inform vulnerability and risk assessments which in turn facilitate adaptation planning and investment priorities
- Local language version of science communication products very helpful

The PACCSAP Science Program Manager Geoff Gooley then delivered closing remarks, thanking everyone for their time and effort over the course of the symposium. All participants were provided with an electronic copy of all presentations from the symposium. The symposium showed great enthusiasm and interaction by all participants. It was made very clear that the participants would like to continue to be closely involved in the future of PACCSAP research and the outputs delivered from the program.

Further Networking

A social event was held on the evening before the symposium to enable all participants to get to know one another in a relaxed environment. A local troupe performed a traditional Solomon Islands dance, which helped to make the evening enjoyable for all.

The official symposium dinner on the final day further strengthened relationships between participants, thereby assisting with the effective implementation of the program.

Unfortunately, planned post-symposium excursions and social activities were impacted by poor weather, however those that participated in the tour of Honiara and the karaoke night gave very positive feedback on their experience.

Participant Evaluation

All participants were given an evaluation form on which they could provide feedback on their personal experience during the symposium. The evaluation questions ranged from those based around increased scientific understanding, through to those based around the organisational arrangements, including the provision of PACCSAP coordination and logistical support. All participants completed the evaluation and the majority indicated that they found all presentations and activities to be 'very interesting and beneficial". A summary of the most relevant feedback is provided here.

Most useful/favourite science presentations

Day 1 - ENSO impacts on Pacific Islands - Brad Murphy
Day 1 - ENSO and the rainfall in PNG - Kasis Inape

Participants indicated that it was useful to understand the impacts of ENSO and SPCZ on the countries and particularly useful to understand the impacts from country case study perspective, such as that which Kasis Inape presented.

Day 2 - Coastal Inundation Presentation and Activity - Kathy McInnes

Participants found this topic to be extremely relevant and important. The activity was a very useful and informative way of sharing information with the presenter and other participants.

Day 3 - Historical changes in extreme temperature and rainfall – Simon McGree
Day 3 - Drought projections – Sugata Narsey

Participants displayed significant interest in both presentations due to their relevance and informative presentations of important information.

Logisticsfeedback

Respondents were asked to reflect on the PACCSAP support for the symposium, and these remarks were generally positive in relation to accommodation, communication and the program format, content and length. Advice on suggested improvements were noted for future reference. Comments included:

The arrangements were good just some of the presentations, I needed more time on it.
Some of the exercises and hands on were great but just the amount of time spend on some of the programs were too short
Presenters need to be more prepared and choose realistic/practical exampled that are appropriate and useful for the audience
I think the last discussion was really interesting – would have been great to have more time on this
How do you improve on “great”!

Benefits of Symposium - feedback

Respondents were given the opportunity to reflect on benefits they felt they had received, or general feedback they might want to pass on to the PACCSAP team. These responses were overwhelmingly positive and included:

First off I just want to thank PACCSAP for everything they’ve done. We have benefited so much for our office, because we depend on our HQ for all the information we need, it is sometimes frustrating to get some of our data we request. Now we have our data in our office and easy to access. PACCSAP provided all the tools necessary for our office to perform in ways that exceeded my expectations. PACCSAP made it easy for our office to provide the necessary information for decision makers and planners. I really wish that PACCSAP would keep on providing assistance to us small islands that really profited from them in so many ways
A lot more new science knowledge; Enhanced understanding on some of the climate concepts; A lot of useful discussions!
More understanding of the outputs of the project & ongoing work. Also the opportunity to provide ideas on way forward
Enhanced knowledge in Climate Science especially with Extreme events

The PACCSAP team also submitted some valuable feedback and insight into their Honiara experience. Key obersvations included:

- Partner-country representatives provided valuable insight into the way they and their met' services operate, their skills and capabilities, and their needs.
- Concern was expressed as to how the portals will be maintained and funded in the future as well portal accessibility (password protected, data caching, data transfers).
- All countries urged the continuation of the project beyond the middle of this year.
- It was rewarding to see how the research is being used in-country and has aided some scientists into thinking how to improve the delivery of findings and how they could be better tailored for future research.
- Gaps identified were related to how best to convey complicated projection information to government and other policy makers in a simple and easily understandable way so that informed decision making can occur.
- It was emphasised that the developed under the PASAP / PCCSP / PACCSAP portals are now routinely used by the NMSs in providing operational service. On the other hand, concern was expressed about disruption of the service if it will be no future support and maintenance of the tropical cyclone portal and seasonal prediction portal is case of discontinuing funding for the Pacific projects.
- In the climate cafe and discussion sessions on projections and risk management , more was learned about the practical perspectives of our partners regarding climate impacts and risk, particularly how fundamental impacts of tropical cyclones and the different ENSO phases are felt in so many sectors.
- The Climate Cafe raised some interesting points about projections for drought, floods and cyclones, including the need for increased reliability, guidance on how to interpret uncertainty, case studies and delivery of application-ready datasets (e.g. GIS layers) for use in risk assessment and decision-making.
- Strong suggestions were made for more mentoring of students by the scientists in PACCSAP.
- The Wave research and data could be used for examining coastal erosion within adaptation work, as well as there being a keen interest in seeing this hindcast data put into a web portal allowing easy access to the partner countries.
- With regards to historical climate trends, partner country representatives showed interest in extending and expanding rainfall and temperature trends analyses and better understanding trends in mean sea level pressure and sunshine hours.

Conclusion

Overall, the Symposium was considered very successful in achieving the primary objective of improving stakeholder understanding of the latest PACCSAP climate science findings, and how this information might be used to inform decision making on climate adaptation in the Pacific. Additionally, the symposium was a valuable opportunity for PACCSAP scientists, regional and partner country representatives to engage in discussion and continue to build strong collaborative relationships.

Appendix 1:

Science Symposium Participants

Country	Delegate
Cook Islands	Ms Ana Tiira – Office of the Prime Minister, Cook Islands
Cook Islands	Mr Arona Ngari – Cook Islands Meteorological Service
FSM	Mr John Libian – National Weather Service Office (Yap)
Fiji	Mr Misaeli Funaki – Fiji Meteorological Service
Kiribati	Mr Rition Kabunateiti – Kiribati Meteorological Service
Kiribati	Mr Ueneta Toorua – Kiribati Meteorological Service
Marshall Islands	Mr Lee Jacklick – National Weather Service Office (Majuro)
Niue	Ms Rossylynn Pulehetoa – Niue Meteorological Service
Palau	Mr Rick Dizon – National Weather Service Office (Koror)
Papua New Guinea	Mr Kasis Inape – PNG National Weather Service
Papua New Guinea	Mr Samuel Maiha – PNG National Weather Service
Papua New Guinea	Ms Luanne Lossi - Office of Climate Change and Development
Samoa	Mr Sunny Seuseu – Climate Meteorology Division, MNRE
Solomon Islands	Mr Chanel Iroi – Ministry of Environment
Solomon Islands	Mr David Hiriasia – Solomon Islands Meteorological Service
Solomon Islands	Mr Lloyd Tahani – Solomon Islands Meteorological Service
Timor-Leste	Mr Lourenco Xavier – National Disaster Management Directorate
Tonga	Ms Selu Finaulahi – Tonga Meteorological Service
Tuvalu	Ms Hilia Vavae – Tuvalu Meteorological Service
Vanuatu	Mr Brian Philips – Climate Change & Disaster Risk Reduction Project Management Unit
Vanuatu	Mr Jotham Napat – Vanuatu Meteorological & Geohazard Department
SPREP	Mr Salesa Kaniaha
SPREP	Ms Netatua Pelesikoti
SPREP	Mr Philip Wiles
SPC	Mr Dean Solofa
NIWA	Dr Andrew Tait
USP	Mr Vili Iese
PIFS	Mr Exsley Taloiburi
GIZ	Dr Melchior Mataki
DCCEE	Ms Lalage Cherry
DCCEE	Ms Kiri Yapp
AusAID	Mr Duncan McCullough
AusAID	Ms Karen Lummis
AusAID Review Team	Mr Peter Hunnam
AusAID Review Team	Mr Graham Walter

Appendix 2:

Pacific-Australia Climate Change Science and Adaptation Planning program

International CLIMATE CHANGE ADAPTATION Initiative

PACCSAP Science Symposium
13 – 15 March 2013 - Honiara, Solomon Islands

Symposium Program

	Wednesday 13 March
8:30-9:00	Opening session Formalities, prayers, housekeeping and introductions
9:00-10:00	Plenary Climate change impacts, adaptation and emerging needs in the Pacific overview (SPC/SPREP) ICCAI Review and future strategic direction of ODA funded climate change work in the Pacific (AusAID) PACCSAP Overview: from science to adaptation (DCCEE)
10:00-10:30	Morning tea
	Session 1: Introduction to PACCSAP
10:30-10:50	S1: PCCSP/PACCSAP Science: past, present and future - Geoff Gooley
10:50-11:10	S1: Overview of the tools - Yuriy Kuleshov & Kevin Hennessy
11:10-12.00	S1: Activity: Animation project - Jill Rischbieth & Salesa Kaniaha
12:00 - 1:00	Lunch
	Session 2: Introduction to Climate Change in the Pacific
1:00- 1:30	S2: Introduction to climate change in the Pacific - Brad Murphy
1:30-1:45	S2: ENSO impacts on Pacific Islands - Brad Murphy
1:45-2:00	S2: ENSO and the rainfall in PNG - Kasis Inape
2:00-2:30	Activity - ENSO activity
2:30-3:00	Afternoon tea

3:00-3:15	S2: What we've learned about the SPCZ and how it might change in the future - Scott Power
3:15-3:30	S2: Changes in the Monsoon, its seasonality and interannual variability in the past and future - David Hiriasia
3:30-3:45	S2: Temperature variability, detection of trends and causes - Scott Power
3:45-4:45	Break out panel discussions/activities

Symposium Program

	Thursday 14 March
8:30-8:40	Recap of Day 1
	Session 3: Data & Projections
8:40-9:00	S3: The importance of data - Simon McGree
9:00-9:15	S3: Global climate model performance and projections - Michael Grose
9:15-9:30	S3: Downscaling – Jack Katzfey
9:30-9:45	S3: Adding value to projections – Scott Power
9:45-10:30	Break out panel discussions
10:30-11:00	Morning tea
	Session 4: Coasts, Oceans & Ecosystem Health
11:00-11:30	S4: Coasts, oceans & ecosystem health – Kathy McInnes
11:30-11:45	S4: Waves - Tom Durrant
11:45-12:00	S4: Sea level prediction - Elaine Miles
12:00-1:00	Lunch
1:00-1:15	S4: Coastal inundation - Kathy McInnes
1:15-2:00	S4: Coastal inundation activity
2:00-2:30	S4: Ocean acidification & coral bleaching – Chris Evenhuis
2:30-3:00	Afternoon tea
3:00-3:15	S4: Coral bleaching prediction - Aurel Griesser
3:15-3:30	S4: Tuna distribution and abundance – Peter McIntosh
3:30-4:30	Break out panel discussions

Symposium Program

	Friday 15 March
8:30-8:40	Recap of Day 2
	Session 5: Disaster Risk Management
8:40-9:00	S5: Disaster Risk Management – Kevin Hennessy
9:00-9:30	S5: Historical changes in extreme temperature and rainfall - Simon McGree
9:30-9:45	S5: Synoptic systems causing extreme rainfall in the Solomons - David Hiriasia & Debbie Abbs
9:45-10:00	S5: The importance of seasonal prediction in disaster risk management – Andrew Charles
10:00-10:15	S5: Seasonal prediction of extremes – Yuriy Kuleshov & Sunny Seuseu
10:15-11:00	S5: Activity
11:00-11:30	Morning Tea
11:30-11:45	S5: Tropical cyclone projections - Debbie Abbs & Craig Arthur
11:45-12:00	S5: Drought projections – Sugata Narsey
12:00-12:15	S5: Extreme rainfall projections – Louise Wilson
12:15-1:15	Break out panel discussions /activities
1:15-2:15	Lunch
	Session 6: Looking forward
2:15-2:45	S6: Capacity building, communications and looking forward – Geoff Gooley, Jill Rischbieth, Mandy Hopkins and Jodie Kane
2:45-4:00	S6: Discussion : key drivers, evaluation and future directions – Geoff Gooley
4:00-4:30	S6: Closing remarks – Geoff Gooley
4:30	Afternoon tea