

## Notes from Breakout Group 3 (17 August 2010)

### Who needs climate attribution and how can attribution information be communicated?

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#### Purpose

What questions need to be answered?

- User needs
- Science needs
- Attribution studies useful for raising the bars of knowledge
- Useful for mitigation for deciding on action versus non-action
- Value for science literacy, education, communication
- Value for selecting adaptation options
- Diagnostic of our understanding
- Purposes: informing litigation, understanding what is happening, informing international funding for adaptation
- Useful for nudging people to ask more sophisticated questions; getting beyond "Is this global warming?"
- Building credibility in projections

Can attribution be linked to decision triggers?

- Trigger thresholds can be estimated by asking what were bad years. Analog years are experiential.
- Need to look at good years as well; stranded assets ruin ability to consider adaptation later

#### Role within climate services

Are we looking at outcome attribution or climate attribution?

- At scales at which decisions are made local factors may dominate, e.g. land use change
- Need to consider land use changes (effect on climate and non-climate effects), demographic changes
- Consistency between and past may not exist locally because of local forcings
- Need to think of discussion in a sustained way, don't focus on iconic events too much
- Need to be timely, e.g. next day
- Co-production of knowledge

- Requires multi-disciplinary participation
- Looking at multiple factors provides references: adds experiential interpretation

How does attribution fit within climate services?

- Aligning with understanding and being able to implement outcomes
- Don't let attribution be burdened with developing a new climate service paradigm
- How does attribution contribute to the service aims?
- Tying in attribution with and existing services such as prediction
- Need to use multiple models and methods to understand and characterise confidence
- Suitability of models depends on type of event, time scale, etc.

### What needs to be done

Communication

- Decision makers are tasked with dealing with uncertainty in input and process
- Climate change can be a very small component
- Attribution makes people reconsider their assumptions
- Needs to be sustained, consistent, timely; builds trust
- Needs to be probabilistic; best-guess-only undermines confidence in understanding
- Palaeoclimate records can be useful for this
- Who are the messengers? Ultimately local
- Saying climate models are like weather forecast models leads local meteorologists to discount climate models because they know you can't forecast the weather past several days
- Requires long term investment
- Needs to tell a story

Need to build broader multi-disciplinary community of people involved in process

- Builds interest, refines questions, improves monitoring, builds usage
- Facilitated by education
- Builds common vocabulary
- Requires long term investment

Value of palaeoclimate

- Useful for showing that things can happen that are beyond what has been experience recently
- Tree rings easier to explain than climate models
- Requires explanation of some science which then increases overall confidence: experience over abstract

Attribution of ocean changes and states

- Attribution is often pushed back to SSTs, but what caused those SSTs?
- Has ocean monitoring been adequate for attribution; more problems further into past

Things to target

- Evapotranspiration