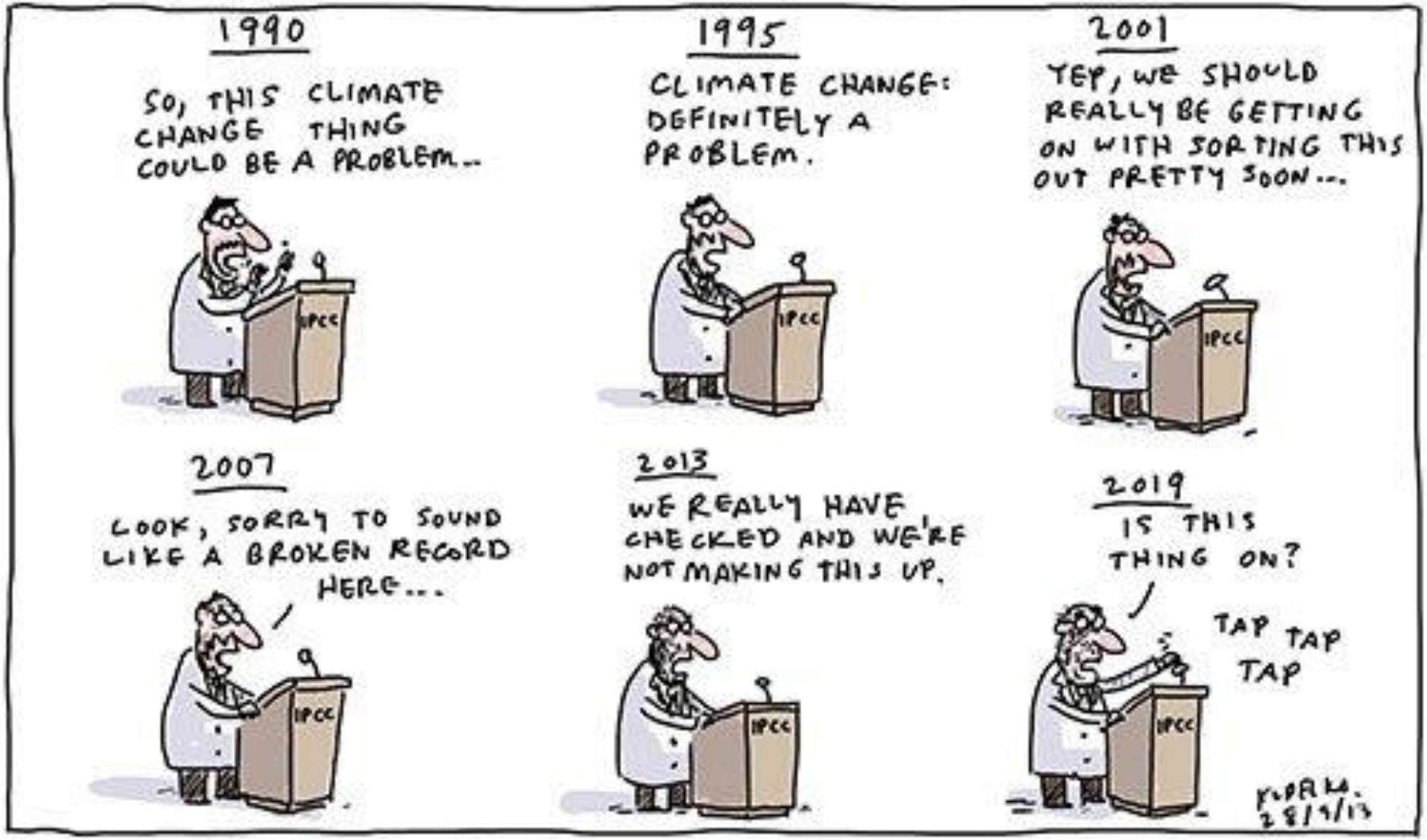
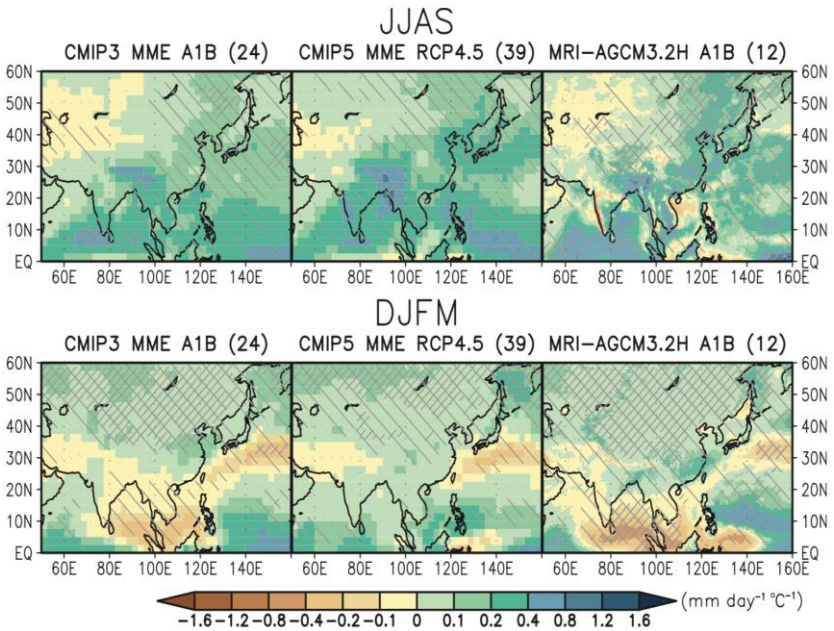
Communicating Climate Change Information through Climate Risk Narratives

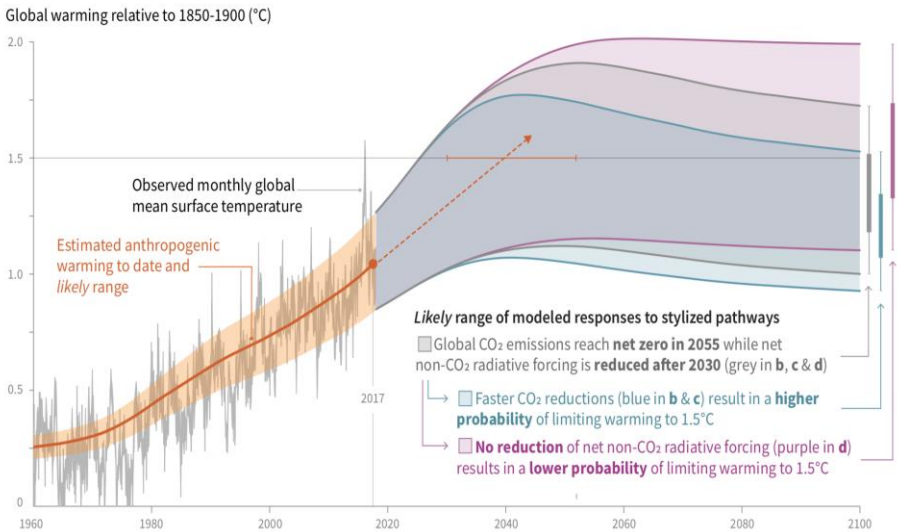


Jon Kuldaka

Communicating Climate Change Information through Climate Risk Narratives



a) Observed global temperature change and modeled responses to stylized anthropogenic emission and forcing pathways



Moving from here

&

here….

A3. Climate-related risks for natural and human systems are higher for global warming of 1.5°C than at present, but lower than at 2°C (*high confidence*). These risks depend on the magnitude and rate of warming, geographic location, levels of development and vulnerability, and on the choices and implementation of adaptation and mitigation options (*high confidence*). (SR15, SPM)

B1. Climate models project robust differences in regional climate characteristics between present-day and global warming of 1.5°C, and between 1.5°C and 2°C. These differences include increases in: mean temperature in most land and ocean regions (*high confidence*), hot extremes in most inhabited regions (*high confidence*), heavy precipitation in several regions (*medium confidence*), and the probability of drought and precipitation deficits in some regions (*medium confidence*).

B5. Climate-related risks to health, livelihoods, food security, water supply, human security, and economic growth are projected to increase with global warming of 1.5°C and increase further with 2°C.

FRACTAL
FUTURE RESILIENCE FOR AFRICAN CITIES AND LANDS

CLIMATE SYSTEM ANALYSIS GROUP
CSAG

UNIVERSITY OF CAPE TOWN
IYUNIVESITHI YASEKAPA • UNIVERSITEIT VAN KAAPSTAD

Communicating Climate Change Information through Climate Risk Narratives

To decisions made here…

Policy (municipal, provincial, national, regional)
Sectors (agriculture, water management, energy, health)
biodiversity/ecology, financial)
General public (perception, information, education)

Is incredibly difficult!

Communicating Climate Change Information through Climate Risk Narratives

Problems and challenges

- Requires comprehension and interpretation of complex scientific visuals representing signal, noise, and uncertainty over different spatial and temporal scales
- Requires understanding and interpretation of languages of uncertainty (e.g. what does a decision maker take from a statement of high agreement, limited evidence?)
- Requires implicit (or explicit in some form) downscaling to decision relevant scales, risk, and impacts

The result is that decision makers implicitly construct their own stories or narratives through interpretation of the complex and opaque evidence they are presented with.

Often, these implicit narratives reflect miss-understandings and misinterpretations of the evidence.

Communicating Climate Change Information through Climate Risk Narratives

In communicating climate information we have to recognize the *"decision makers perspective"*

Decision scales are:

- Place based: large-scale averages are of limited value
- attribute based: dependent on *characteristics* of a change
- time based: have a time horizon of consequence
- context based: compounded by non-climate stressors
- relevance based: climate may or may not be important
- compound: interactions of multiple variables in space and time

Climate information: fast becoming a major stress point for (*insert your favourite job title*)

or

The difference between theory and practice in practice, is greater than the difference between theory and practice in theory

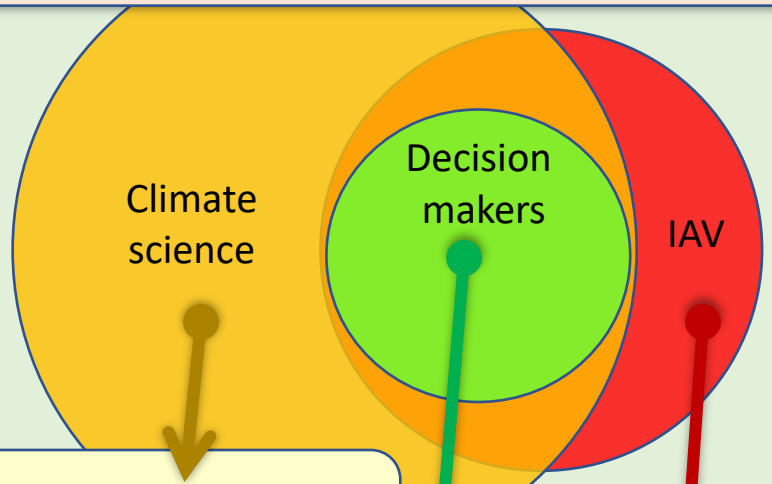
- Data is not information
- Information is not the same as knowledge
- Knowledge is not the same as understanding
- Understanding is not the same as Wisdom

?

http://xkcd.com/1273/

But this linear flow is problematic:
Breaking the "information chain" mentality

Co-produce
Co-explore
Co-design
Co-define
Co-refine



Advancing understanding of change in regional climates

Integration in the stakeholder-scale of decision, risk management, and policy

Integrate climate science in the IAV communities

Informs the activities of the other two

Decision making questions

Who makes what decisions?

With what information?

When do they make the decisions?

Who pays for decisions made & not made? (actual & impacts)

Western Cape Government

In the context of the recent water crisis & long term water resilience

The underlying questions are:

a) what constitutes information?

b) how to construct decision-relevant information?

Communicating Climate Change Information through Climate Risk Narratives

Climate Risk Narratives are one part of the solution to communicating climate information

- Climate Risk Narratives are an attempt to explicitly construct evidence based, **physically plausible** (based on climate science/modeling) **narratives of the future climate risk in a particular context** (eg. a city) including non-climate elements such as population growth and socio-economic futures in a co-production, participatory process

- Climate Risk Narratives are **written with absolute certainty** to avoid the pitfalls of uncertainty language and/or visualizing uncertainty. **Multiple narratives** are used to describe a range of possible futures given underlying uncertainty in the evidence. **Probabilities are not assigned to each narrative**.

Communicating Climate Change Information through Climate Risk Narratives

Climate Risk Narratives are one part of the solution

- Climate Risk Narratives are **"conversation starters"** to facilitate starting productive conversations with decision makers around potential changes in climate related risks and impacts

- Climate Risk Narratives are an **iteratively evolving** "framework" for ongoing engagement between decision makers and scientists.
    - Decision makers and other knowledge holders can critique and change language, terminology, socio-economic futures, etc. to make the narratives more relevant to their context.
    - Climate researchers can iterate the climate evidence/interpretation to better address the non- climate context. And repeat...

Communicating Climate Change Information through Climate Risk Narratives

Constructing a Climate Risk Narrative – telling a story

1. In your **sectoral/VIA context**, what are the main stressors that might harm your sector
   - E.g. population growth; roads and infrastructure; transport; pollution; land degradation; food/fuel price increases; corruption; access to markets, ……

Then ask….

How does the current climate effect your sector?

- Is climate a major or minor stressor compared to others listed and
- Will it magnify or reduce the effect of non-climate stressors?

Communicating Climate Change Information through Climate Risk Narratives

Constructing a Climate Risk Narrative – telling a story

2. Describe all of the potential **climate change** scenarios within a particular time horizon

- Hotter / Drier
- Hotter / Wetter
- Hotter / No change
- Cooler?

How is it getting hotter? (Mean, extremes, heat waves, ….)
How is it getting wetter? (Mean, extremes, monsoon, dry spells duration change, wet spell duration change, …..)

This is only rainfall and temperature, are there other variables to consider in your context?

Communicating Climate Change Information through Climate Risk Narratives

Constructing a Climate Risk Narrative – telling a story

3. Then try to answer the following questions in very short bullets:

i. How will the changes mentioned above impact the natural systems oc the region (climate, hydrology, vegetation, ….)

ii. Which key areas will be impacted by the changes

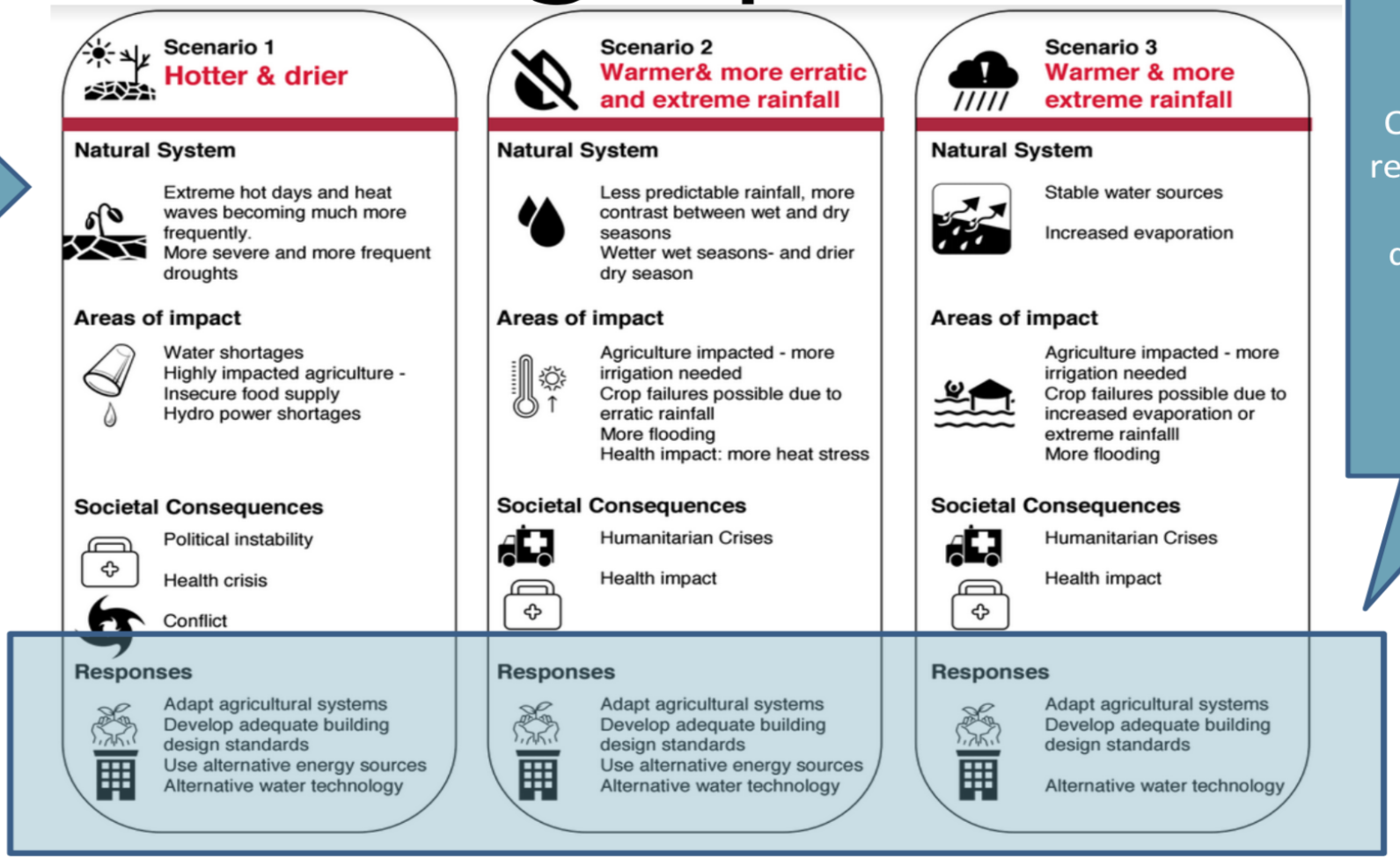
iii. What will the societal consequences of the changes be

iv. What potential responses could be considered to dampen/alleviate the impact of the change

Perhaps generate an infographic that communicates these messages clearly and concisely….

Communicating Climate Change Information through Climate Risk Narratives

infographics



Often identified responses end up very similar despite climate uncertainty

http://www.fractal.org.za/workshop-meeting-reports-city-specific-engagements/

FRACTAL
FUTURE RESILIENCE FOR AFRICAN CITIES AND LANDS

CLIMATE SYSTEM ANALYSIS GROUP
CSAG

UNIVERSITY OF CAPE TOWN
IYUNIVESITHI YASEKAPA • UNIVERSITEIT VAN KAAPSTAD