Theme I: The adequacy of the long-term global goal (LTGG) in the light of the ultimate objective of the Convention

South Africa

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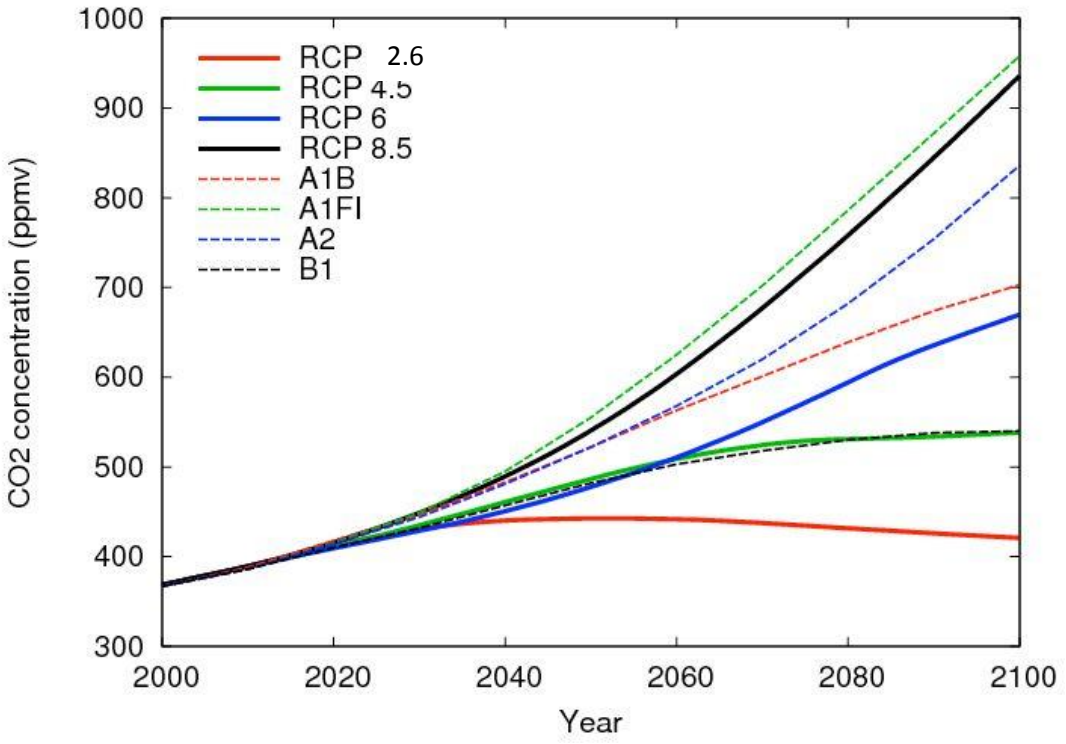
Emission Scenarios and Representative Concentration Pathways



From CSIRO: Martin Dix

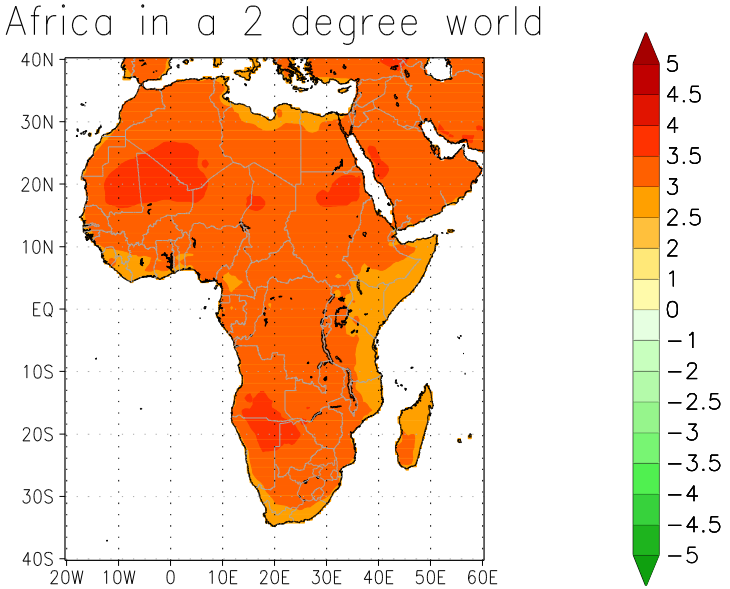
Projected temp anomalies for 2081-2100 relative to pre-industrial conditions (0-degree world)

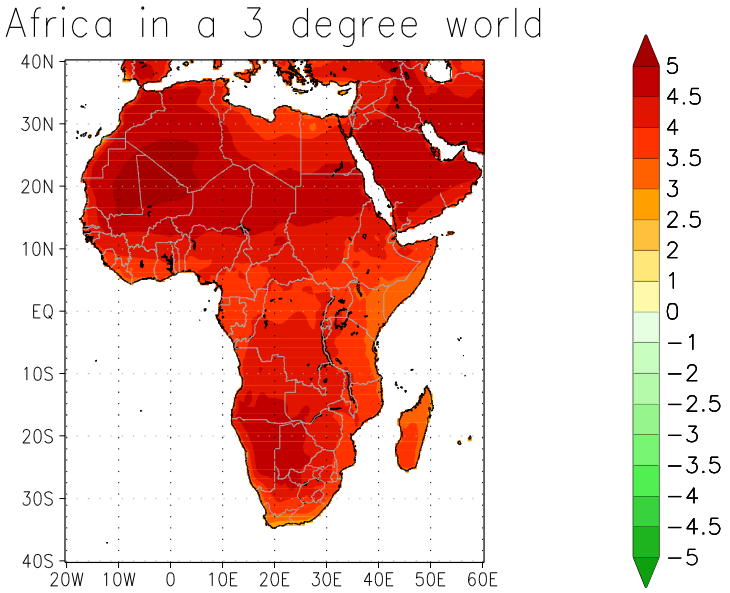
AR5 WG1 estimations relative to 1986-2005 were adjusted with a 0.6 °C factor

Only RCP 2.6 can safely keep us well below the Cancun agreed 2 °C, whilst the world is curently between A2 and RCP 8.5

Scenario	Temp anomalies relative to pre-industrial (adapted from AR5)
RCP 2.6	0.9 to 2.3
RCP 4.5	1.7 to 3.2
RCP 6	2.0 to 3.7
RCP 8.5	3.2 to 5.4

Implications of global average temperature increase to the African continent





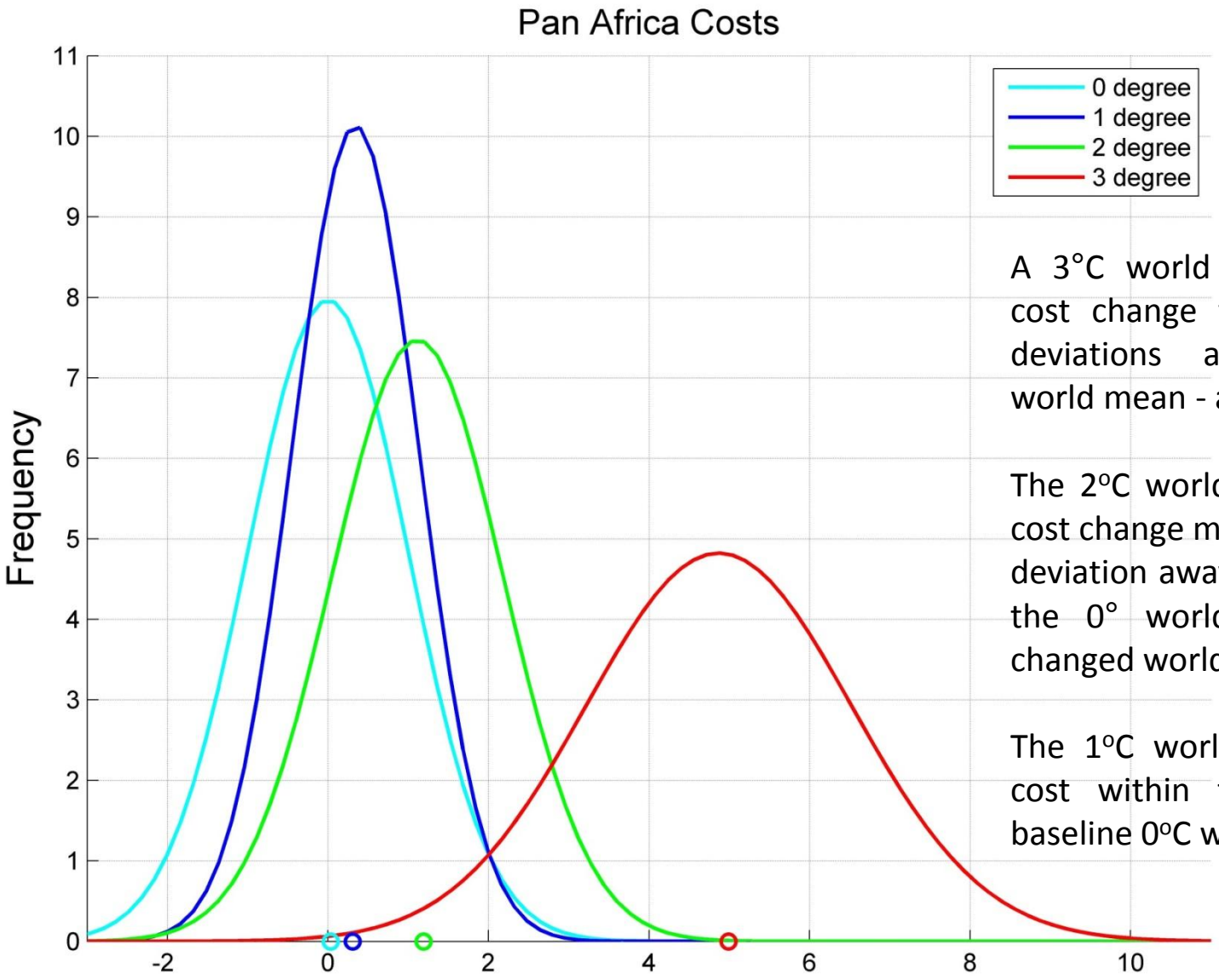
Africa temperature anomalies are shown for a 2 °C global world and a 3 °C global world (median from an ensemble of regional/CORDEX downscalings)

Over subtropical southern Africa and the northern Sahara, temperatures are projected to rise at 1.5 to 2 times the global rate of temperature increase

In interpreting implication of different temperature scenarios,

1. Regional downscaling of 6 GCMs was undertaken
2. Incidence of various disasters was generated from 20 year time-slices around the onset of the 1, 2 and 3 °C
3. Costs associated with those disasters was used to computed Probability Density Functions

Costs differences between the temperature scenarios normalised with those of the 0 °C world



A 3°C world reflects a median cost change that is 5 standard deviations away from the 0°C world mean - a different world

The 2°C world reflects a median cost change more than 1 standard deviation away from the mean of the 0° world - a significantly changed world

The 1°C world implies a higher cost within the realm of the baseline 0°C world

Key Messages for Policy Considerations

- Different regions of the world have different climate sensitivities - Africa shows a strong signal of rising temperatures and increased occurrence of droughts and heat-waves in the subtropics.

- Projected climate impacts define Dangerous Anthropogenic Interference, which is reflected in the Global temperature Goal; as such the Review of the Temperature Goal should be informed by Climate Impacts , e.g. Global Goal for Adaptation as well as Adaptation options from NAPs, Technology needs Assessment, etc.

- From projected changes in the frequency of occurrence of high impact climate events, and from knowledge of associated costs, PDFs may be constructed for the climate impact, adaptation and technology needs costs - for each of the 0, 1, 2, 3, 4 °C temperature worlds, etc. towards a Global Goal for Adaptation

- The 1 °C world seems to imply costs within the realm of the 0 °C world for the case of Africa; the 2 °C world implies costs significantly higher than that of the 0 and 1 degree worlds; a 3 °C world is associated with a drastic shift in climate impact and adaptation related costs - critical thresholds in the occurrence of high impact climate events are exceeded.

Annexure

Climate impact costs for the African continent for different global temperature scenarios