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Communicating climate information for decision-making

“Climate Risk and Vulnerability: A Handbook for Southern Africa”

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“Equipping decision makers in southern Africa with up-to-date information, appropriate for country-level planning, on the impact and risk of climate change and variability”

1. INTRODUCTION

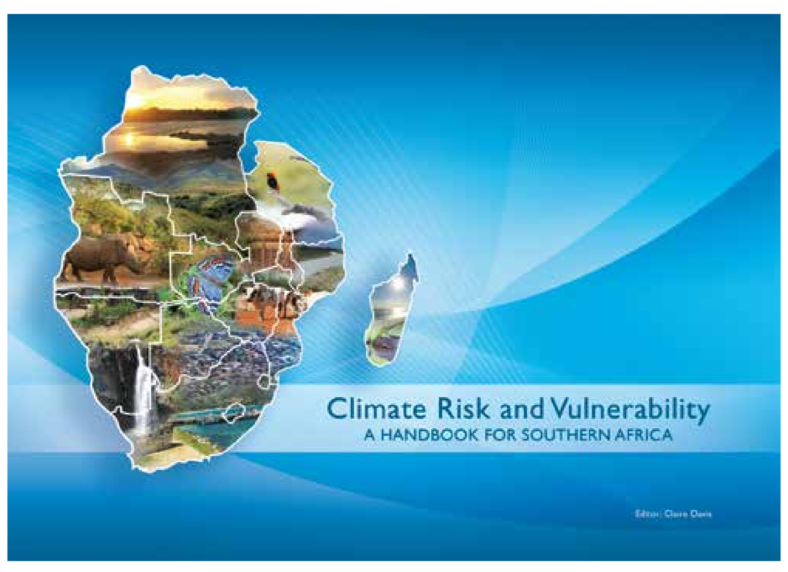
Within the Southern African Development Community (SADC), a number of calls have been made for improved planning under climate change and for access to climate change information in a format that is appropriate to their decision-making.

2. PROJECT BACKGROUND

The USAID-funded project presented here was designed to build capacity among the SADC member states in understanding information on climate impact and risk in the context of early-warning strategies and planning. The central product of this project was a “Climate Risk and Vulnerability: A Handbook for Southern Africa”. The aim of this handbook was to provide decision-makers with up to date information, appropriate for national and sub-national planning, on the risks of climate change and variability, as well as equipping them with understanding of potential responses to manage those risks.

3. CLIMATE RISK AND VULNERABILITY HANDBOOK

The handbook was produced by a team that comprised climate scientists, social scientists with experience in impacts, vulnerability and adaptation, and communications experts. The content covers the likely physical manifestations of climate change in southern Africa, together with an understanding of how social vulnerability and adaptive capacity affect how such changes translate into impacts.



The Climate Risk and Vulnerability Handbook for Southern Africa can be downloaded from www.rvatlas.org/sadc

Case studies drawn from around the region illustrate how climate risks can be successfully managed in southern Africa [Photo: Katharine Vincent]

4. WORKING MESSAGES

Climate projections from both dynamical (Engelbrecht et al. 2009; 2013) and statistical (Hewitson & Crane 2006) downscaling techniques were compared for areas of agreement and disagreement, to provide "working messages" around what we can expect from climate change in the southern African region. All the models assume an A2 SRES emissions scenario and are for the 2036-2065 period relative to the 1961-2000 period.

Temperature

- All models show projected increase in average, minimum and maximum temperatures, particularly for the interior of the subcontinent (Figure 1 and 2)
- All models show increases in very hot days and in heat-waves

Projected change in temperature based on 10 statistically downscaled GCMs

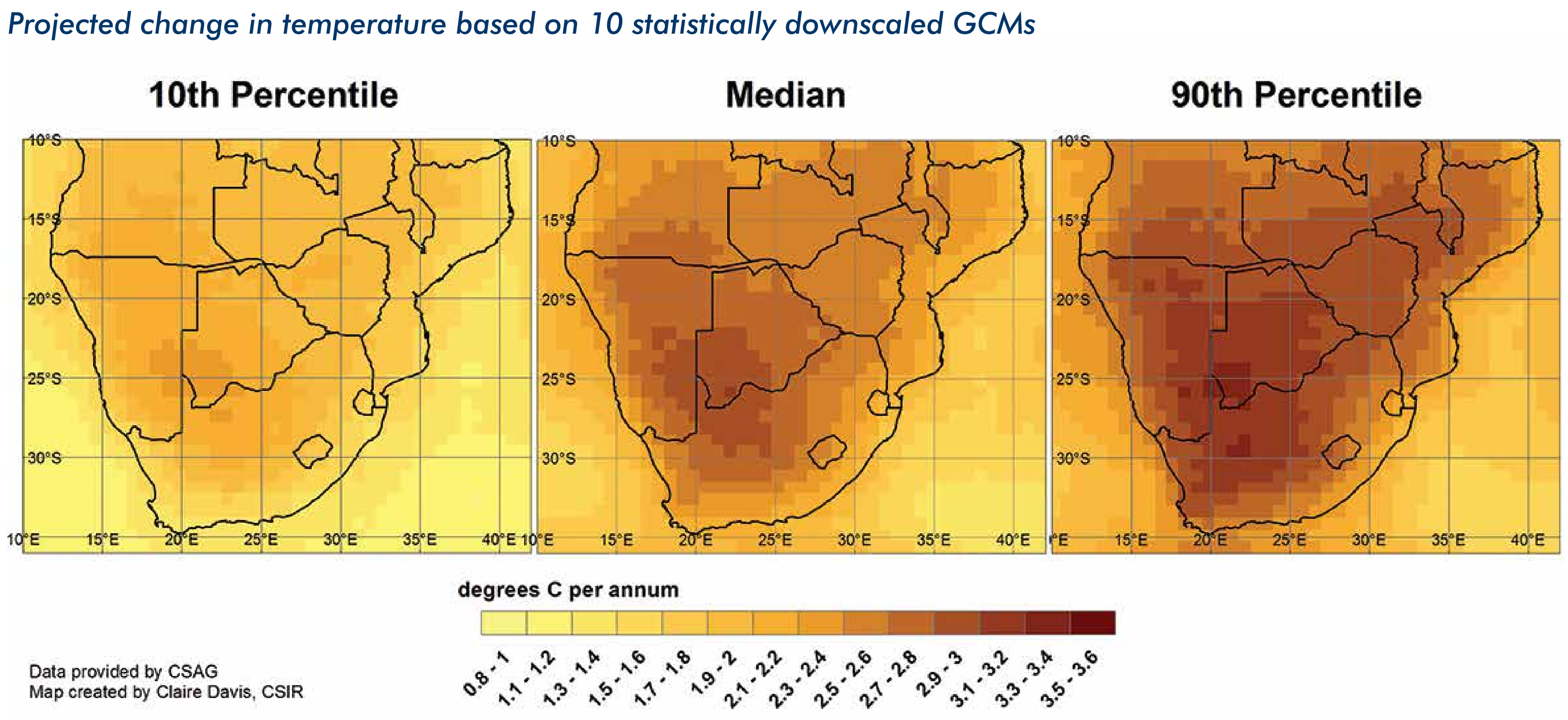


Figure 1: Projected changes in maximum temperature (°C) by 2036-2065 relative to the 1961-2000 period based on the 10th percentile, median, and 90th percentile of the 10 statistically downscaled GCMs

Projected change in temperature based on 6 dynamically downscaled GCMs

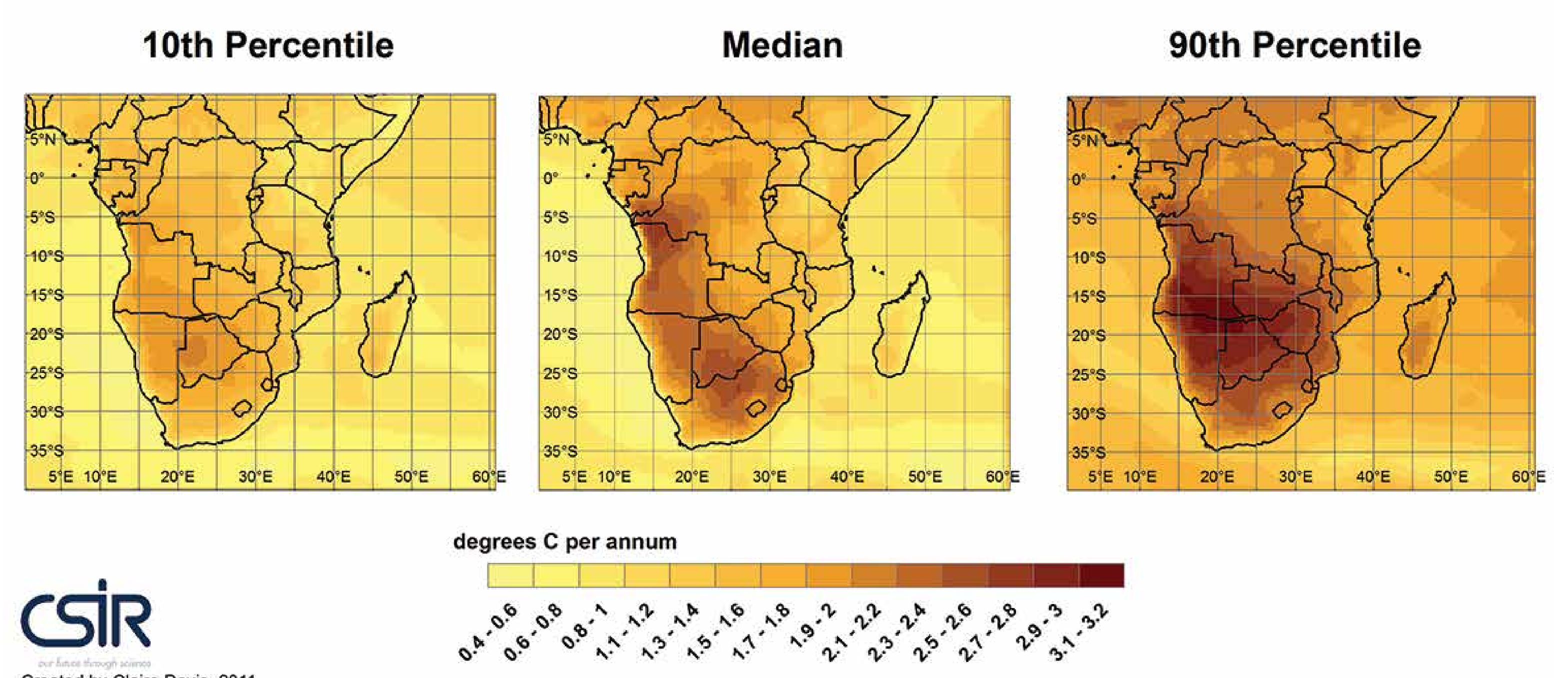


Figure 2: Projected changes in maximum temperature (°C) by 2036-2065 relative to the 1961-2000 period based on the 10th percentile, median, and 90th percentile of six dynamically downscaled GCMs

Rainfall

Despite the differences between the projected changes in rainfall derived from the statistical and dynamical downscaling methods there are still regions where the ensembles agree (Figure 3 and 4):

- Increases in annual rainfall over southeast South Africa,
- Decreases in rainfall over southern Zambia and Zimbabwe during summer (December-January-February), and
- Decrease in rainfall over central Zambia during spring (September-October-November)

The difference in rainfall projections between the statistical and dynamical downscaling methods may be attributed to the manner in which they relate surface rainfall to the physical mechanisms.

Projected change in seasonal rainfall based on the median of 10 statistically downscaled GCMs

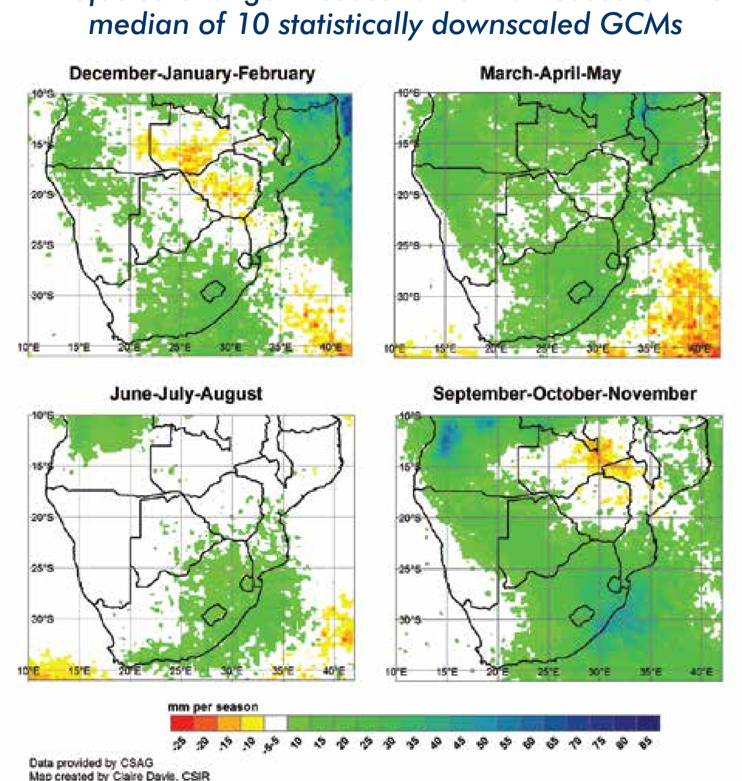


Figure 3: Projected changes in mean summer (DJF), autumn (MAM), winter (JJA) and spring (SON) rainfall (by 2036-2065, relative to 1961-2000) expressed as the change per season (millimetres) and based on the median change of 10 statistical downscaled GCMs

Projected change in seasonal rainfall based on the median of 6 dynamically downscaled GCMs

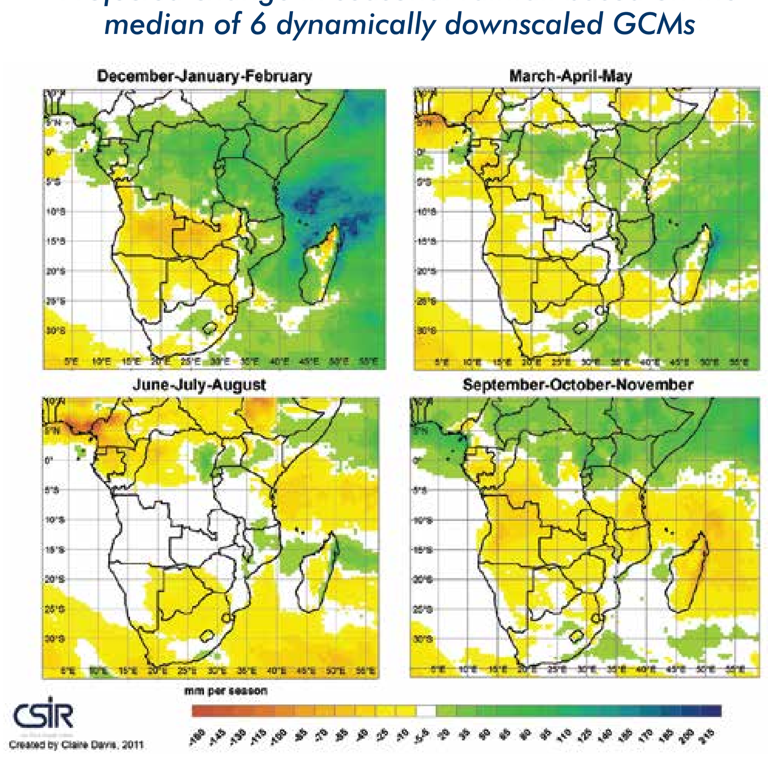


Figure 4: Projected changes in mean summer (DJF), autumn (MAM), winter (JJA) and spring (SON) rainfall (by 2036-2065, relative to 1961-2000) expressed as the change per season (millimetres) and based on the median change of of six dynamically downscaled GCMs

5. BUILDING CAPACITY IN SOUTHERN AFRICA: CLIMATE CHANGE TRAINING COURSES

Building upon the core chapters in the handbook, a three day training course was specially developed for Namibia, Mozambique, Zambia and Zimbabwe. In-country needs assessments were conducted prior to the training courses to ensure that information provision and capacity building was appropriately targeted to user needs, and thus is more likely to be actively integrated into decision-making.

The purposes of the training courses were:

- to provide stakeholders with access to the latest information on climate variability and change, and
- to improve the understanding of how to use this information to address climate risk in their planning decisions and strategies

The training course material can be downloaded from www.rvatlas.org/sadc

Participants from the climate change training course held in Windhoek, Namibia (October 2012)

Boaventura Cuamba from the Universidade Eduardo Mondlane presenting at the climate change training course held in Maputo, Mozambique (September 2012)

Participants from the climate change training course held Harare, Zimbabwe (April 2013)

5. CONCLUSION

This work has helped support SADC level engagement partly through providing source material for the SADC Climate Change Think Tank in early 2012; as well as the SADC Climate Change Science, Technology and Innovation (STI) Response Framework (drafted 2011; currently in finalization). Stakeholders acknowledged that the information provided through the training courses will be essential for long-term climate change planning in the region. Decisions informed by the research will be tracked and monitored in partnership with relevant stakeholders.

7. ACKNOWLEDGEMENTS

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8. REFERENCES

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