

Western Cape Winter Rainfall Outlook Summit Science and Stakeholder Encounter

Date: Monday 15th May 2017

Time: 9.00am to 4.00pm

Venue: NGI Van der Sterr Building, Department of Rural Development and Land Reform, Rhodes Avenue, Mowbray, 7700, Cape Town (<https://goo.gl/maps/cUCFfVSwVj92>).

Registration deadline 10th May 2017

1. Background & rationale

The Cape winter rainfall region is going through one of its worst droughts in decades. Following two consecutive years of below normal rainfall, the surface water supplies to the Cape Town metro as well as regional municipalities are at a historical low point of around 10%. The implementable mitigation options by metro and municipalities depends significantly on the projected seasonal rainfall, typically done through models and statistical analyses of long term data. These projections depend on the combined effects of natural variability and attribution of longer term climate change impacts linked to global warming.

The 2015/16 southern African drought and subsequent above average rainfall experienced in the summer rainfall region of South Africa (attributed to the large 2015/16 El Niño) are examples of variability inherent in inter-annual climate cycles and which have a measurable impact on society. The trends in this variability are important to elucidate and attribute if predictability of these sorts of climate events and their impacts, especially large scale capital investments on alternative or supplementary water supplies, are to be better managed.

The ACCESS programme is a NRF/DST funded research programme whose current research focus is on the topic of Annual Climate Cycle and Seasonality as a means of elucidating the role of climate in driving the variability and trends in earth systems (including ecosystems and social systems) at a range of time and space scales.

One of the key elements of this research focus is understanding inter-annual climate variability and trends from a range of perspectives; the fundamental biophysical aspects to the applications of research to address challenges in our society. Inter-annual variability is driven by a variety of forcing factors at a range of time and space scales. In order to improve predictability of inter-annual variability (and the associated trending extremes of seasons) these respective drivers require improved understanding.

Typically inter-annual variability remains within a mean range of seasonal extremes (with respect to the long-term means of climate parameters like maximum & minimum temperature, mean precipitation and others). However, periodically these are exceeded with droughts, or periods of excessive precipitation which may persist for one or more seasons. The impact of climate change on the trends of this range of seasonal extremes is an additional

important consideration. South Africa lies in a sub-tropical latitudinal position of strong seasonality and is affected by global climate events such as El Niño and La Niña and is subject to a range of additional not well understood complex interactions of climate system such as those inherent in the polar system.

The scientific challenge is to improve the predictability of this annual cycle variability and its impact. The scientific skill with which seasonal forecasts and long term trends can be predicted or projected varies itself geographically across the country and temporally, and also depends on which models and scientific methods are employed and how these are interpreted.

Given the magnitude of the current water crisis in the Western Cape, it is necessary that the scientific community considers this current climate event with three aims in mind:

- a. To share and discuss existing inter-institutional knowledge on the variability and trends in the winter rainfall region, particularly the prognosis for the 2017 winter season.
- b. To prioritise research questions aimed at managing the immediate and longer term impact of this and other similar climate driven crises in the future (and specifically to identify the constraints and opportunities for improved predictability of Western Cape Rainfall).
- c. To communicate with a consistent and clear message to all affected stake holders regarding the current crisis and the potential provision of optimal information in this regard for the respective authorities and stakeholders.

2. Schedule

16th May 2017

Venue: TBA

09h00 – 16h00

A set of experts and authorities will be assembled to address these and related topics:

- What drives influences winter and summer rainfall in the Western Cape typically and on the event scale?
- How good are the predictions, why are there conflicting predictions and what do we need to do to improve them?
- What are the prospects for normal, above normal or below normal rainfall this coming winter and the following winter?
- How many seasons of normal rain would it take to secure the Western Cape's water supply?
- Can we expect drier Western Cape winters in the future?
- Where must it rain in the Western Cape (taking topography into account)?
- How serious is the water security threat in the Western Cape?
- What are our options for managing water supply in the Western Cape?

- Session 1: Science discussions (invited session)
09h00 – 11h00: Set of short presentations
11h00-13h00: Scientific discussion
Lunch
- Session 2: Public engagement (open session)
14h00 -14h30: Presentation of summary from session 1
14h30-16h00: Panel and Q&A Session

Output:

1. Scientific summary position paper for researchers (may be completed after the event)
2. Press release

Please visit this website to register as a speaker and/or participant.

<https://goo.gl/forms/bspVIEqPOt1mO3nw2>

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