

Climate Service

Observations

Climate Data

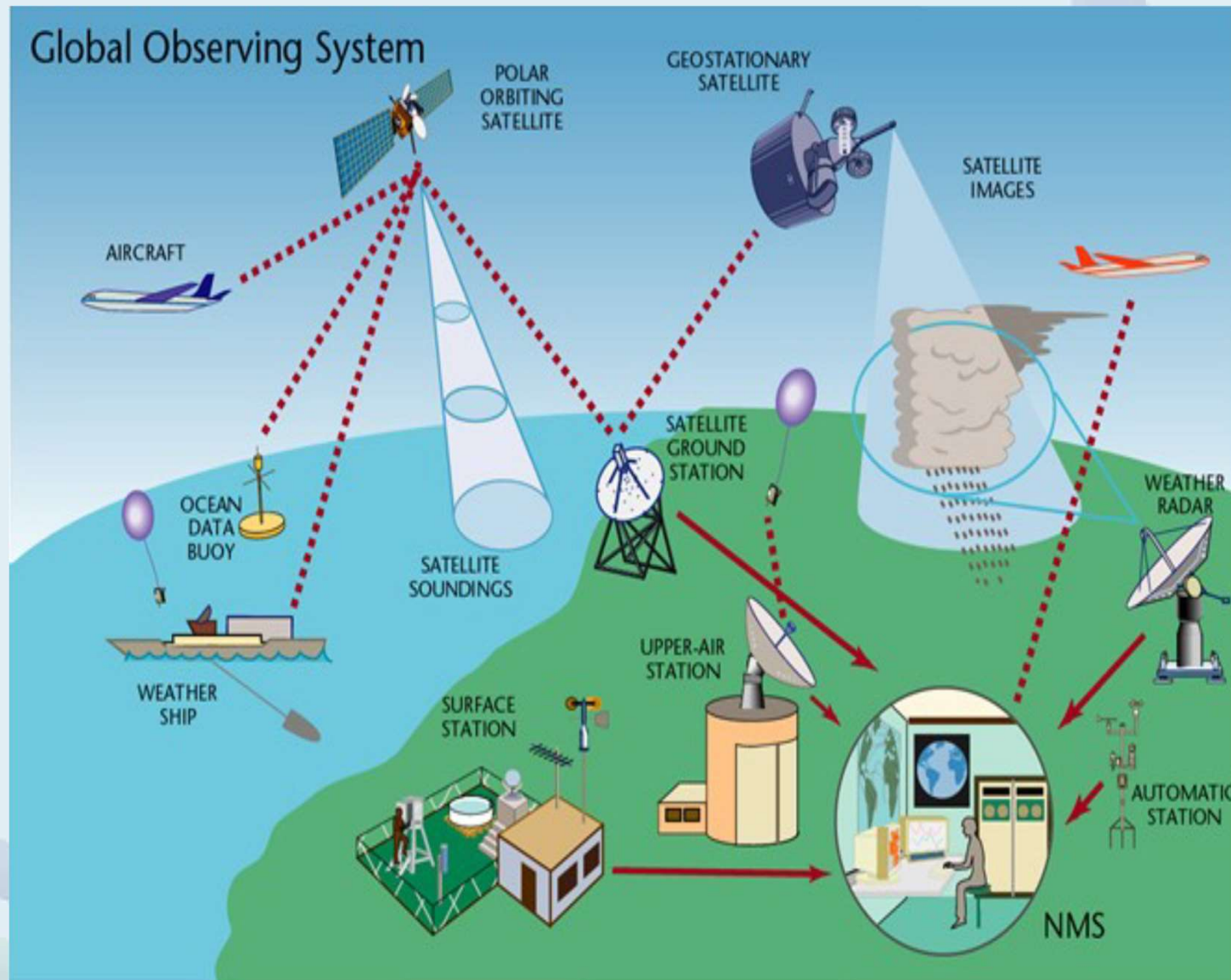
Climate Information

Climate Data Analysis and Research

By
Mthobisi Nxumalo

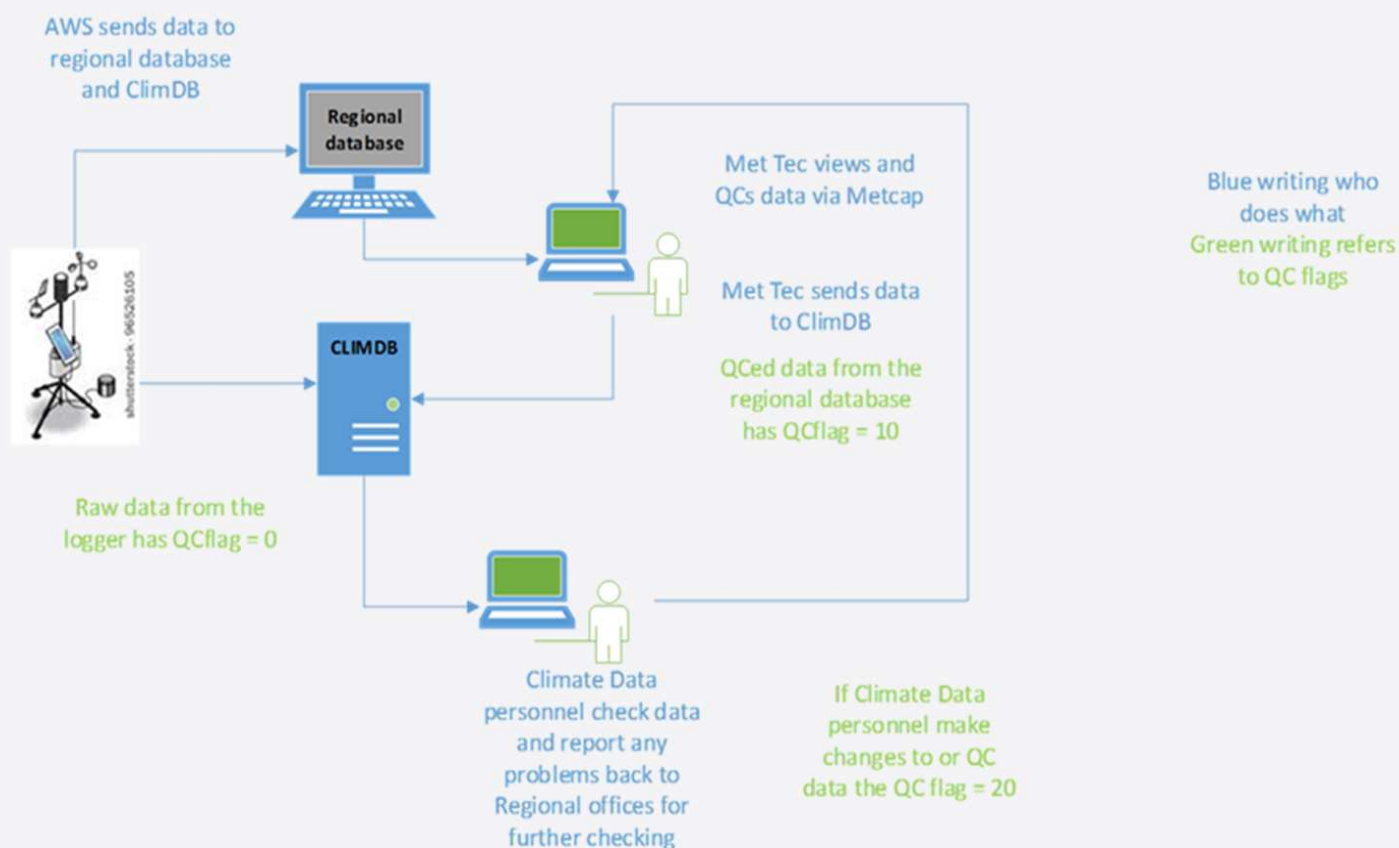


Climate data sources



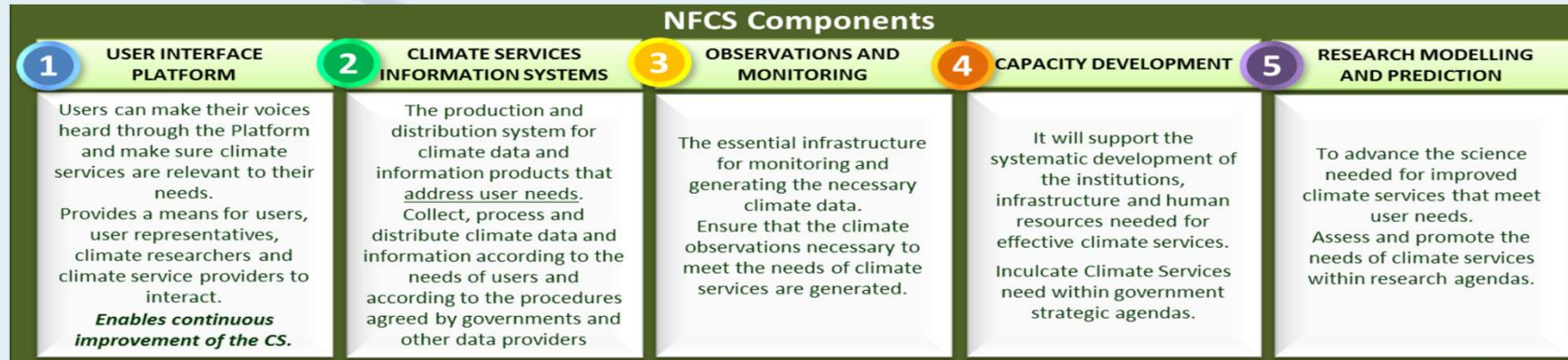
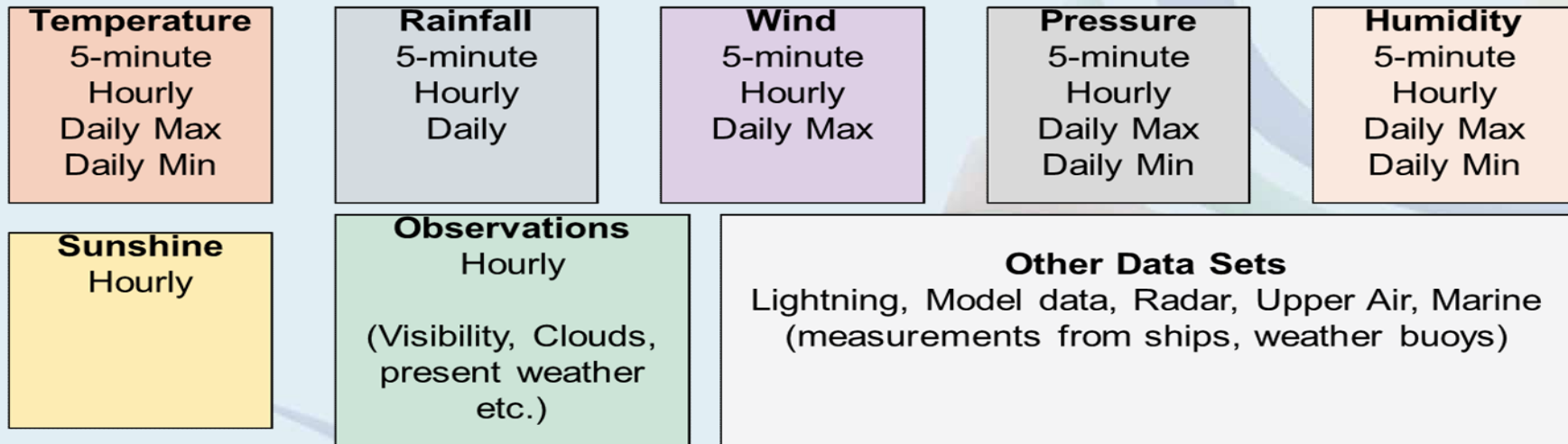
Typical climate data flow

Basic diagram showing the flow of data from sensor to ClimDB

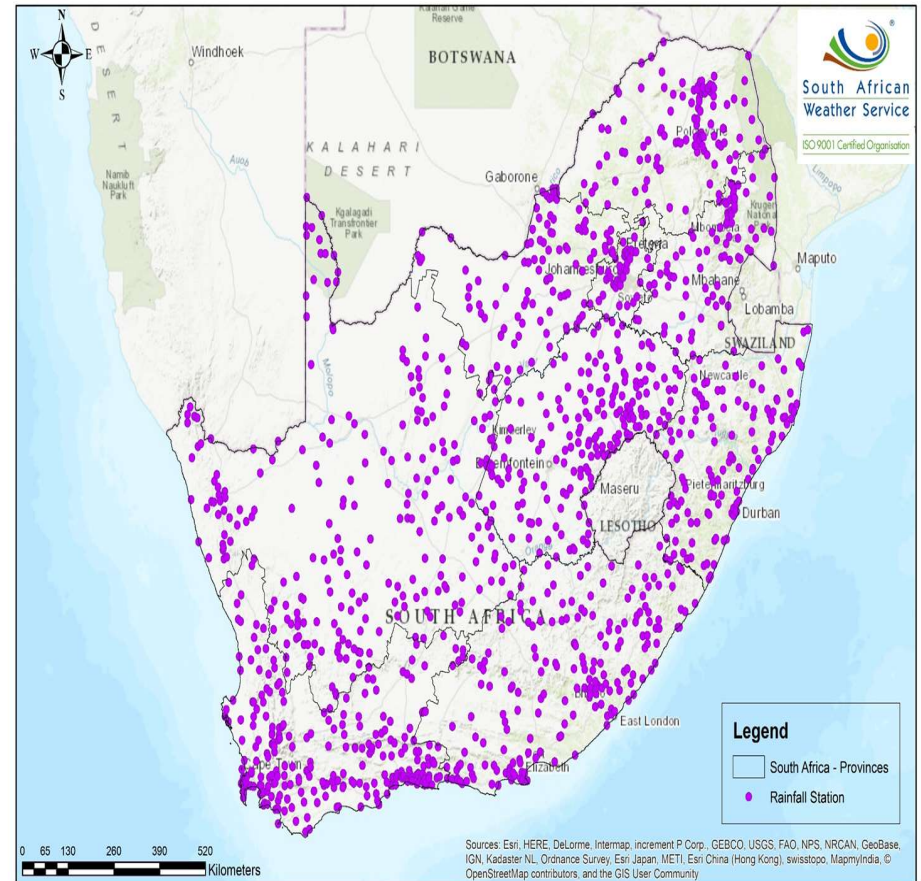
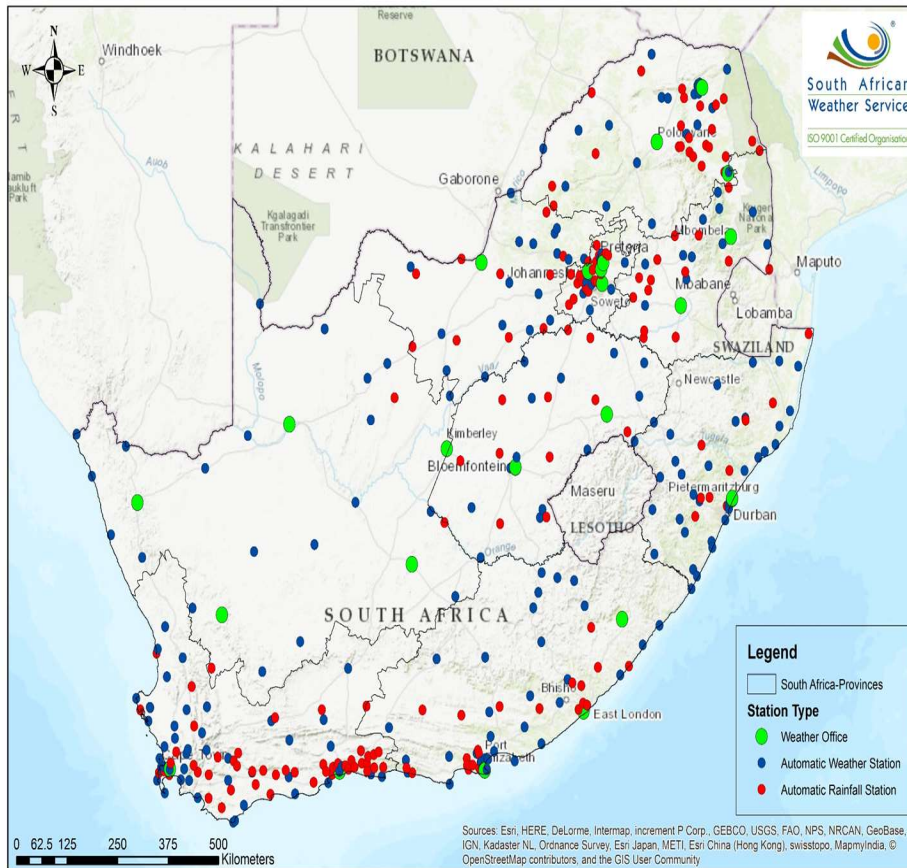


**South African
Weather Service**

Climate data types & intervals



National station network



**South African
Weather Service**

What do we do with all this?

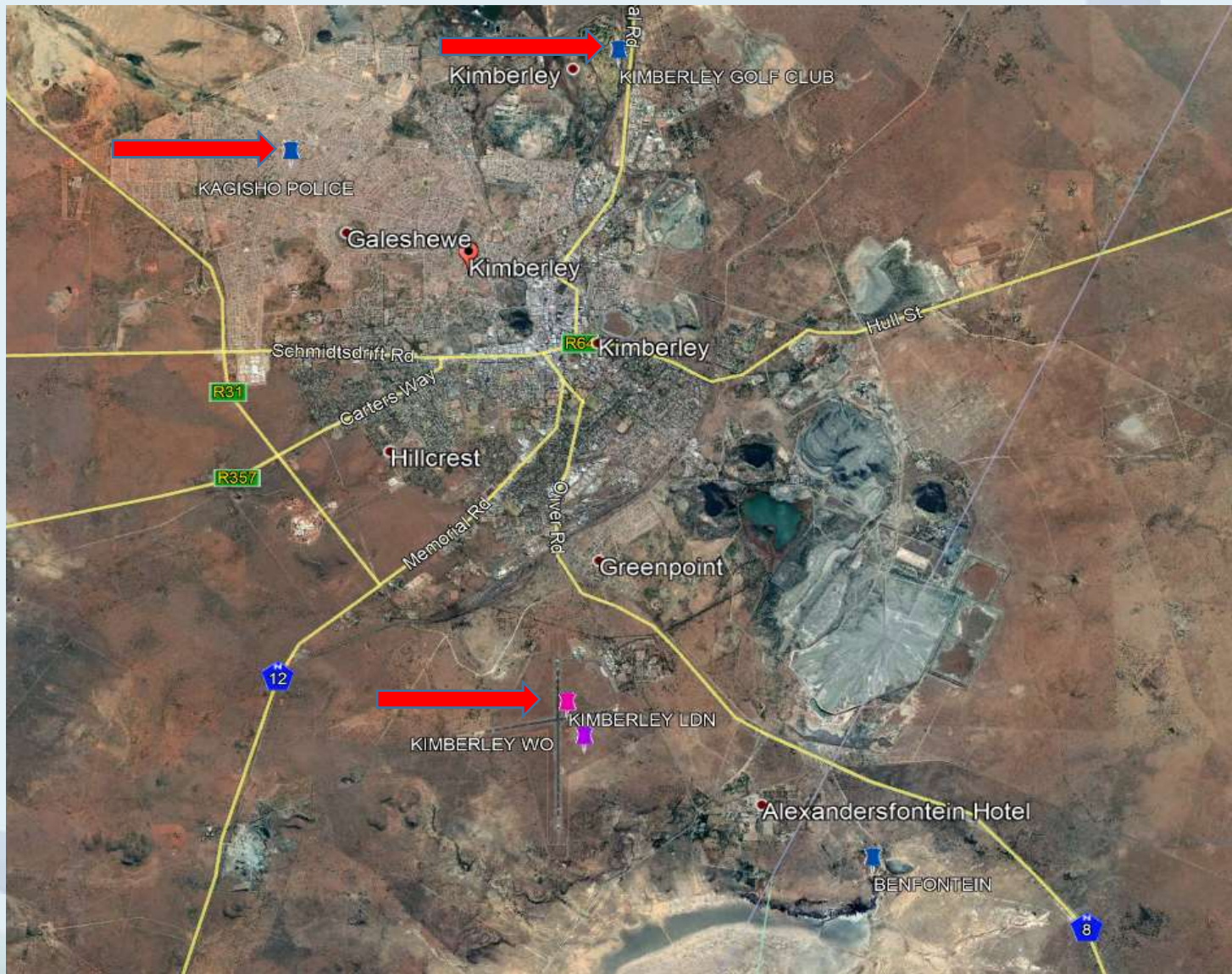
Climate Information – Public Good services

- **Data / Information freely available on the SAWS website**
 - Rainfall – daily, 10-daily, monthly
 - Temperatures – daily Max & Min
 - Daily extremes – rainfall, Max & Min temperatures
 - New records – rainfall, Max & Min temperature
 - Rainfall maps (mm & % of normal) – 10-daily, monthly and seasonal – backdated from 2008
 - Synoptic weather maps (also known as Daily Weather Bulletin) – backdated from 2008; further back available upon request
 - Drought Monitoring
- **Data and information for educational purposes**
 - Disclosure Statement
- **Data for funded research projects**
 - Service fee for the extraction and dissemination of the data

Climate Information – Commercial services

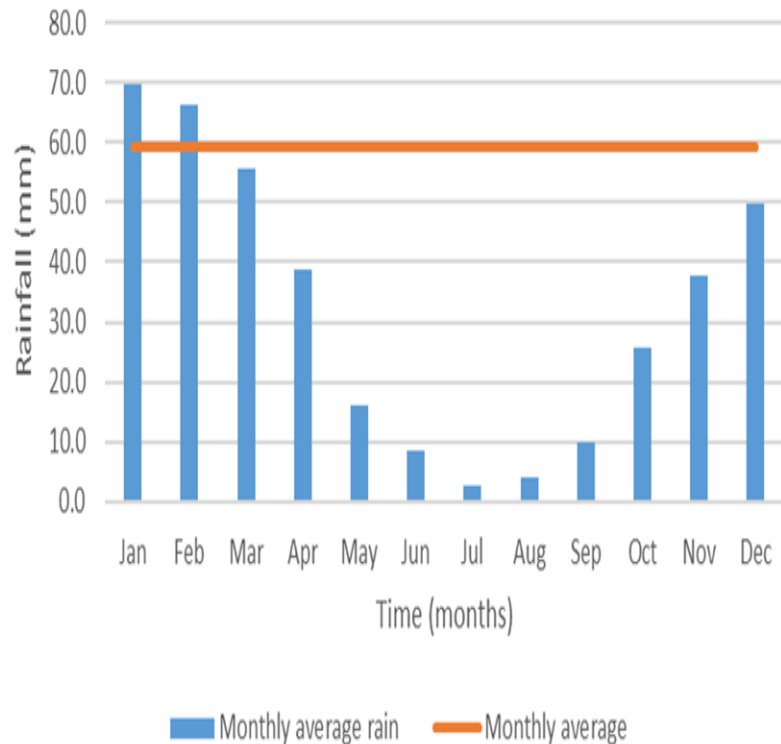
- Five-minute data:
 - Temperature, rainfall, wind speed, wind direction, pressure, humidity
- Hourly data:
 - Temperature, rainfall, wind speed, wind direction, pressure, humidity, sunshine, visibility, present weather
- Daily data:
 - Rainfall, min temp, max temp, wind gust, min pressure, max pressure, min humidity, max humidity
- Average data:
 - Temperature, rainfall, wind speed, pressure, humidity, sunshine, visibility, present weather (some stations only at 08:00, 14:00 and 20:00 SAST)
 - Evaporation (limited stations up until 1987)
 - Radiation (limited stations mean hourly averages up until 1987)

Kimberley weather stations

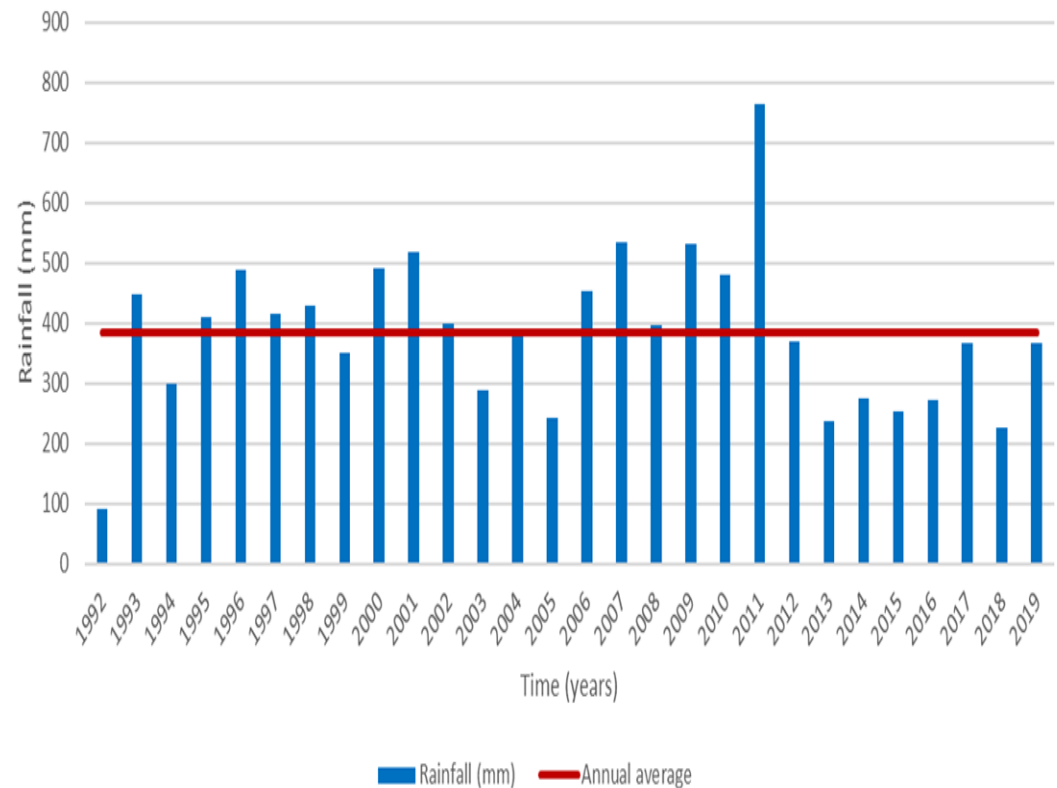


Kimberley WO rainfall trends

Kimberley WO monthly rain average

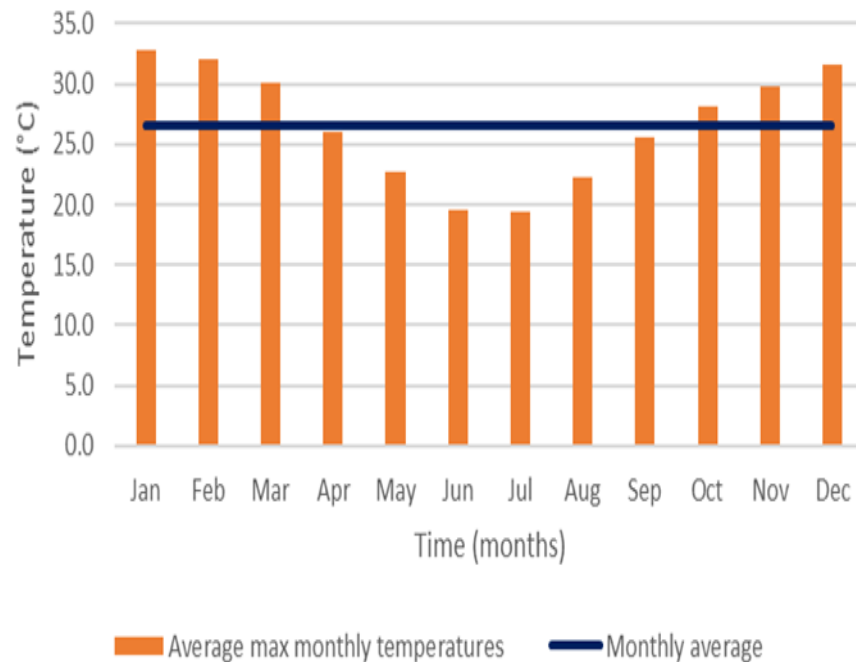


Kimberley WO annual rain totals

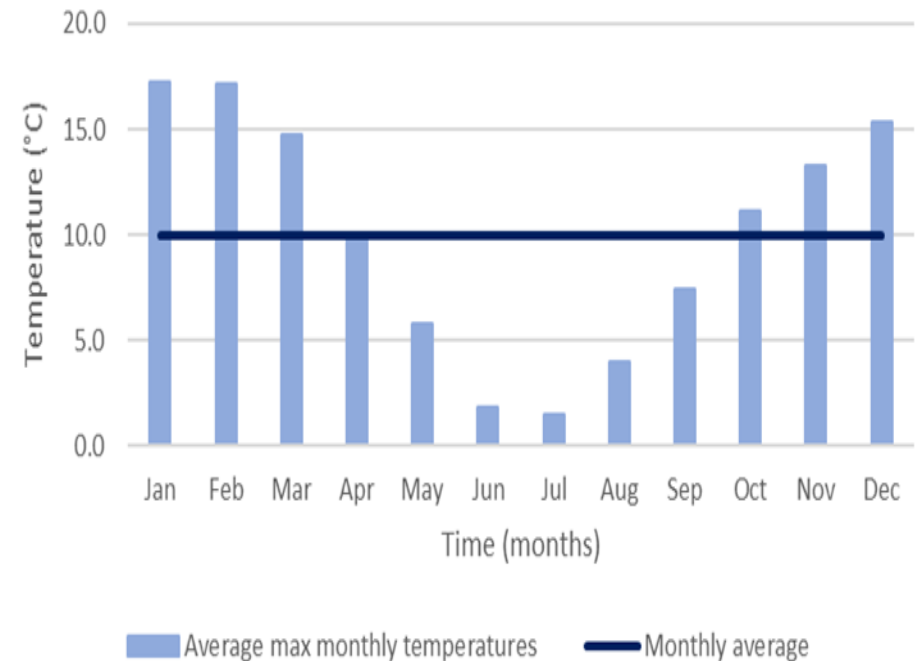


Kimberley WO ave monthly temperatures

Kimberley WO monthly ave max temperatures



Kimberley WO monthly ave min temperatures



Recent rains in Kimberley

- DFA reported decreasing rains when comparing January and February 2017 and 2018.
- This was when Government declared a national state of disaster to deal with the country's drought and water crisis.

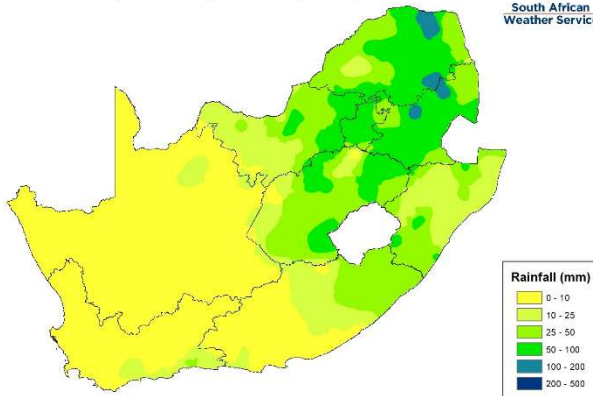
Kimberley WO	Jan 2017	Feb 2017	Jan 2018	Feb 2018	Jan 2019	Feb 2019	Kimberley Golf Club	Jan 2017	Feb 2017	Jan 2018	Feb 2018	Jan 2019	Feb 2019
	83.2	109.0	63.8	27.6	40.6	111.2		109.0	134.7	69.0	58.0	10.0	70.5

- It looks like on average, the rain is struggling to recover.
- An exception is for February 2019 in Kimberley WO.

Recent rainfall trends in Kimberley

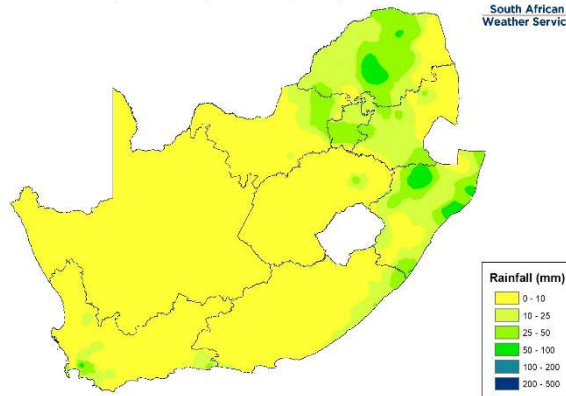
Rainfall (mm) for 01-10 January 2019

(Based on preliminary data)



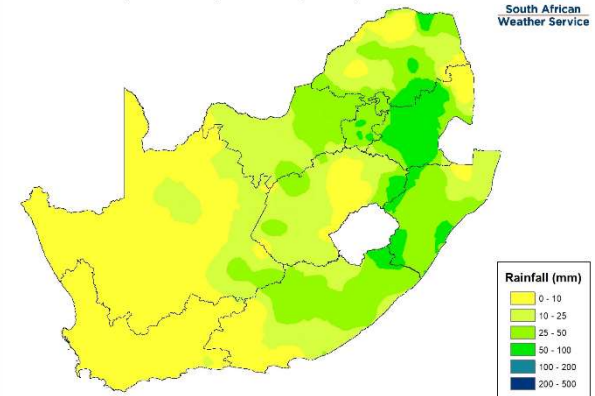
Rainfall (mm) for 11-20 January 2019

(Based on preliminary data)



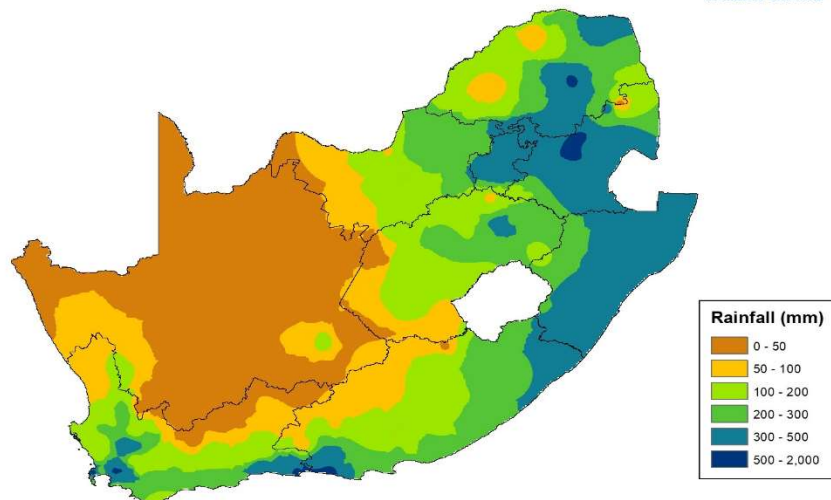
Rainfall (mm) for 21-31 January 2019

(Based on preliminary data)



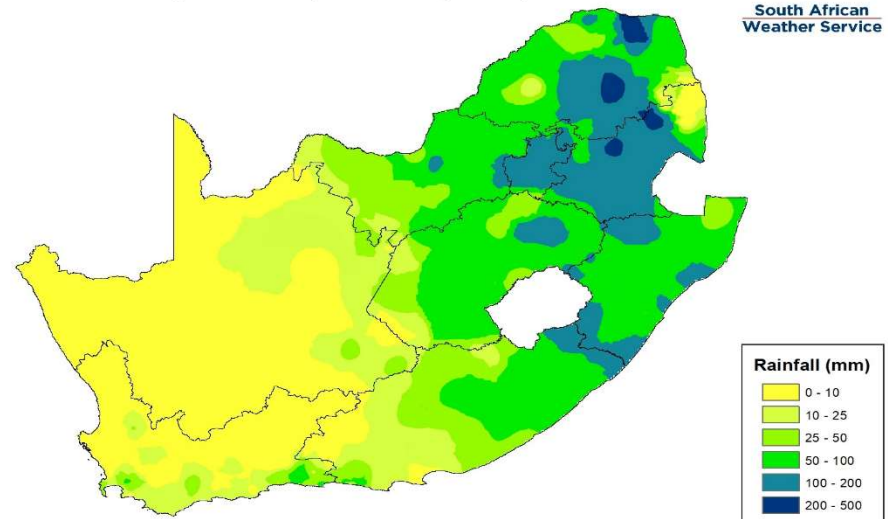
Rainfall (mm) for season July 2018 - January 2019

(Based on preliminary data, The number of stations vary depending on the data availability)



Rainfall (mm) for January 2019

(Based on preliminary data)



Climatological extremes analysis

Daily rain	Extreme value	Date		Daily Tx	Extreme value	Date		Daily Tn	Extreme value	Date
Highest	96.6 mm	11 March 2019		Highest	43.3 °C	05 January 2016		Highest	25.4 °C	04 January 2016
				Lowest	6.2 °C	07 July 1996		Lowest	-8.4 °C	10 October 2010

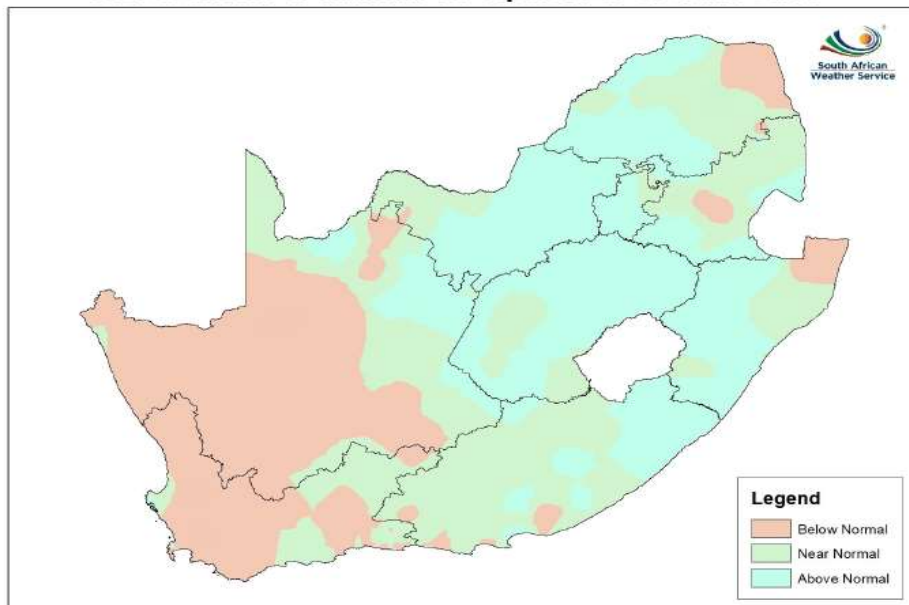
Additional climate products



Drought Monitoring – June 2019

During the 3-month period from April to June 2019, below-normal rainfall is most evident over large parts of the Northern and Western Cape. The largest part of the remainder of the country experienced near-normal to above-normal rainfall.

Assessment of Rainfall for April 2019 to June 2019

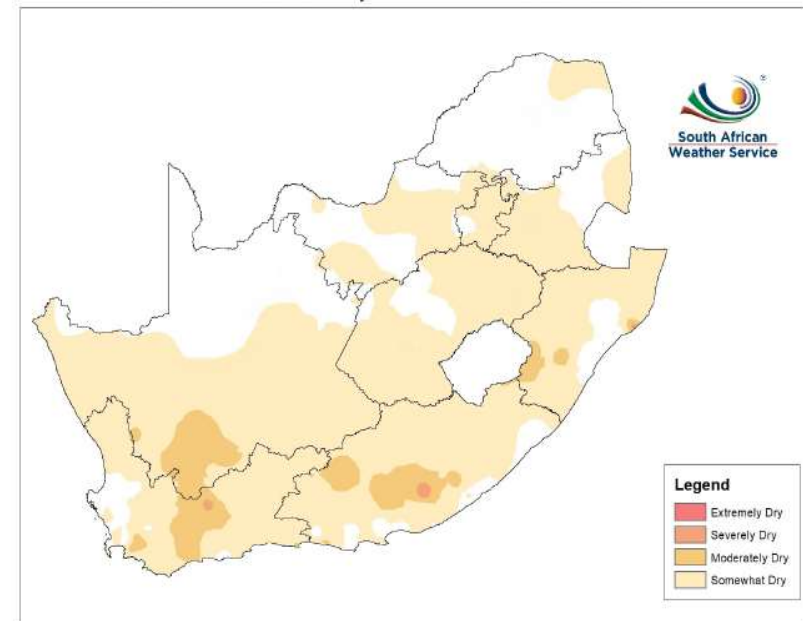


Drought Monitoring – June 2019

Indications of Drought - Standardised Precipitation Index (SPI)

During June 2019, somewhat dry to moderately dry conditions in isolated areas were experienced over a large part of the country.

Standardised Precipitation Index for June 2019



...Additional climate products

South African Weather Service

Ad Rainwater Harvesting Systems Urban Rain Systems Visit Site >

environmental affairs

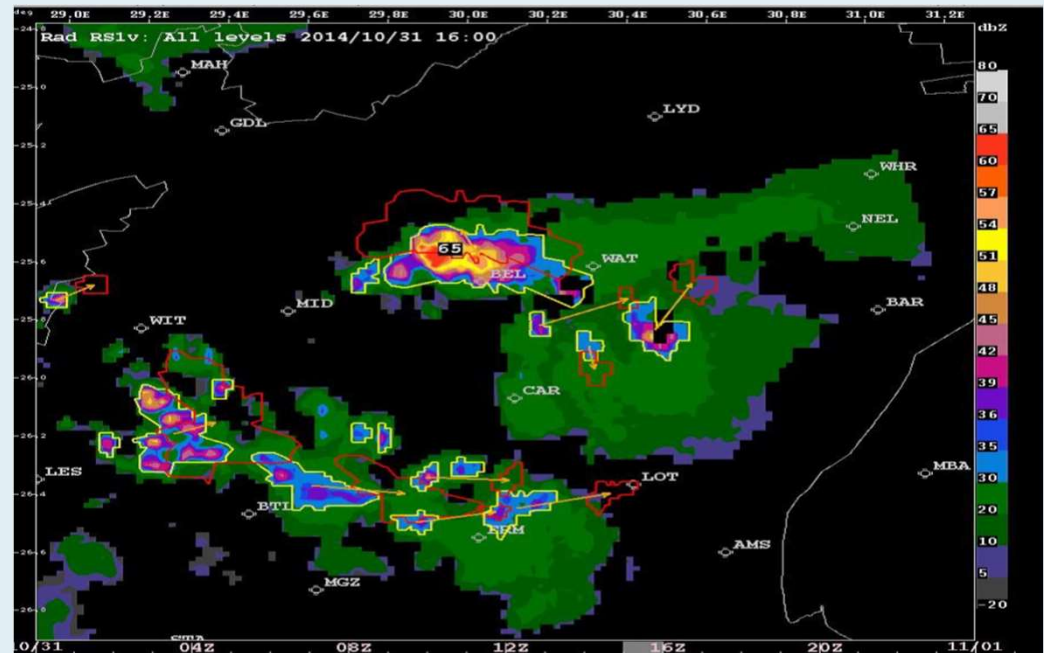
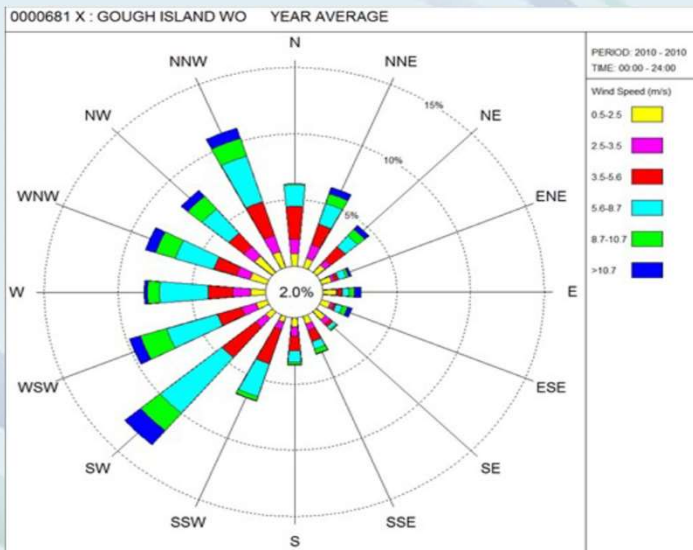
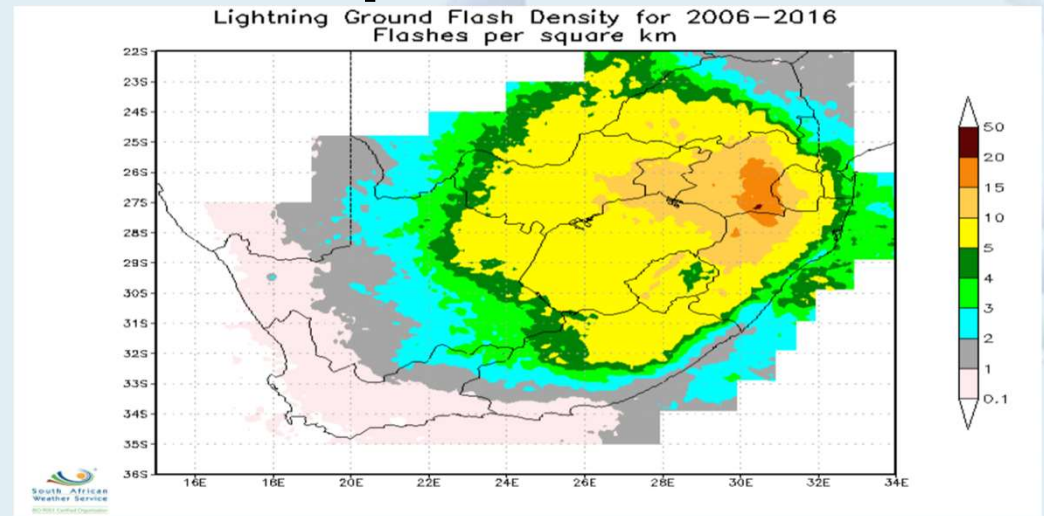
Weather Forecast Observations Climate Media Product & Services About Careers FAQs Contact

Atmospheric and Meteorological Terminology

Enter Term... Select Language

Rainfall :
A shower or fall of rain

Language	Equivalent
ISIZULU	Imvula
Other Languages	
SETSWANA	Pula
SEPEDI	Go na ga pula
TSHIVENDA	Vhuno, mibvumbi
XITSONGA	Mpfula
ISIXHOSA	Ukuna

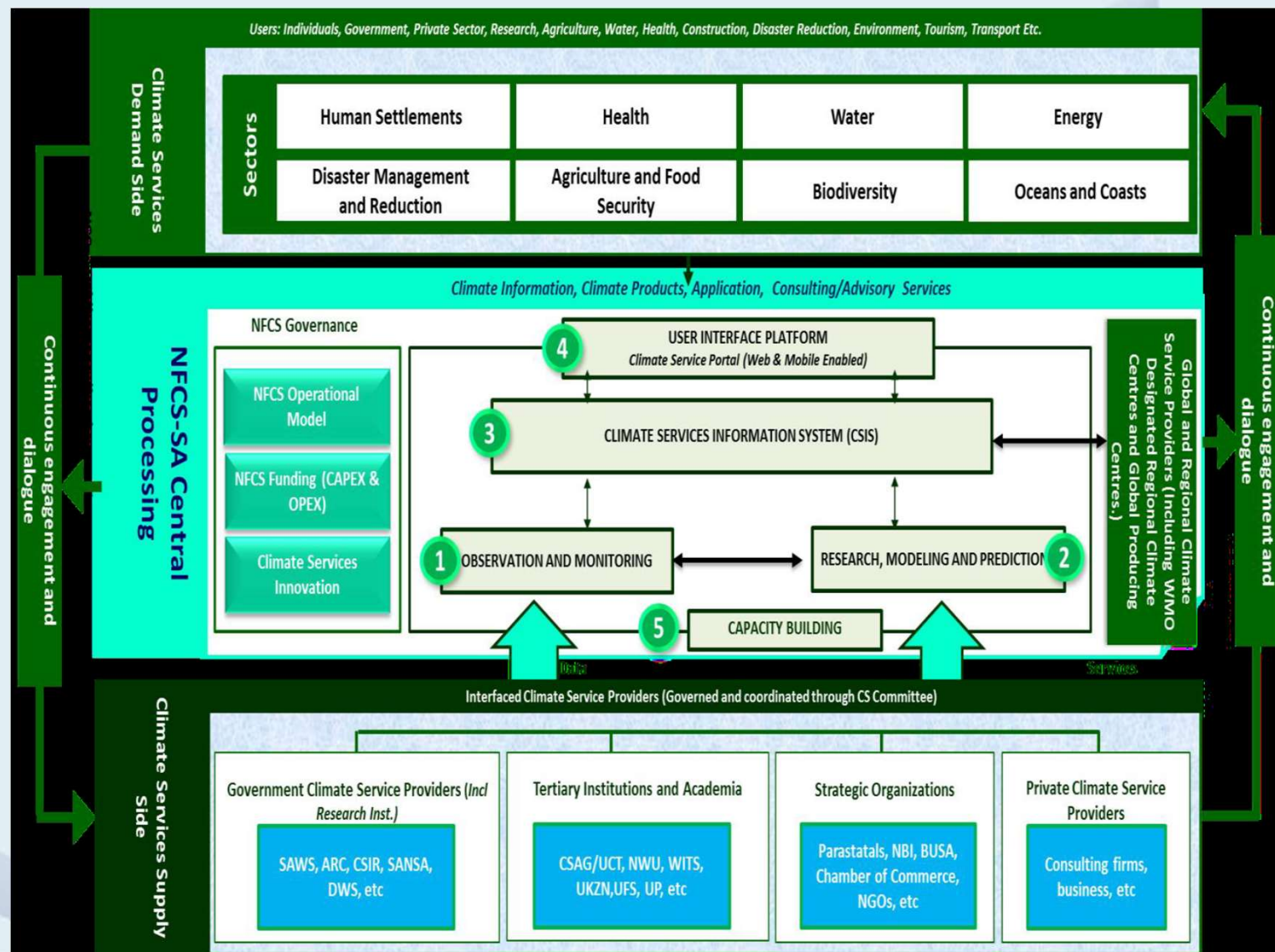


2019/08/12

Templ ref: PPT-ISO-colour.001 Doc Ref no: WCS-CLS-DEFF_NCCIS_Training-Kimberley-August-2019-001.1

14

SAWS & NFCS-SA client sectors



South African
Weather Service

THANK YOU

www.weathersa.co.za

