BUILDING CLIMATE RISK RESILIENCE FOR MAIZE FARMING – FACT SHEET

Eastern Cape – Mthatha - Ugie region

Characteristics: Mixed farming region, with some irrigation. Common crops are maize, sunflowers, sorghum, potatoes, sugar beans and vegetables. Livestock in the form of cattle, sheep are very common with goats and pigs also kept.

Planting dates for maize vary between mid-September to mid-December. If the rainfall onset is after December, then maize is not planted; instead, beans or teff is cultivated. Average **maize yields** vary between 2 – 4t/ha for rainfed maize, though some farmers are achieving 4 – 6t/ha and higher.

Existing climatic threats include: Late-onset; drought; hail; very hot days; late rain during the grain drying period, late season heat unit shortage.

Rainfall averages around 650mm per annum (less elsewhere in the region), with a slight increasing trend detectable over the last 80 years. Variability is not high with a minimum annual rainfall of 365mm (1992/93) and a maximum of 876mm (1995/96). Rainfall occurs between September and April, with over 70% of annual rainfall being recorded between October and March.

Temperatures are generally mild varying between average maxima of 21 degrees in Jun (winter), and 28 degrees in February. Very hot days (over 32 degrees are quite common (5-6 per month in summer).

Existing rainfall averages of selected stations in the region

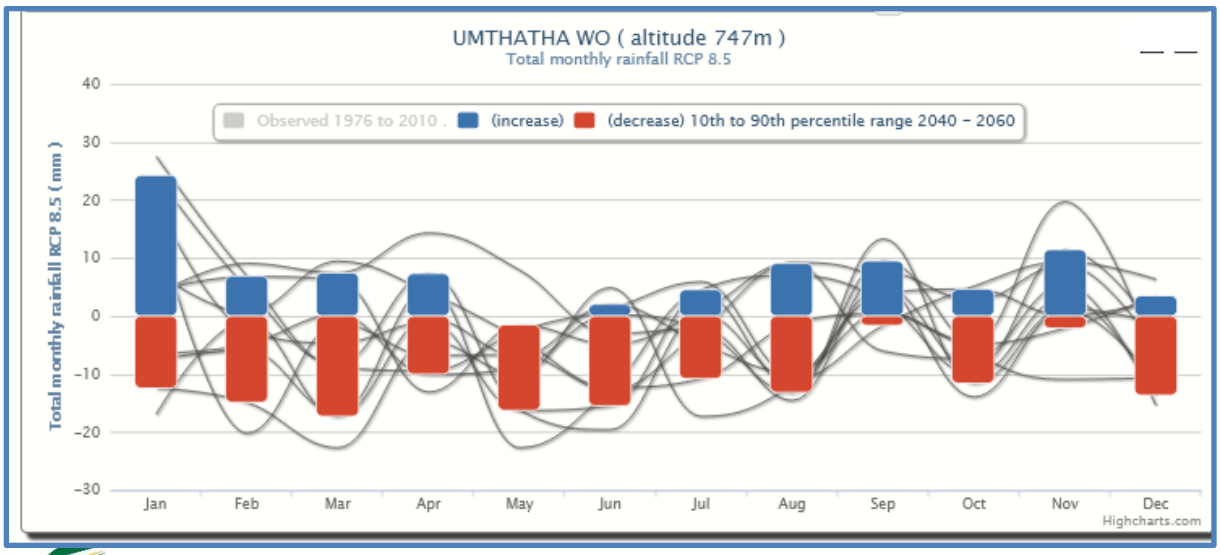
Mthatha RAINFALL	
Month	Average
Jan	94
Feb	86
Mar	84
Apr	52
May	17
Jun	13
Jul	15
Aug	21
Sep	28
Oct	68
Nov	85
Dec	94
Total	657

Ncora flats RAINFALL	
Month	Average
Jan	91
Feb	95
Mar	76
Apr	49
May	17
Jun	7
Jul	18
Aug	15
Sep	26
Oct	93
Nov	91
Dec	91
Total	669

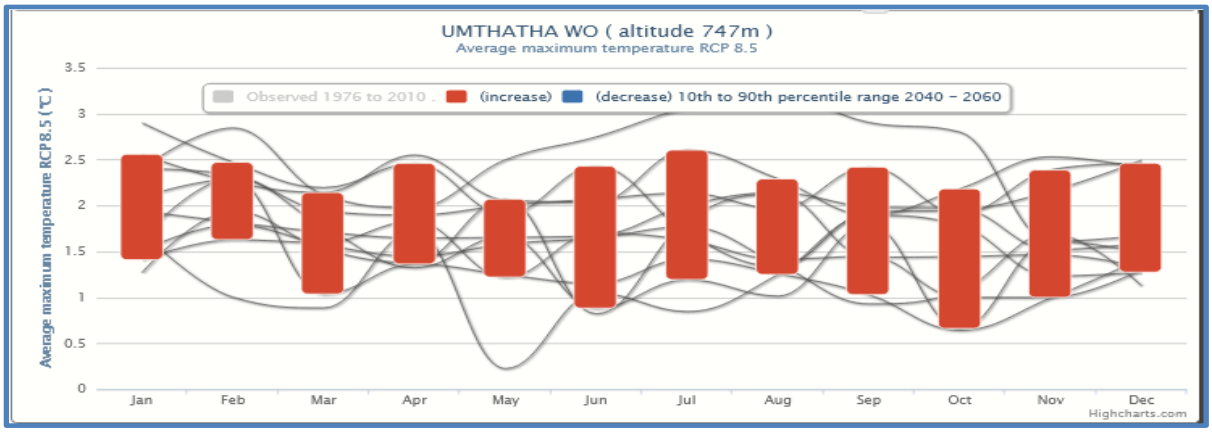
Elliot RAINFALL	
Month	Average
Jan	97
Feb	72
Mar	74
Apr	44
May	16
Jun	22
Jul	12
Aug	14
Sep	38
Oct	48
Nov	70
Dec	78
Total	585

Expected Future Conditions:

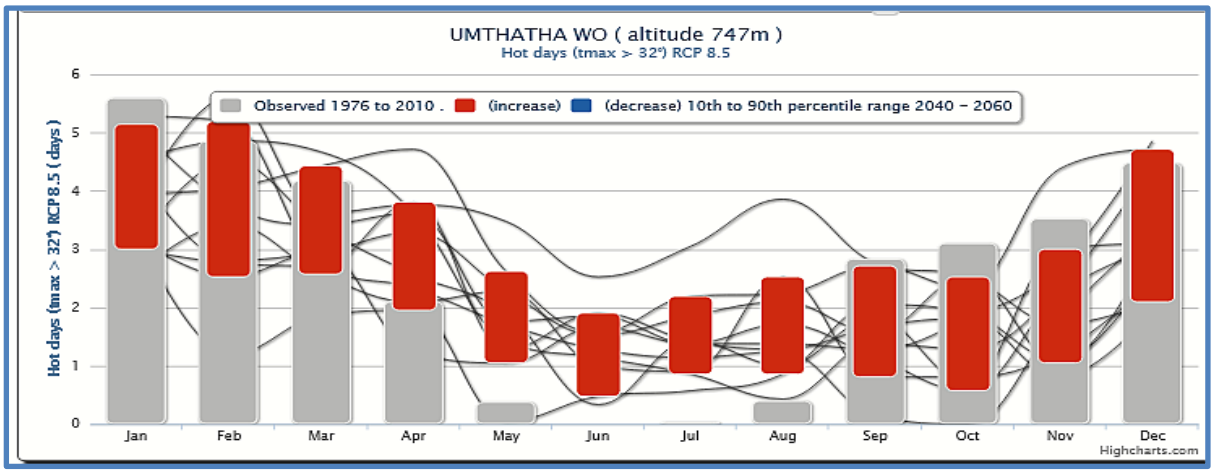
Rainfall: Projections show that rainfall change is **uncertain** for Mthatha, with only **a decrease (red bars) of approx. 2-15mm in May** projected with any certainty. Other months show degrees of uncertainty (blue **and** red bars). Where both red and blue bars are present, it indicates a likelihood of increase but also the likelihood of decrease rainfall projected. Different models predict varying projections as seen by the black lines. To adjust timeframe and regions, see the following link: https://tinyurl.com/57myv5rf.



Temperature: Projections show **increases** of temperature in all months of between 0.6-2.7 degrees by 2040-2060



Very hot days: Projections show that the number of very hot days (>32 degrees) will **increase** in all months, with between **3-5 more** days in January and February with smaller increases in March, April, and December, by 2040-2060. (Grey bars show the existing frequency)



Impacts and responses expected in the future

- Later rainfall onset means that sunflowers and sorghum are becoming a more common option in this region
- A shorter planting window means there is an urgency to plant quickly and efficiently
- Appropriate seed breeding and selection for warmer temperatures is required
- Pests and diseases are becoming resistant to existing treatments and warmer temperatures can lead to more frequent outbreaks
- Fires are becoming more likely in the dry season and during dry spells in late summer
- More appropriate climate information is becoming available
- Suitability for maize remains high for this region

Recommendations

- Conservation agriculture which focuses on soil health and soil water conservation is becoming more important to build resilience to climatic risk
- Farmers need to cooperate with each other and various input supplies, marketing agents, and keep up to date with the latest research
- Climate forecasts and information are available and should be accessed and compared to records kept.

Resources

Seasonal forecasts: University of Pretoria: https://www.up.ac.za/geography-geoinformatics-and-meteorology/article/2872667/seasonal-forecast-worx
International Research Institute: https://tinyurl.com/df3kr46k
SA Weather Service: https://www.weathersa.co.za/home/seasonalclimate

Climate change projections and impacts: Graphs above: https://tinyurl.com/57myv5rf

El Nino Southern Oscillation update: https://iri.columbia.edu/our-expertise/climate/forecasts/enso/current/