

## CLIMATE

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### Sources of information

- Rainfall data available: South Africa Weather Bureau (SAWB), Private observatories rainfall data (i.e., Commercial farmers, experimental stations, schools etc.), Department of Agriculture and Water Affairs.
- Some station data is available at hourly, daily or monthly intervals.
- Some stations have more than 40 years on record.
- Large part of the Soutpansberg is covered

However, few stations report other meteorological parameters such as temperature, wind speed and direction, evaporation, sunshine/radiation etc.

### Summary statistics

The general climate of the Soutpansberg should be typed into two seasons only : Warm wet season and cool dry season instead of spring, autumn, winter and summer.

#### Temperature

- In the Soutpansberg temperature is strongly associated with seasonal conditions and topography.
- Warm Wet Season (WWS) — Dec–Feb. Temperatures are relatively warm, ranging from 16 degrees Centigrade to 40 °C.
- Cool Dry Season (CDS) — May–Aug. Temperatures range from 12–22 °C. Cool and sometimes chilly cold.

#### Rainfall

The area receives one cycle of rainfall that extends from October of the previous year and ends in March of the following year (approximately 182 days). The dry season runs from April to October.

Rainfall distribution is greatly influenced by the Soutpansberg. In the middle of the Soutpansberg's annual rainfall can reach 2 000 mm (Entabeni) and in the western part of the Soutpansberg rainfall can be as low as 340 mm.

Rainfall peaks during January and February.

#### Wind

Wind affects large areas of croplands in semi-arid areas of the Soutpansberg. The prime example is Muswodi area where climatic factors such as rainfall, ambient humidity and drought are associated with it. The area experiences wind erosion during dry months. The erosion is intense in August.

### Cloud Cover

The WWS is associated with convective clouds that occur due to both intense insolation because of the prevailing sun in the southern hemisphere, and also due to the orographic lifting of moist air over the Soutpansberg.

The CDS is mainly associated with clear skies except on top of the high ground where cloud, fog or mist are common, especially during the morning, before the sun is intense enough to dissolve the clouds.

### Influence of the Soutpansberg on Rainfall and Wind

- When moist air is forced to rise by a mountain barrier, it results in the dry adiabatic cooling of the ascending air. When saturated, it cools at the saturated adiabatic lapse rate until it crosses the mountain. This process can result in precipitation.
- The mountain configuration also creates funnelling, large-scale divergence and convergence of wind velocity.
- These effects in turn can create descending motion which will result in dissolving clouds or vertical motion creating deep cloud.

All these different forms of effects of orography on rainfall and wind create diverse micro-climates in the study area and result in diversity of fauna and flora.

### Major studies and publications

On Climate the area specifically hasn't received much attention, however, the few works that I have knowledge of include:

DZIVHANI, A. M. 1998: *Temperature and rainfall variability over the Northern Region of the Northern Province for the past 35 years*. BA. Hons. thesis submitted University of Venda.

FAIRHURST, U. J., MUSYOKI, A., SAIDI, T., & WILSON, G. D. H., (eds), 1999. *Environment and Society: The Thohoyandou Environs, Northern Province, South Africa*. Departments of Geography University of Pretoria and University of Venda. Kitskoié, Hatfield, Pretoria.

MAKUYA, P. 2003: *Investigation into the problem of alien plants in Malavuwe Village*. B.EnvSc (Hons). thesis submitted University of Venda.

NALEDZANI, M. T., 1999. *Orographic Influence on Temperature and Rainfall in the Northern Region of*

*Northern Province (NRNP)*. Unpublished honours thesis University of Venda, South Africa.

NETSHITUNGULU D. 1999: *Adaptation to wind erosion at Muswodi area, Ecology and Resource Management*. Third year research Project, University of Venda, South Africa.

NETSHITUNGULU D. 2001. *Drought and its impacts on the water resources in the Northern Region of Northern Province of South Africa*. BSc. Hons. thesis submitted University of Venda 51pp.

NTIKINCA N. C. 1999. *Seasonal rainfall variability in the northern region*. BA. Hons. thesis submitted University of Venda.

SINTHUMULE N. I. 2001. *A comparative analysis of the pattern and effects of wetlands utilisation in urban versus rural areas of Thohoyandou, Northern Province*. Unpublished Honours Dissertation University of Venda

### **Recommendations for priority studies required to fill any gaps identified**

Not noted.

### **“Hot spots” of particular importance**

Not noted.



Cloud cover above Funduzi — not the dips and eddies mirroring the topography below. Photo: N. Hahn