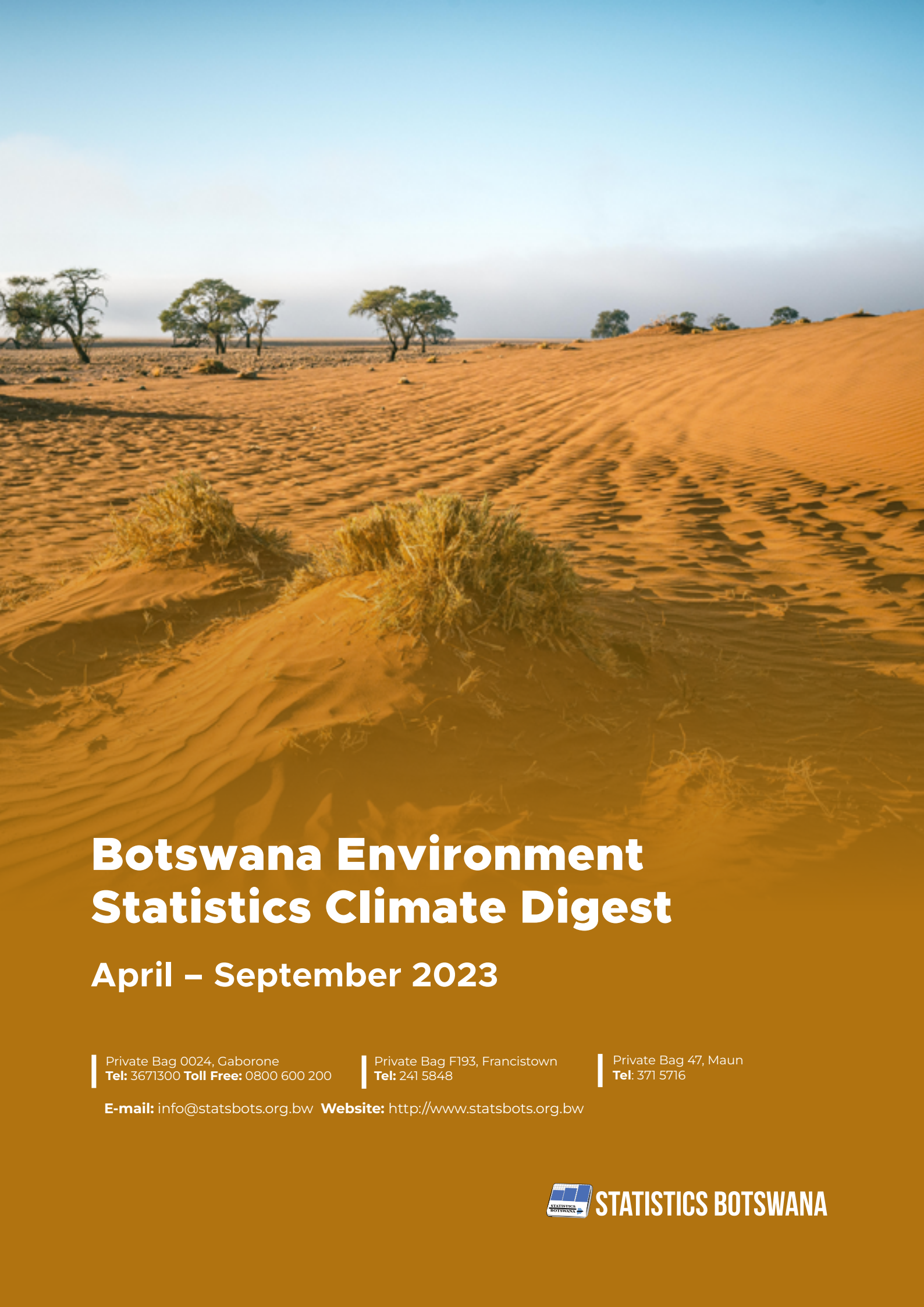




Botswana Environment Statistics Climate Digest

April – September 2023

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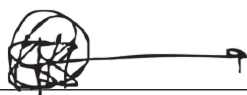
Preface

This report is the second edition of the biannual climate statistics digest for the period April - September 2023. The report represents Statistics Botswana's continued progress towards the focused monitoring of climate statistics, and the availing of data for climate trend analysis. The indicators covered in this report are guided in part by the United Nations Framework for the Development of Environment Statistics (UNFDES).

Climate statistics are useful for trends analysis and review of climate related performances in human livelihoods, health, social and economic activities. All aspects of life are affected directly by climate, which is the core determining factor of how people and other organisms live and interact on planet earth. Climate determines food availability and the habitability of regions and environments. Extreme climate events are recorded and monitored for better understanding and planning to ensure minimum casualties and disturbances to lives, as well as for adaptation strategies to climate change phenomena. Statistics Botswana strives to facilitate informed planning and decision making through trends analysis and climate statistics reporting in these submissions.

I would like to extend my gratitude and appreciation to stakeholders and data providers, particularly the Department of Meteorological Services and Southern African Science Service Centre for Climate Change and Adaptive Land Management (SASSCAL) whose contributions were invaluable in the production of this Digest.

For more information and further enquiries, contact the Directorate of Stakeholder Relations at **3671300**. All Statistics Botswana outputs/publications are available on the website at **www.statsbots.org.bw** and at the Statistics Botswana Resource Centre (Head-Office, Gaborone).



Dr. Khaufelo R. Lekobane
Statistician General
July 2026

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Executive Summary

The period under review is the dry and cold season of April to September 2023.

The highest total monthly rainfall was recorded at Werda in April 2023 at 48.0 mm, followed by Gantsi in April 2023 at 43.7 mm and Ncojane at 33.0 mm during the month of April 2023. Werda was the wettest area having received 53.2 mm of rainfall followed by Gantsi at 50.2 mm and Sir Seretse Khama International Airport (SSKA) at 48.2 mm of rainfall received during this six month period.

The lowest mean monthly temperature was 1.6 °C during the month of June 2023, followed by 3.3 °C in July 2023 both for Werda and 3.6 °C in June 2023 for Tsabong. The highest mean monthly maximum air temperature recorded was 39.2 °C at Tubu followed by 37.0 °C at Mababe in September 2023 and 36.3 °C at Mababe in May 2023. The highest temperature recorded was 42.8 °C followed by 42.4 °C and 41.8 °C all in September 2023 at the Tubu station.

The strongest winds were in Goodhope, with a mean monthly maximum wind speed of 6.8 m/s in September 2023 followed by Ghanzi and Goodhope at 6.3 m/s in August 2023. The lowest mean monthly wind speed was recorded in June, May and April 2023 at 0.8 m/s, 0.9 m/s and 1.2 m/s respectively, all at Baines Drift. The highest wind speed recorded was 11.8 m/s in September 2023 at Goodhope followed by 11.6 m/s in April 2023 at Goodhope and 11.6 m/s in July 2023 at Tsabong.

The highest predominance of wind direction was found in Lephephe where 42.6 percent of the days the wind was blowing from the south direction followed by Baines Drift where 37.7 percent of the days where the wind was blowing from the east north east and Pandamatenga where 31.1 percent of the days the wind was predominantly blowing from the north east direction. Nationally winds were predominantly from north east 18.9 percent of the days in May 2023, followed by predominance of 18.5 percent from the north east in August 2023 and 15.6 percent from the north east in September 2023.

The highest predominance by maximum wind speed is that for Lephephe with 42.6 percent of the days recording strongest winds blowing from the South, followed by Baines Drift with 37.7 percent of the days recording strongest winds blowing from east north east and Pandamatenga where 31.1 percent of the winds blew from the north east. The strongest winds for each of the months for the country blew mainly from the north east 19.6 percent of the days in August 2023, followed by north east at 18.1 percent of the days in May 2023 and the east north east at 16.1 percent of the days in August 2023. Overall, the strongest winds blew from north east at 15.2 percent of the days followed by east north east at 13.5 percent and north north east at 10.3 percent of the days.

The highest mean monthly relative humidity was recorded in May 2023 at Goodhope at 64.8 percent followed by 61.5 percent at Goodhope in April 2023 and Baines Drift at 60.9 percent in May 2023. The lowest mean monthly relative humidity was recorded at Ghanzi at 22.1 percent followed by 24.1 percent at Tshane and 24.6 percent at Tubu all in September 2023.

May 2023 had the highest relative humidity average for all stations during the 6 month period. Highest relative humidity extremes were reached in the months of April and May 2023. The lowest humidity extremes were recorded during September 2023. September recorded the lowest monthly average relative humidity extremes for the period.

1. Introduction

Over long periods of time conditions of the atmosphere change, and this affects human livelihoods in different ways, directly through health and indirectly through human activities such as economic or agricultural practices.

Climate monitoring is very important as climate affects almost every aspect of our lives. With a better understanding of the long term patterns of weather conditions and its impacts, governments and decision makers are able to define and implement appropriate mitigation and adaptation policies.

Botswana is climatically classified as arid to semi-arid and is drought prone, with highly erratic rainfall that ranges from 250mm in the South East to around 650mm in the north.

2. RAINFALL

The period under study is the dry season and is characterised by cold temperatures.

2.1 Monthly Rainfall

Table 1 shows the total monthly rainfall in millimetres (mm) for the stations that have data.

Table 1: Total monthly Rainfall April to September 2023

Station	April	May	June	July	August	September
Werda	48.0	5.2	0.0	0.0	0.0	0.0
Gantsi	43.7	6.5	0.0	0.0	0.0	0.0
SSKA	15.8	24.0	0.0	0.0	0.0	8.4
Goodhope	25.1	22.1	0.0	0.0	0.0	0.0
Ncojane	33.0	0.0	0.0	0.0	0.0	0.4
Tshane	19.3	4.2	0.0	0.0	0.0	0.0
Jwaneng	15.4	2.7	0.0	0.0	0.0	2.0
Mahalapye	4.9	12.6	0.0	0.0	0.0	0.0
Sowa Town	4.8	4.8	0.0	0.0	0.0	0.0
Tsabong	9.0	0.0	0.0	0.0	0.0	0.0
Maun	0.0	8.9	0.0	0.0	0.0	0.0
Letlhakane	0.1	0.0	0.0	0.0	0.0	0.0
Shakawe	0.0	0.0	0.0	0.0	0.0	0.0
Pandamatenga	0.0	0.0	0.0	0.0	0.0	0.0
Lephephe	0.0	0.0	0.0	0.0	0.0	0.0
Kasane	0.0	0.0	0.0	0.0	0.0	0.0
Selibe Phikwe	0.0	5.2	0.0	0.0	0.0	0.0
Francistown	0.0	0.0	0.0	0.0	0.0	0.0
Total	219.1	96.2	0	0	0	10.8

Source: Department of Meteorological Services

The highest total monthly rainfall was recorded at Werda in April 2023 at 48.0 mm, followed by Gantsi in April 2023 at 43.7 mm and Ncojane at 33.0 mm during the month of April 2023.

2.2 Total Rainfall

Table 2 shows the total rainfall received by the stations from April to September 2023 (Dry Season). Werda was the wettest area having received 53.2 mm of rainfall followed by Gantsi at 50.2 mm and Sir Seretse Khama International Airport (SSKA) at 48.2 mm of rainfall received during this six month period.

Table 2: Total rainfall (mm) by station April to September 2023

Station	Total Rainfall (mm)
Werda	53.2
Gantsi	50.2
SSKA	48.2
Goodhope	47.2
Ncojane	33.4
Tshane	23.5
Jwaneng	20.1
Mahalapye	17.5
Sowa Town	9.6
Tsabong	9.0
Maun	8.9
Selibe Phikwe	5.2
Letlhakane	0.1
Lephephe	0.0
Pandamatenga	0.0
Shakawe	0.0
Kasane	0.0
Francistown	0.0

Source: Department of Meteorological Services

3. TEMPERATURES

Botswana's diurnal temperature is high, and this is normal for semi-arid and arid climates. The temperatures also vary spatially, with extremes common in the north-eastern and the south-western regions of the country

3.1 Minimum Air Temperatures

Table 3 shows the mean monthly minimum air temperatures in degrees Celsius (°C). In Botswana the period from April to September is characterised by winter and cold temperatures.

Table 3: Mean monthly minimum air temperatures (degrees Celsius) April to September 2023

Station	April	May	June	July	August	September
Shakawe	15.7	12.0	7.1	5.8	9.0	13.4
Pandamatenga	15.5	13.0	10.9	9.2	12.4	16.4
Mababe	16.4	12.6	9.4	8.0	11.3	16.1
Tubu	-	18.4	14.1	12.8	16.9	20.6
Sowa	16.0	13.8	10.4	9.1	12.2	16.5
Ghanzi	15.1	11.9	6.7	5.4	9.1	12.7
Baines Drift	15.3	14.5	10.2	8.7	11.1	16.4
Mahalapye	14.6	13.0	8.8	6.9	10.1	15.1
Lephephe	13.0	10.6	5.1	4.0	7.2	11.8
Tshane	14.2	10.2	4.7	5.2	8.3	10.8
Werda	11.3	7.8	1.6	3.3	5.4	8.7
Goodhope	21.0	9.6	5.1	5.0	7.1	11.7
Tsabong	11.4	7.4	3.6	-	-	-

Source: Department of Meteorological Services and SASSCAL

Dash (-) Indicates no data

The lowest mean monthly temperature was 1.6 °C during the month of June 2023, followed by 3.3 °C in July 2023 both for Werda and 3.6 °C in June 2023 for Tsabong.

3.2. Maximum air temperatures

Table 4 shows the mean monthly maximum air temperatures for the period April to September 2023. The maximum air temperatures show the hottest parts of Botswana during the winter season.

Table 4: Mean monthly maximum air temperatures (degrees Celsius) April to September 2023

Station	April	May	June	July	August	September
Shakawe	34.0	32.2	29.7	26.6	30.6	35.6
Pandamatenga	31.8	30.9	28.9	24.8	28.6	34.2
Mababe	35.1	34.2	31.8	28.1	32.2	37.0
Tubu	-	36.3	33.7	30.2	34.1	39.2
Sowa	32.8	31.3	29.2	25.6	29.2	34.9
Ghanzi	31.4	29.7	27.1	24.1	28.3	32.7
Baines Drift	31.4	28.0	27.9	23.9	26.6	31.4
Mahalapye	30.8	27.8	26.6	22.8	26.3	32.2
Lephephe	30.9	29.0	27.3	23.8	27.4	33.2
Tshane	30.8	27.9	25.4	23.2	27.1	30.6
Werda	30.5	27.3	25.4	23.6	27.7	30.8
Goodhope	27.4	24.3	22.9	20.7	24.9	29.6
Tsabong	31.0	26.9	22.7	-	-	-

Source: Department of Meteorological Services and SASSCAL
Dash (-) Indicates no data

During the period of April to September 2023 the highest mean monthly maximum air temperature recorded was 39.2 °C at Tubu followed by 37.0 °C at Mababe in September 2023 and 36.3 °C at Mababe in May 2023.

3.3 Maximum temperature extremes

Table 5 shows the highest maximum air temperatures recorded for the stations, during the period April to September 2023. The highest temperature recorded was 42.8 °C followed by 42.4 °C and 41.8 °C all in September 2023 by Tubu station.

Table 5: Highest maximum temperatures recorded (degrees Celsius) April to September 2023

Temperature (°C)	Month	Station
42.8	September	Tubu
42.4	September	Tubu
41.8	September	Tubu

Source: Department of Meteorological Services and SASSCAL

4. WIND SPEED AND DIRECTION

Wind is a physical quantity that represents the movement of air currents. It has a direction (wind direction) and a numerical magnitude (wind speed). Wind direction is expressed in degrees while wind speed is measured in metres per second (m/s).

4.1. Mean Monthly Maximum Wind Speed

Table 6 shows the mean monthly maximum wind speed for the period April to September 2023.

Table 6: Mean monthly maximum wind speed (m/s) April to September 2023

Station	Apr	May	Jun	Jul	Aug	Sep
Shakawe	3.9	3.7	3.5	4.5	4.6	4.7
Pandamatenga	4.6	4.3	4.3	5.5	5.3	5.5
Mababe	4.7	4.7	4.5	5.9	6.0	6.1
Tubu	-	4.3	4.1	5.3	5.6	5.8
Sowa	4.5	4.5	4.2	5.1	5.3	5.6
Ghanzi	5.3	5.5	5.0	6.1	6.3	6.0
Baines Drift	1.2	0.9	0.8	1.6	1.4	1.6
Mahalapye	4.7	5.0	4.8	5.7	5.5	5.8
Lephephe	4.7	5.4	5.0	5.7	6.0	5.9
Tshane	5.1	5.1	4.7	5.2	5.6	5.5
Werda	4.7	4.5	4.4	4.8	5.6	5.3
Goodhope	5.4	6.1	5.4	6.0	6.3	6.8
Tsabong	5.4	4.8	3.7	-	-	-

Source: Department of Meteorological Services and SASSCAL

Dash (-) Indicates no data

The strongest winds were in Goodhope, with a mean monthly maximum wind speed of 6.8 m/s in September 2023 followed by Ghanzi and Goodhope both at 6.3 m/s in August 2023. The lowest mean monthly wind speed was recorded in June, May and April 2023 at 0.8 m/s, 0.9 m/s and 1.2 m/s respectively, all at Baines Drift.

4.2 Highest wind speed recorded

Table 7 shows the highest wind speed recorded during the period of April to September 2023. The wind speed recordings are the highest recorded in a 24 hour period.

The highest wind speed recorded was 11.8 m/s in September 2023 at Goodhope followed by 11.6 m/s in April 2023 at Goodhope and 11.6 m/s in July 2023 at Tsabong. These wind speed recordings fall in the category of strong breeze on the Beaufort scale. (See Table 15 in Appendix).

Table 7: Maximum wind speed (m/s) April to September 2023

Speed (m/s)	Beaufort Classification	Month	Station
11.8	Strong Breeze	September	Goodhope
11.6	Strong Breeze	April	Goodhope
11.6	Strong Breeze	July	Tsabong

***See table 15 in appendix**

Source: Department of Meteorological Services and SASSCAL

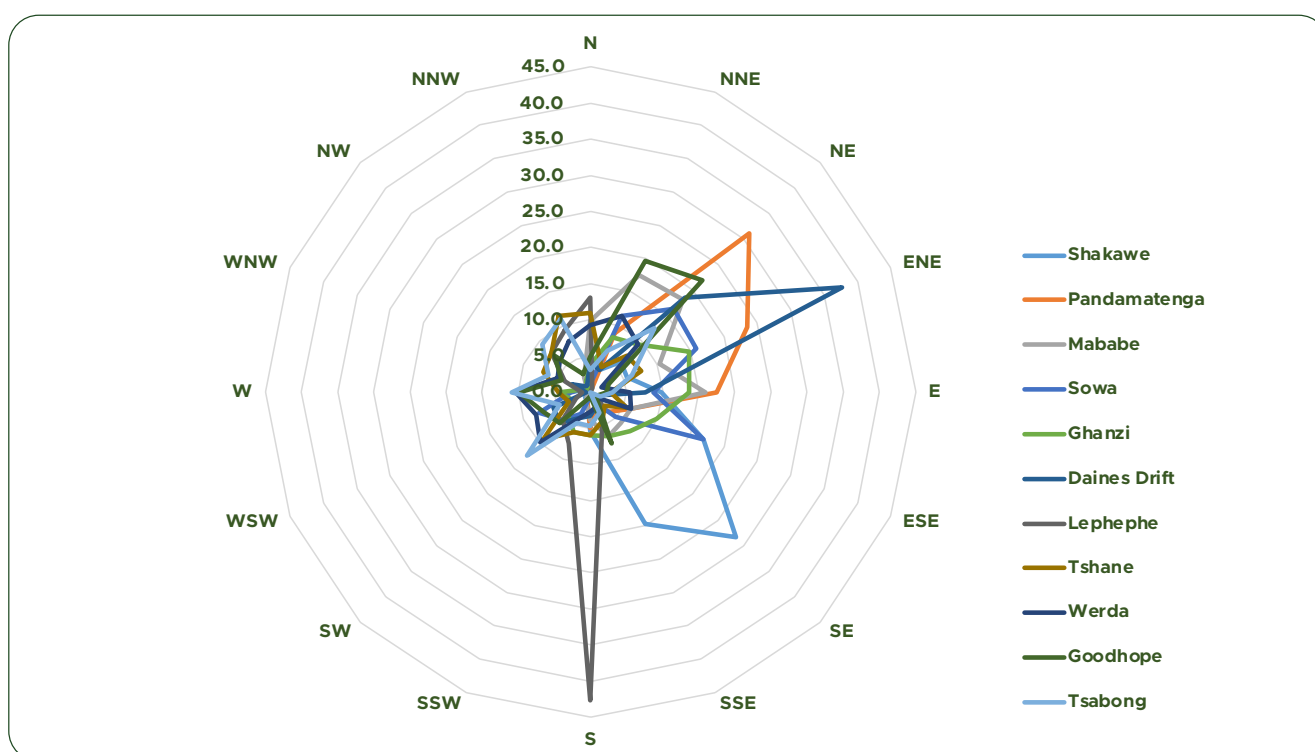
4.3 Wind direction

Table 8 shows the stations predominant wind direction as a percentage of the days recorded between the months of April and September 2023. The highest predominance was found in Lephephe where 42.6 percent of the days the wind was blowing from the south direction followed by Baines Drift where 37.7 percent of the days where the wind was blowing from the east north east and Pandamatenga where 31.1 percent of the days the wind was predominantly blowing from the north east direction. Figure 1 shows this graphically.

Table 8: Percentage predominant winds by station April to September 2023

Station	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
Shakawe	1.6	3.3	6.0	5.5	9.8	16.9	28.4	19.7	5.5	1.1	1.1	0.5	0.0	0.0	0.5	0.0
Pandamatenga	0.0	8.7	31.1	23.5	17.5	6.0	3.8	2.2	4.9	1.1	0.5	0.0	0.0	0.0	0.0	0.5
Mababe	9.8	17.5	18.0	10.4	15.8	6.0	6.0	6.6	3.8	1.6	0.5	0.5	0.5	0.0	0.5	2.2
Tubu	8.5	11.8	20.3	21.6	13.1	2.6	9.2	7.8	3.3	0.7	0.0	0.7	0.0	0.0	0.0	0.7
Sowa	1.1	11.5	16.4	15.8	8.7	16.9	4.9	1.6	0.5	3.3	5.5	7.7	2.7	1.1	1.1	1.1
Ghanzi	3.8	8.2	9.3	14.8	13.7	9.8	7.7	6.6	6.0	6.0	4.4	2.7	4.4	1.1	0.0	1.6
Daines Drift	4.4	3.3	18.6	37.7	7.7	1.1	1.1	2.2	3.3	3.8	6.0	5.5	0.5	2.7	1.1	1.1
Mahalapye	6.0	24.0	22.4	10.9	3.3	2.7	1.6	2.7	5.5	2.2	4.9	4.9	1.6	0.0	5.5	1.6
Lephephe	13.1	0.5	0.0	0.0	0.0	0.0	2.2	4.4	42.6	7.7	5.5	2.2	1.1	3.8	7.7	9.3
Tshane	10.9	3.8	7.1	7.7	2.7	5.5	2.7	4.4	6.0	6.0	9.3	3.3	4.4	7.1	7.7	11.5
Werda	9.3	11.5	9.3	1.6	5.5	6.0	1.1	2.2	2.7	3.8	9.8	8.2	10.4	4.9	6.0	7.7
Goodhope	4.9	19.7	21.9	2.7	2.2	1.1	1.1	7.7	0.5	1.1	6.0	7.1	9.8	4.4	7.1	2.7
Tsabong	3.1	6.3	12.5	6.3	3.1	1.6	0.0	3.1	4.7	4.7	12.5	4.7	10.9	6.3	9.4	10.9

Source: Department of Meteorological Services and SASSCAL

Figure 1: Percentage predominant winds by station April to September 2023

4.4 National wind direction

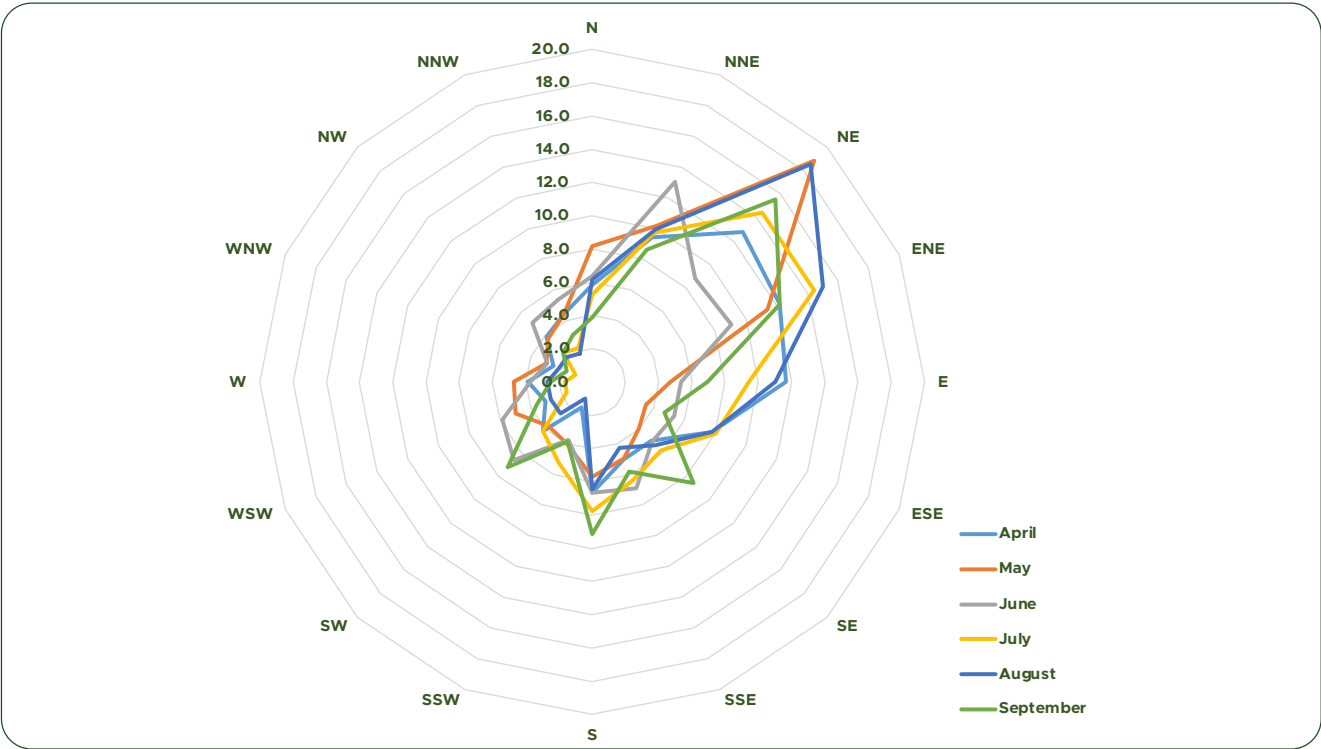
Table 9 shows the country's wind direction for the period of April to September 2023 as a percentage of the total number of days for that period. Nationally winds were predominantly from north east 18.9 percent of the days in May 2023, followed by predominance of 18.5 percent from the north east in August 2023 and 15.6 percent from the north east in September 2023. Figure 2 shows the country's predominant winds graphically.

Table 9: National wind direction by percentage of days April to September 2023

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NN	NNN	Total
April	5.8	9.4	12.8	12.2	11.7	7.8	5.0	5.0	6.7	1.7	4.2	3.1	3.9	2.5	3.9	4.4	100.0
May	8.2	10.2	18.9	11.4	4.7	3.5	4.0	5.0	5.7	4.0	3.7	5.0	4.7	3.0	3.7	4.5	100.0
June	6.4	13.1	8.8	9.1	5.3	5.3	5.1	6.9	6.7	3.7	6.7	5.9	3.7	2.9	5.1	5.3	100.0
July	5.3	9.7	14.4	14.4	9.4	8.1	5.8	6.4	7.8	5.3	4.2	1.7	1.7	1.1	2.5	2.2	100.0
August	6.2	9.9	18.5	15.1	11.0	7.8	5.4	4.3	6.5	1.1	2.7	2.7	2.7	2.2	2.2	1.9	100.0
September	3.9	8.6	15.6	12.2	6.9	4.7	8.6	5.8	9.2	3.9	7.2	3.6	2.5	1.7	2.5	3.1	100.0
Overall	6.0	10.2	14.9	12.4	8.1	6.1	5.6	5.6	7.0	3.3	4.8	3.7	3.2	2.2	3.3	3.6	100.0

Source: Department of Meteorological Services and SASSCAL

Figure 2: National wind direction by percentage of days April to September 2023



4.5 Maximum wind speed by direction

Maximum wind speed by direction is the direction in which the maximum wind speed was moving. It indicates the direction of the strongest winds for the stations and the country.

Table 10 and figure 3 show the percentage maximum wind speed directions for the stations, which is, a percentage of the number of days the recordings were taken during the period April to September 2023.

Table 10: Percentage maximum wind speed directions by station April to September 2023

Station	Z	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
Shakawe	1.1	4.9	9.3	19.1	18.0	11.5	16.4	9.8	3.8	3.8	1.6	0.5	0.0	0.0	0.0	0.0	100.0
Pandamatenga	0.0	8.7	31.1	23.5	17.5	6.0	3.8	2.2	4.9	1.1	0.5	0.0	0.0	0.0	0.0	0.5	100.0
Mababe	9.8	17.5	18.0	10.4	15.8	6.0	6.0	6.6	3.8	1.6	0.5	0.5	0.5	0.0	0.5	2.2	100.0
Tubu	8.5	11.8	20.3	21.6	13.1	2.6	9.2	7.8	3.3	0.7	0.0	0.7	0.0	0.0	0.0	0.7	100.0
Sowa	1.1	11.5	16.4	15.8	8.7	16.9	4.9	1.6	0.5	3.3	5.5	7.7	2.7	1.1	1.1	1.1	100.0
Ghanzi	3.8	8.2	9.3	14.8	13.7	9.8	7.7	6.6	6.0	6.0	4.4	2.7	4.4	1.1	0.0	1.6	100.0
Daines Drift	4.4	3.3	18.6	37.7	7.7	1.1	1.1	2.2	3.3	3.8	6.0	5.5	0.5	2.7	1.1	1.1	100.0
Mahalapye	6.0	24.0	22.4	10.9	3.3	2.7	1.6	2.7	5.5	2.2	4.9	4.9	1.6	0.0	5.5	1.6	100.0
Lephephe	13.1	0.5	0.0	0.0	0.0	0.0	2.2	4.4	42.6	7.7	5.5	2.2	1.1	3.8	7.7	9.3	100.0
Tshane	10.9	3.8	7.1	7.7	2.7	5.5	2.7	4.4	6.0	6.0	9.3	3.3	4.4	7.1	7.7	11.5	100.0
Werda	9.3	11.5	9.3	1.6	5.5	6.0	1.1	2.2	2.7	3.8	9.8	8.2	10.4	4.9	6.0	7.7	100.0
Goodhope	4.9	19.7	21.9	2.7	2.2	1.1	1.1	7.7	0.5	1.1	6.0	7.1	9.8	4.4	7.1	2.7	100.0
Tsabong	3.1	6.3	12.5	6.3	3.1	1.6	0.0	3.1	4.7	4.7	12.5	4.7	10.9	6.3	9.4	10.9	100.0

Source: Department of Meteorological Services and SASSCAL

The highest predominance by maximum wind speed is that for Lephephe with 42.6 percent of the days recording strongest winds blowing from the South, followed by Baines Drift with 37.7 percent of the days recording strongest winds blowing from east north east and Pandamatenga where 31.1 percent of the winds blew from north east.

Figure 3: Percentage maximum wind speed directions by station April to September 2023

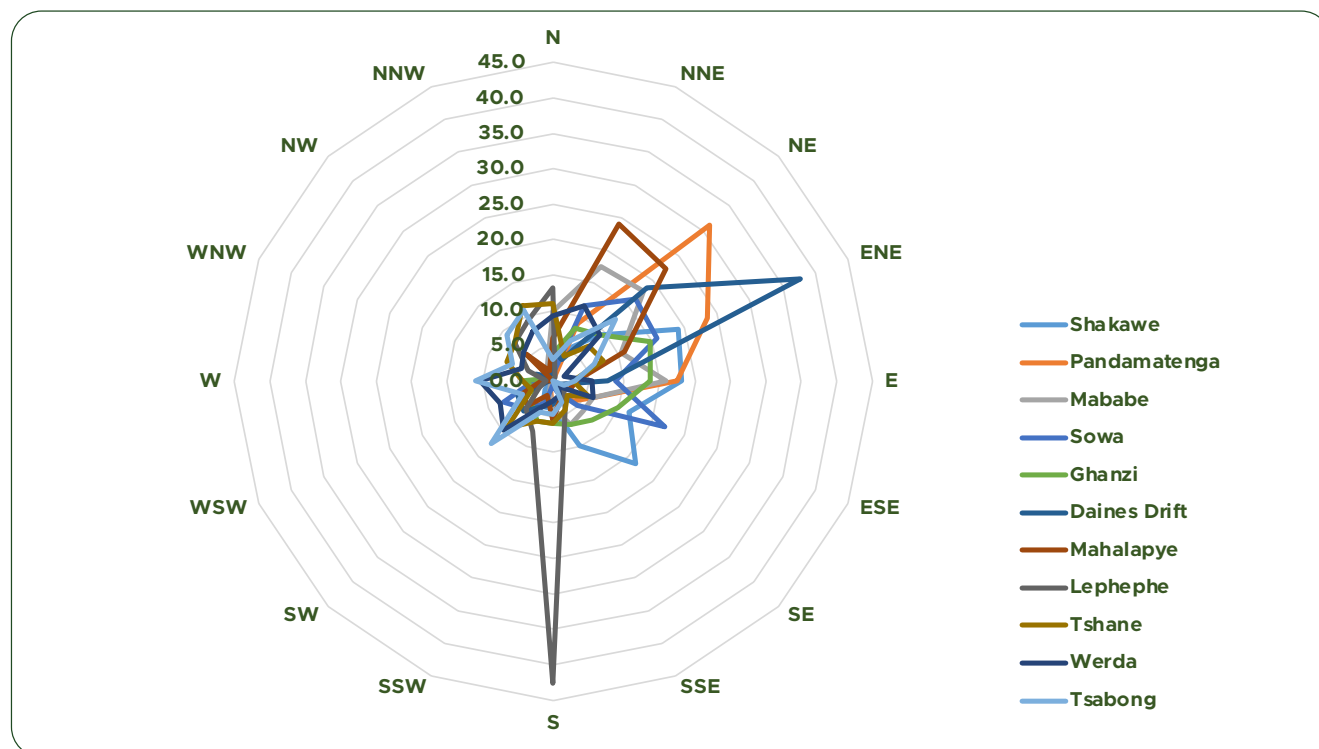


Table 11 and **figure 4** show the maximum wind speed directions for the country as a percentage of the days' recordings were taken by month, for the period April to September 2023.

Table 11: National percentage maximum wind speed directions April to September 2023

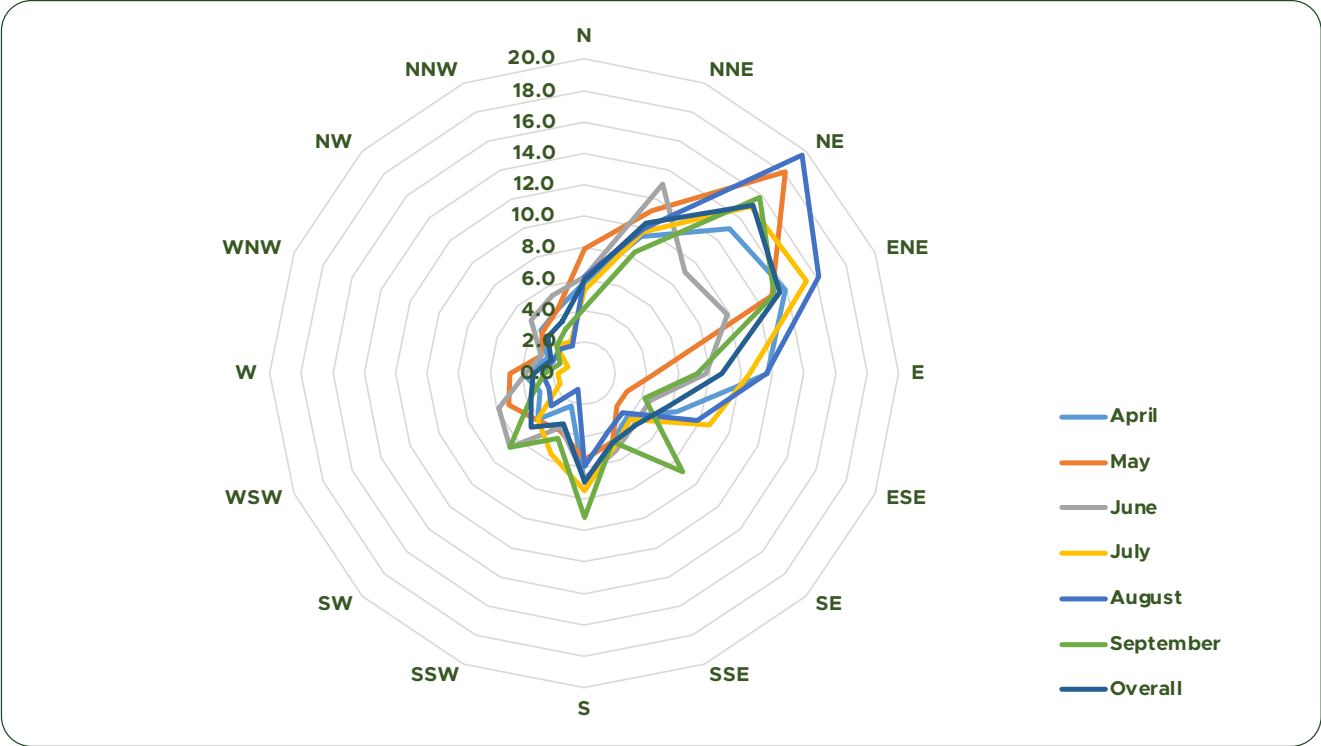
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
April	5.8	9.4	13.1	13.9	11.7	6.4	3.9	4.7	6.9	2.2	4.2	3.1	3.9	2.5	3.9	4.4	100.0
May	7.9	11.2	18.1	12.9	4.5	3.0	3.0	4.7	5.5	4.0	4.2	5.2	4.7	3.0	3.7	4.5	100.0
June	6.1	13.1	9.1	9.9	7.7	4.5	4.5	5.3	6.7	3.7	6.7	5.9	3.7	2.9	4.8	5.3	100.0
July	5.3	9.7	15.0	15.3	10.6	8.6	4.2	5.0	7.5	5.6	4.2	1.7	1.7	1.1	2.5	2.2	100.0
August	6.2	9.9	19.6	16.1	11.6	7.8	3.5	4.0	5.9	1.1	3.0	2.4	2.7	2.2	2.2	1.9	100.0
September	4.2	8.3	15.8	13.1	7.2	4.2	8.9	4.7	9.2	4.4	6.7	3.6	2.5	1.7	2.5	3.1	100.0
Overall	6.0	10.3	15.2	13.5	8.8	5.7	4.6	4.8	6.9	3.5	4.8	3.7	3.2	2.2	3.3	3.6	100.0

Source: Department of Meteorological Services and SASSCAL

The strongest winds for each of the months for the country blew mainly from the north east 19.6 percent of the days in August 2023, followed by north east at 18.1 percent of the days in May 2023 and the east north east at 16.1 percent of the days in August 2023.

Overall, the strongest winds blew from north east at 15.2 percent of the days followed by east north east at 13.5 percent and north north east at 10.3 percent of the days.

Figure 4: National percentage maximum wind speed directions by month April to September 2023



5. RELATIVE HUMIDITY

Humidity is atmospheric moisture. It is a quantity representing the amount of water vapour in the atmosphere or in a gas. Humidity has an effect on human wellbeing through the prevalence of microorganisms that need moisture in the air, such as dust mites, which in turn can lead to allergies and disease such as asthma. Extremely low humidity can cause dryness of the eyes and the skin, exacerbating conditions such as eczema. Humidity also determines how comfortable or uncomfortable the weather feels.

5.1 Mean monthly relative humidity

Table 12: Mean Monthly relative humidity (Percent) April to September 2023

Station	April	May	June	July	August	September	Station average
Shakawe	54.1	50.1	43.1	45.7	38.1	28.2	43.2
Pandamatenga	54.4	42.7	33.7	39.9	34.0	24.8	38.2
Mababe	55.6	46.4	35.9	40.4	33.1	24.7	39.3
Tubu	-	44.1	35.8	40.5	33.6	24.6	35.7
Sowa	44.9	42.1	33.5	39.5	34.7	28.0	37.1
Ghanzi	51.8	42.8	30.2	38.0	29.2	22.1	35.7
Baines Drift	51.7	60.9	45.6	50.5	47.7	41.2	49.6
Mahalapye	46.6	57.6	39.4	47.9	41.6	36.1	44.9
Lephephe	54.6	52.5	35.8	44.4	36.4	30.3	42.4
Tshane	48.5	43.3	34.2	38.0	28.6	24.1	36.1
Werda	58.5	54.5	43.0	43.3	31.0	26.2	42.8
Goodhope	61.5	64.8	45.0	50.4	36.8	31.0	48.2
Monthly Average	52.9	50.2	37.9	43.2	35.4	28.4	41.1

Source: Department of Meteorological Services and SASSCAL

Dash (-) indicates no data

The highest mean monthly relative humidity was recorded in May 2023 at Goodhope at 64.8 percent followed by 61.5 percent at Goodhope in April 2023 and Baines Drift at 60.9 percent in May 2023. The lowest mean monthly relative humidity was recorded at Ghanzi at 22.1 percent followed by 24.1 percent at Tshane and 24.6 percent at Tubu all in September 2023.

5.2 Highest relative humidity

Table 13 shows the highest relative humidity recorded for each station by month, during the period April to September 2023.

Table 13: Highest relative humidity (Percent) of month by station April to September 2022

Station	April	May	June	July	August	September	Station average
Shakawe	65.8	70.3	52.3	45.7	38.2	28.2	50.1
Pandamatenga	78.9	54.1	48.0	39.9	34.0	24.8	46.6
Mababe	78.9	76.7	47.1	40.4	33.1	24.7	50.2
Tubu	0.0	76.2	48.1	40.5	33.6	24.6	37.2
Sowa	70.2	71.6	54.9	39.5	34.9	28.0	49.9
Ghanzi	82.2	77.6	47.2	38.0	29.2	22.1	49.4
Baines Drift	66.5	77.7	74.5	50.5	47.7	41.2	59.7
Mahalapye	80.9	90.8	68.4	47.9	41.7	36.1	61.0
Lephephe	83.4	90.6	58.2	44.4	36.5	30.3	57.2
Tshane	83.4	63.8	56.1	38.0	28.6	24.1	49.0
Werda	83.0	80.1	66.5	43.3	31.1	26.2	55.0
Goodhope	86.7	86.7	75.9	50.4	36.9	31.0	61.3
Monthly average	71.7	76.4	58.1	43.2	35.5	28.4	52.2

Source: Department of Meteorological Services and SASSCAL

May 2023 had the highest relative humidity average for all stations during the 6 month period. Highest relative humidity extremes were reached in the months of April and May 2023.

5.3 Lowest relative humidity

Table 14 shows the lowest relative humidity recordings for the stations, during the period April to September 2023. September recorded the lowest monthly average relative humidity extremes for the period.

Table 14: Lowest relative humidity (Percentage) of month by station April to September 2023

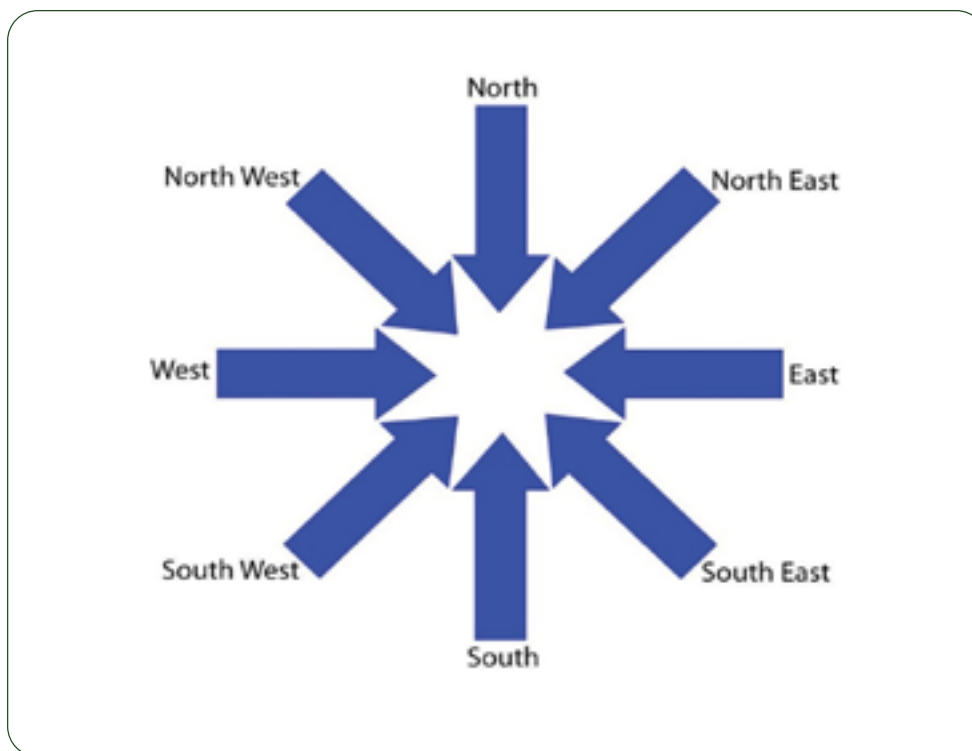
Station	April	May	June	July	August	September	Station average
Shakawe	44.3	42.4	31.2	33	18.1	17.4	31.1
Pandamatenga	40.8	26.3	15.9	20.6	21.7	13.9	23.2
Mababe	43	37.1	22.8	25.6	20.9	15.9	27.6
Tubu	-	30.7	25.5	26.3	18.5	15.6	19.4
Sowa	30.8	28.1	18.1	21.8	22.9	9.9	21.9
Ghanzi	36.6	27.3	18.1	26.1	12.4	13.4	22.3
Baines Drift	35.4	42.6	21.2	22.8	20.6	16.3	26.5
Mahalapye	25.8	34	20.2	27	13.3	13.6	22.3
Lephephe	36.9	27.1	21	27.5	12.5	9.4	22.4
Tshane	24.1	24.4	15.8	23.3	12	10.4	18.3
Werda	36.5	35.3	26.2	25.3	13.3	10.9	24.6
Goodhope	33	32.2	26.9	31.8	15.2	13.4	25.4
Monthly average	32.3	32.3	21.9	25.9	16.8	13.3	23.9

Source: Department of Meteorological Services and SASSCAL
Dash (-) indicates no data

APPENDIX

Table 15: Wind Scale

m/s	Km/h	Beaufort scale	Label	Effects
0 - 0.2	1	0	Calm	Calm. Smoke rises vertically.
0.3-1.5	1-5	1	Light Air	Wind motion visible in smoke.
1.6-3.3	6-11	2	Light Breeze	Wind felt on exposed skin. Leaves rustle.
3.4-5.4	12-19	3	Gentle Breeze	Leaves and smaller twigs in constant motion.
5.5-7.9	20-28	4	Moderate Breeze	Dust and loose paper raised. Small branches begin to move.
8.0-10.7	29-38	5	Fresh Breeze	Branches of a moderate size move. Small Trees begin to sway.
10.8-13.8	39-49	6	strong Breeze	Large branches in motion. Whistling heard in overhead wires. Umbrella use becomes difficult. Empty plastic garbage cans tip over.
13.9-17.1	50-61	7	Near Gale	Whole trees in motion. Effort needed to walk against the wind. Swaying of skyscrapers may be felt, especially by people on upper floors.
17.2-20.7	62-74	8	Gale	Twigs broken from trees. Cars veer on road.
20.8-24.4	75-88	9	Severe Gale	Larger branches break off trees, and some small trees blow over. Construction/ temporary signs and barricades blow over. Damage to circus tents and canopies.
24.5-28.4	89-102	10	Storm	Trees are broken off or uprooted, saplings bent and deformed, poorly attached asphalt shingles and shingles in poor condition peel off roofs.
28.5-32.6	103-117	11	Violent Storm	Widespread vegetation damage. More damage to most roofing surfaces, asphalt tiles that have curled up and/or fractured due to age may break away completely.
>32.7	>118	12	Hurricane	Considerable and widespread damage to vegetation, a few windows broken, structural damage to mobile homes and poorly constructed sheds and barns. Debris may be hurled about.

Figure 5: Wind Direction Illustration

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