



Botswana Selected Environmental Indicators 2024

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PREFACE

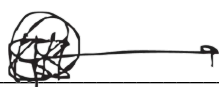
This Report is the fourth edition in a series of five yearly Environmental Statistics Reports of Botswana. It presents latest available statistics and trends on environmental resource availability; resource use; emissions that take place as a result of the resource use; as well as the disasters that may happen as a result of the use or take place naturally. The United Nations Framework for Development of Environment Statistics guided the production of this Report.

The Report covers Climate; Water; Natural Disasters; and Wildlife. Information presented in this Report is vital for evidence-based environmental planning and management. It also provides a basis for monitoring progress towards the attainment of Vision 2036 and the Sustainable Development Goals.

Secondary data was used in the production of the Report, most notably from the Department of Meteorological Services; the Southern African Science Service Centre for Climate Change and Adaptive Land Management (SASSCAL); Department of Water and Sanitation; Water Utilities Corporation; National Disaster Management Office; and Department of Wildlife and National Parks. I wish to recognise these stakeholders for the collaboration and the immense input they made.

I remain grateful for the invaluable contributions towards the preparation of this Report.

For more information and further enquiries, contact the Directorate of Stakeholder Relations at 367 1300. All Statistics Botswana outputs are available on the website at www.statsbots.org.bw, and at Statistics Botswana Information Resource Centre (Head Office, Gaborone).



Dr Khaufelo R. Lekobane
Statistician General
August 2026

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LIST OF ACRONYMS

DMS	Department of Meteorological Services
BDF	Botswana Defence Force
CBNRM	Community Based Natural Resource Management
CTO	Central Transport Organisation
DRR	Disaster Risk Reduction
DWNP	Department of Wildlife and National Parks
NDMO	National Disaster Management Office
PAC	Problem Animal Control
SDGs	Sustainable Development Goals
UNDRR	United Nations Office for Disaster Risk Reduction
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNODC	United Nations Office on Drugs and Crime
WHO	World Health Organization

EXECUTIVE SUMMARY

The main purpose of the Report is to present and discuss current status and trends in the following environmental issues: Climate; Water; Natural Disasters; and Wildlife.

Climate

Monthly average maximum temperature trends show increasing temperatures for nine (9) of the months, with only November, December and January showing a decrease in their monthly average maximum temperatures. Seven (7) of the months show an increasing trend in their monthly average minimum temperatures while five of the months show a decreasing average monthly minimum temperature trend. Between 2015 and 2025, rainfall trends were predominantly on an increasing or stable trend, largely due to recovery from dry spells.

Humidity recordings for Mahalapye, Goodhope and Pandamatenga show that they are often the most humid areas of the country by frequency. Pandamatenga consistently records the highest levels of humidity.

Goodhope was the windiest place in the country, by frequency of recording within the top three highest maximum wind speed. Tsabong recorded the highest wind speed when in the top three. The most predominant of the wind direction for the country was that of wind blowing from the East, the North East and the East North East.

Water

There was a downward trend in water levels for most of the dams by the end of the 2023-2024 period, following some significant gains in the earlier years. This was followed by major gains for all the dams in the year 2025. Thune dam recorded the highest single year gain between 2024 and 2025 after three consecutive years of heavy losses, while Gaborone Dam showed significant recovery for the same period. Dikgatlong Dam is the single largest source of abstracted surface water.

The total surface water abstracted annually shows a consistent upward trend over the period, indicating a rising water demand. The most substantial increase occurred between the 2020-2021 and 2021-2022 periods, with total surface water abstraction increasing by 50 percent.

A significant surge in groundwater extraction was observed across Gaborone, Francistown, and Maun Management Centres (MCs). Notably, the Gaborone Masama MC recorded exponential growth throughout the period, driven by the elevated demand in the Greater Gaborone area and its satellite settlements. Palapye & Masunga MCs indicate a reduction in their groundwater abstraction.

Gaborone management centre was the dominant centre for water production, consistently producing more water than any other management centre. Francistown management centre is the second-largest producer. Management Centres at Tsabong, Ghanzi, and Kasane have the lowest production by volume. There was a steady increase in total national water production from 2020-21 to 2023-24, followed by a slight decrease in 2024-25.

Kanye-Lobatse Service Centre (SC) shows the highest water losses, or non-revenue water (NRW) for the whole period at 62.9 percent, followed by Francistown-Selibe Phikwe SC at 49.5 percent and Tsabong SC at 49.0 percent. NRW is generally increasing over the whole period.

Most of the extraction points on the Okavango and Thamalakane rivers (Shakawe, Gumare, Mohembo, Seronga and Nokaneng) show an increase in volumes of water extracted over the years. The extraction of water on the Okavango/Thamalakane Rivers over the whole period is highest in Shakawe. The highest extraction of water on the Chobe River is at the Kasane Portable Plant.

Whereas international water import volume remained stable over the 2019/20 to 2023/24 years, it more than doubled with a spike in volumes between 2023/24 and 2024/25. The highest import volume in a single month was recorded in September 2024.

Natural Disasters

According to the report, Botswana's disaster landscape between 2019 and 2024 was characterized by seasonal floods, storms, and heavy rains, with Mahalapye District emerging as a primary geographic hotspot and the only district to record fatalities across all three hazard types. Flooding was the most fatal hazard, accounting for 50% of the 10 recorded disaster-related deaths. Storms and hailstorms impacted 128 households, while heavy rains displaced 617 people in Mahalapye in 2019 and affected 120 households nationally in 2024.

Critical infrastructure suffered significant damage during the review period, including 16 educational facilities, two health facilities, and 10 discrete disruptions to essential services such as transportation, policing, and religious institutions.

In response, local adoption of Disaster Risk Reduction (DRR) strategies doubled from 25.0% to 50.0% during the 2019-2024 period, with the number of participating local authorities rising from 9 to 18, now covering 275 villages. Despite this progress, half of the country's 36 district councils have yet to fully implement these protocols, highlighting a critical need for expanded resilience planning in high-risk districts.

Wildlife Statistics

The results on wildlife statistics during the 2019-2024 period depict shifting poaching trends, significant human-wildlife conflict, and declining fish production. Despite government efforts, wildlife continues to experience poaching, with national incidents totaling 824. The data reveals a shift in poaching pressure: while high-profile species like Pangolin saw cases decline after a 2022 peak, Elephant poaching reached a five-year high of 33 incidents in 2024. The Central District remained the primary poaching hotspot with 278 incidents, while species like Kudu (130), Gemsbok (90), and Impala (79) faced consistent pressure.

Human-wildlife conflict remains a challenge, dominated by Elephants and Lions, particularly in the Ngamiland and Central districts. Despite a high number of 5,386 incidents in 2020, total national conflict incidents showed a 47% decline between 2020 and 2024.

Additionally, overall wildlife mortality showed a general downward trend from 723 deaths in 2019 to 319 in 2023, with Hartebeest and Elephant recording the highest overall mortality.

Lastly, fish capture production suffered a collapse, with dominant species like Bream and Carp experiencing production drops of 97.7% and 92.2% respectively between 2019 and 2022.

1. CLIMATE

This report examines temperature and rainfall patterns over a ten-year period. While these variables are key indicators of climate, the assessment is limited by the relatively short observation period. Climate analyses are typically conducted over much longer timescales to capture long-term trends and variability. However, due to data availability constraints, this study is restricted to the available ten-year dataset. This is undertaken by observation of average temperatures and total rainfall for the same monthly period for each of the years. The same rainfall stations are used for each of the comparisons throughout the periods, with only those with incomplete data excluded. In the same way, periods with incomplete data were excluded.

1.1. Temperatures

1.1.1. Monthly average maximum temperatures

Table 1.1 shows the annual average maximum temperature for each of the months during the years 2015 to 2025. Over the ten years, the highest average temperature of 41.9 degrees Celsius was recorded in January 2016, while the lowest at 27.6 degrees Celsius was experienced in July 2020.

Table 1.1: Monthly average maximum temperatures

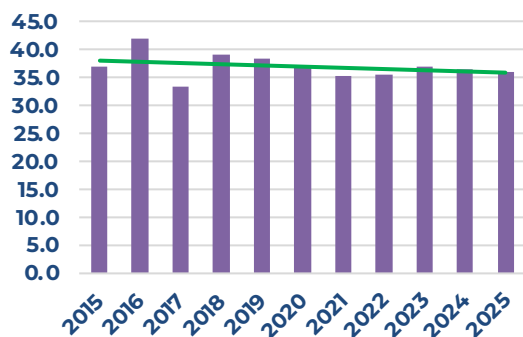
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2015	36.9	37.7	36.4	31.0	31.5	28.1	29.1	33.8	36.9	38.8	40.5	39.7
2016	41.9	39.2	34.5	33.7	29.9	28.5	28.9	32.4	36.4	40.8	39.8	39.3
2017	33.4	32.8	32.8	33.0	29.8	28.6	29.4	32.9	37.1	38.1	38.1	36.9
2018	39.1	34.2	34.3	32.1	30.5	29.4	29.2	33.4	37.6	38.1	39.3	39.5
2019	38.5	37.5	38.6	34.4	31.6	29.3	28.9	33.9	35.9	39.9	38.9	38.6
2020	36.9	36.0	34.7	34.1	30.4	27.8	27.6	33.3	37.6	39.4	39.6	36.3
2021	35.3	34.0	34.9	33.6	30.1	29.9	29.6	33.5	37.4	38.8	40.0	37.6
2022	35.6	35.8	33.9	33.0	30.7	28.6	29.3	33.8	37.1	39.3	38.5	38.5
2023	37.0	36.6	36.3	35.3	33.3	32.4	31.0	35.6	37.9	40.6	39.4	38.3
2024	36.6	40.3	40.7	34.9	33.4	30.1	32.0	34.6	39.2	39.6	39.3	41.2
2025	36.1	37.6	34.3	31.9	30.7	28.7	28.7	35.1	37.8	38.3	36.7	35.4

Source: Calculated from SASSCAL data

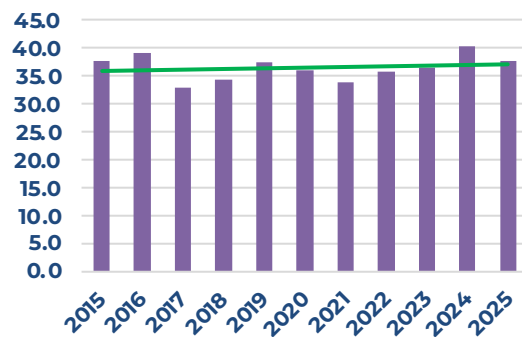
Figure 1.1 shows the comparison of each of the months maximum temperatures for each of the years. The trends show increasing average maximum temperatures for nine (9) of the months, with only November, December and January showing a decrease in their monthly average maximum temperatures.

Figure 1.1: Monthly average maximum temperatures 2015 – 2025 (°C)

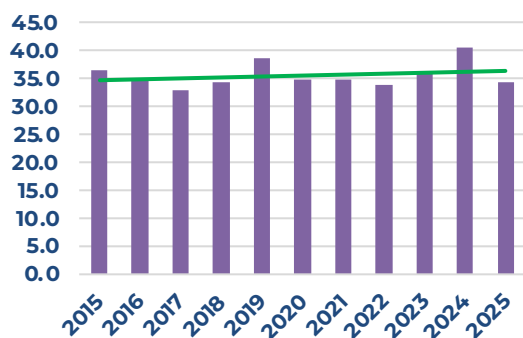
January



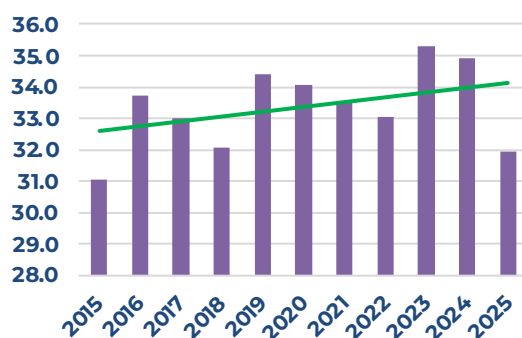
February



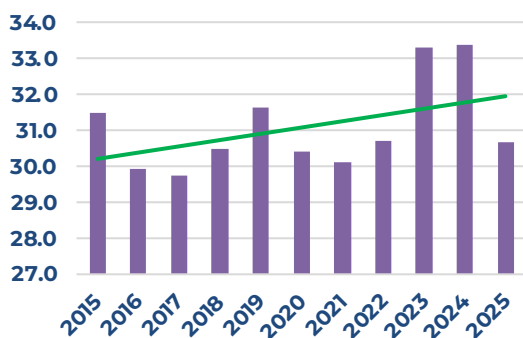
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April



May



June

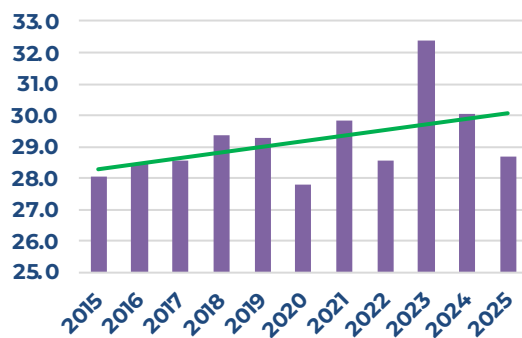


Figure 1.1: Monthly average maximum temperatures 2015 – 2025 (°C) (Continued)



1.1.2. Monthly average minimum temperatures

Table 1.2 shows the monthly average minimum temperatures for each of the months over the years 2015 to 2025.

Table 1.2: Monthly average minimum temperatures

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2015	15.0	14.6	13.3	10.4	5.1	-0.5	-0.7	0.0	6.3	11.6	10.8	16.5
2016	17.3	17.2	13.8	11.0	4.9	2.5	-1.0	1.5	7.4	9.3	15.6	17.1
2017	15.9	16.1	11.3	9.3	4.3	1.3	2.1	2.2	7.5	10.0	9.0	14.7
2018	14.3	15.2	14.3	9.7	5.2	1.8	0.4	3.1	2.8	10.0	11.6	15.6
2019	15.7	15.0	15.7	11.2	6.6	2.7	0.9	5.3	3.9	9.7	16.2	14.4
2020	13.5	16.2	13.0	7.7	0.7	-1.1	-0.7	1.5	6.8	9.9	12.7	13.0
2021	11.1	9.6	12.0	7.5	3.3	1.4	-1.6	1.7	9.1	9.1	13.5	13.9
2022	10.1	11.6	12.4	6.3	1.2	1.9	3.7	4.5	6.7	12.8	11.7	11.7
2023	11.6	8.2	10.3	9.3	4.0	1.9	0.7	2.9	7.1	10.6	12.5	10.2
2024	14.7	15.8	16.2	9.5	6.5	0.7	-0.5	4.2	7.6	8.3	12.7	14.1
2025	11.5	13.6	14.9	9.6	3.3	-0.4	1.2	1.2	8.7	13.4	15.2	15.8

Source: Calculated from SASSCAL data

Figure 1.2 shows the trends of the monthly average minimum temperatures for each over the period 2015 to 2025.

Figure 1.2: Monthly average minimum temperatures 2015 – 2025 (°C)



Figure 1.2: Monthly average minimum temperatures 2015 – 2025 (°C) (Continued)



Seven of the months show an increasing trend in their monthly average minimum temperatures while five of the months show a decreasing average monthly minimum temperature trend.

1.2. Rainfall

1.2.1. Annual total rainfall

Table 1.3 shows the annual total rainfall trends for the period 2015 to 2025, for stations with rainfall data. Sowa, Pandamatenga and Mahalapye were the wettest stations, showing average yearly rainfall of 494.9 mm, 493.1 mm, and 447.3 mm respectively.

Table 1.3: Total Annual rainfall by station 2015 to 2025 (mm)

Year	Shakawe	Pandamatenga	Sowa	Ghanzi	Baines drift	Mahalapye	Lephephe	Tshane
2015	301.7	263.3	282.4	249.8	93.0	224.1	213.0	254.0
2016	338.1	504.3	604.6	167.2	165.4	548.3	486.7	246.7
2017	391.6	499.7	805.1	490.9	282.1	383.2	803.3	419.8
2018	252.1	652.8	499.0	307.6	-	447.9	139.4	198.9
2019	188.7	188.2	195.9	220.4	69.0	533.6	261.7	244.7
2020	364.1	625.3	639.8	513.7	349.0	642.5	614.1	419.3
2021	782.5	581.9	398.3	890.6	336.1	527.2	538.9	630.6
2022	513.7	663.2	410.7	391.3	-	388.3	521.8	471.3
2023	313.3	401.6	408.7	364.4	-	326.5	244.3	224.6
2024	318.3	399.1	370.7	343.0	81.0	298.2	127.5	208.6
2025	574.0	644.3	829.0	753.4	286.7	600.0	441.1	519.2
Average	394.4	493.1	494.9	426.6	207.8	447.3	399.3	348.9

Source: Department of Meteorological Services
(-) Shows no data

Figure 1.3 shows the trends in total annual rainfall for the stations during the period 2015 to 2025. Between 2015 and 2025, rainfall trends were predominantly on an increasing or stable trend, largely due to recovery from dry spells. Only Lephephe shows a trend of decreasing rainfall over the period.

Figure 1.3: Total annual rainfall 2015 to 2025 (mm)

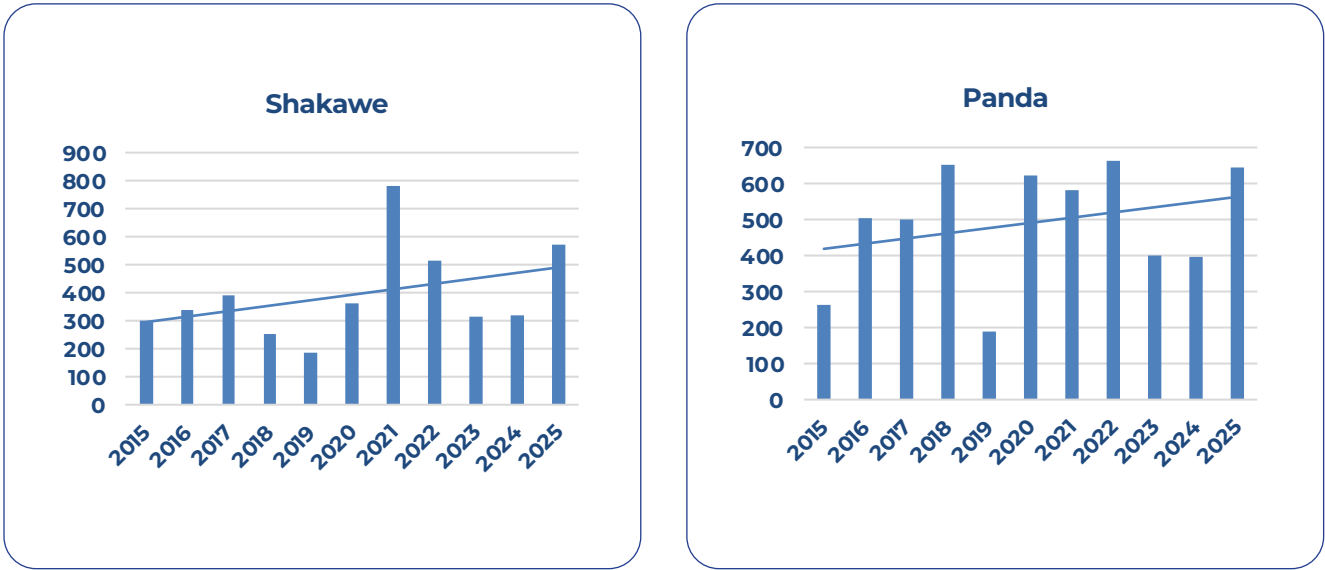
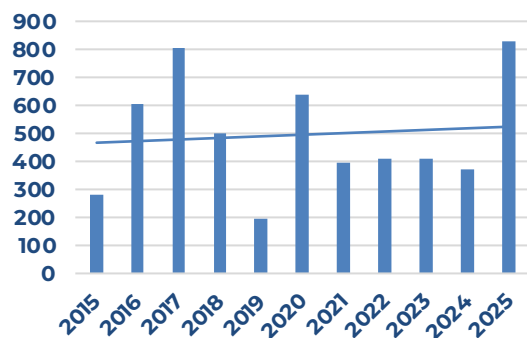
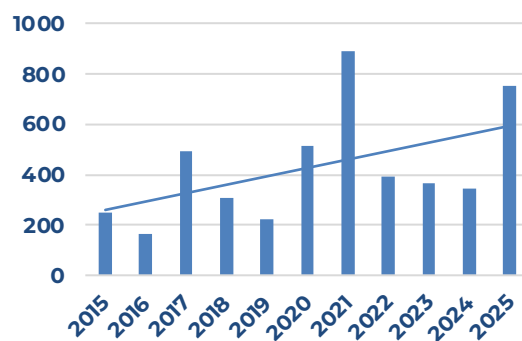


Figure 1.3: Total annual rainfall 2015 to 2025 (mm)

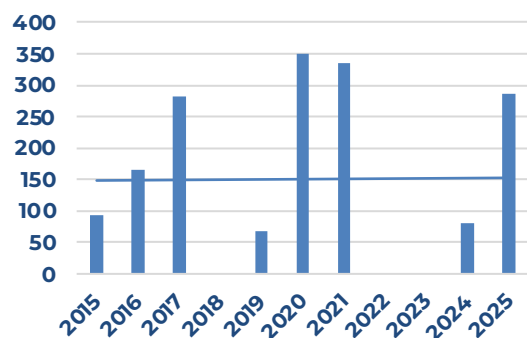
Sowa



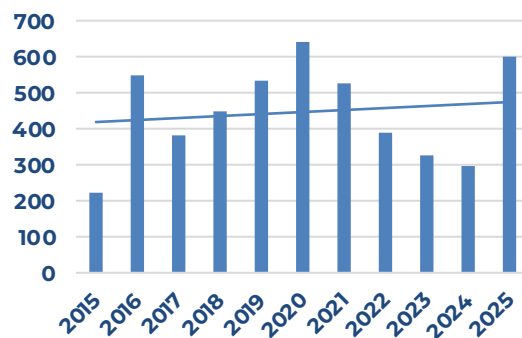
Ghanzi



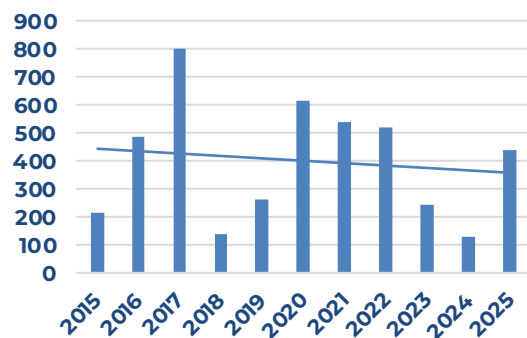
Baines Drift



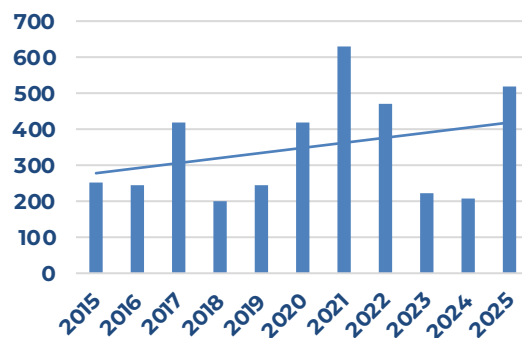
Mahalapye



Lephephe



Tshane



1.3. Humidity

Humidity is a critical, though often underrepresented, indicator of atmospheric moisture. It plays a fundamental role in regulating evapotranspiration processes, informing agricultural planning and water resource management, and influencing human comfort and well-being.

Table 1.4 shows the average relative humidity for each of the months for the period 2015 to 2025. Indications are that February recorded the peak monthly average humidity annually. Humidity was lowest in September.

Table 1.4: Average relative humidity by month 2015 – 2025 (Percent)

Month	Humidity
January	62.6
February	65.5
March	62.9
April	62.6
May	50.2
June	47.1
July	42.2
August	33.7
September	29.8
October	33.1
November	44.9
December	56.0

Source: Calculated from SASSCAL data

Table 1.5 shows how often the stations appear in the top 3 humidity recordings for the period 2015 to 2025. Mahalapye, Goodhope and Pandamatenga were most often in the top 3, indicating that they are often the most humid areas of the country by frequency.

Table 1.5: Frequency of stations appearance in top 3 (percent)

Station	Percentage frequency
Mahalapye	22.2
Goodhope	19.4
Pandamatenga	13.9
Baines Drift	13.9
Lephephe	11.1
Shakawe	5.6
Tubu	5.6
Mababe	8.3

Source: Calculated from SASSCAL data

Table 1.6 shows the highest average humidity for all the stations for the period 2015 to 2025. They were all recorded for Pandamatenga at 95.3 percent in January 2021, 91.8 percent in February 2021 and 91.1 percent in February 2018.

Table 1.6: Highest 3 recordings of humidity 2015 to 2025 (percent)

Station	Month - year	Humidity
Pandamatenga	February 2018	91.1
Pandamatenga	January 2021	95.3
Pandamatenga	February 2021	91.8

Source: Calculated from SASSCAL data

1.4. Wind Speed

As Botswana seeks to diversify its energy mix and reduce its dependence on conventional carbon-intensive power generation, the development and utilization of renewable energy resources have emerged as a national priority. While solar energy is currently the most prominent alternative, wind energy holds significant, yet under-utilized potential. Effective, safe, and efficient exploitation of wind, particularly for large-scale wind farms, requires a detailed understanding of not only average wind speeds but, more importantly, the maximum wind speeds.

Table 1.7 shows the highest recorded maximum wind speeds by month, showing the place and date of recording. The highest three wind speeds were selected for each month. The highest wind speed recorded for the period 2015 to 2025 was 16 m/s recorded for Tsabong in December 2016, followed by 14.9 m/s for Goodhope in November 2017 and 14.8 for Tsabong in November 2020.

Table 1.7: Highest wind speeds recorded

Station	Month and year	Maximum Wind speed recorded m/s
Tsabong	Dec-16	16.0
Goodhope	Nov-17	14.9
Tsabong	Nov-20	14.8
Tsabong	Dec-20	14.8
Goodhope	Jun-15	14.7
Tsabong	Apr-16	14.7
Lephephe	Nov-16	14.6
Tsabong	Oct-17	14.6
Tsabong	Oct-15	14.4
Lephephe	Jan-19	14.4
Goodhope	Sep-15	14.3
Lephephe	Oct-15	14.3
Tsabong	Jan-22	14.1
Tsabong	Sep-15	14.0
Tsabong	Jan-16	14.0
Goodhope	Dec-18	13.7
Goodhope	Sep-20	13.7
Lephephe	Mar-24	13.6
Goodhope	Aug-21	13.5
Goodhope	Jun-16	13.4
Goodhope	Feb-15	12.7
Goodhope	Mar-18	12.7

Table 1.7: Highest wind speeds recorded (Continued)

Station	Month and year	Maximum Wind speed recorded m/s
Goodhope	Apr-19	12.5
Tsabong	Feb-21	12.4
Goodhope	Aug-18	12.3
Goodhope	Jun-22	12.3
Tsabong	Feb-19	12.2
Goodhope	Apr-22	12.1
Goodhope	Aug-16	12.0
Goodhope	Jul-15	11.9
Goodhope	Jul-23	11.6
Tsabong	May-16	11.3
Tsabong	Mar-16	11.2
Goodhope	Jul-16	10.9
Goodhope	May-16	10.6
Lephephe	May-16	10.5

Source: SASSCAL

The frequency with which stations appeared among the three highest wind speed recordings was analysed to identify the stations that most consistently experienced the strongest winds. Table 1.8 presents the stations with the highest frequency of occurrence within the top three maximum wind speed records, together with their average maximum wind speed when ranked among the top three and their overall average maximum wind speed for the period 2015–2025. Goodhope was the windiest place in the country, by frequency of recording within the top three highest maximum wind speed at 50 percent (18 out of 36) of the time, followed by Tsabong at 36.1 percent (13 out of 36) of the time and Lephephe at 13.9 percent (5 out of 36) of the time. Tsabong recorded the highest wind speed when in the top three.

Table 1.8: Highest maximum wind speed by frequency and average speed

Station	frequency of station's appearance in top 3	Average wind speed when in top 3 m/s	Average wind speed overall m/s
Goodhope	18.0	12.8	10.6
Tsabong	13.0	13.7	10.6
Lephephe	5.0	13.5	9.6

Source: Calculated from SASSCAL data

The overall average maximum wind speed of the Goodhope, Tsabong and Lephephe point towards the need for feasibility studies for wind generated power in those areas.

1.5. Wind direction

Analysing wind direction is a fundamental process in meteorology and engineering used to track atmospheric movement and its impact on the environment. This analysis follows a universal convention: wind direction is defined by where the wind originates, rather than where it is blowing. Wind direction is measured relative to true north and typically reported in clockwise degrees (0° to 360°) or using the cardinal points North, South, East, and West. In Environmental safety, the tracking of wind direction is critical for predicting the dispersal of air pollutants and identifying potential sources of contamination. The analysis of prevailing winds is also used to optimize the placement and efficiency of wind turbines, which are clean energy.

Table 1.9 shows the national wind directions for the years 2015 to 2025, based on those stations that had data. The data is shown in percent, that is, the percentage of time the wind blew from the indicated direction. The highest predominance is that of wind blowing from the East North East, the North East and the East, recorded in 2018, 2020 and 2022 respectively, all at 25 percent.

Table 1.9: Wind direction 2015 to 2025 (percent)

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
2015	3.3	20.8	22.5	13.3	18.3	10.0	5.0	2.5	0.0	0.0	0.8	0.0	0.0	0.8	0.8	1.7
2016	3.8	16.7	22.7	22.0	16.7	10.6	3.8	0.8	0.0	0.0	0.0	0.8	0.8	0.0	0.8	0.8
2017	3.8	11.5	21.8	21.8	19.2	12.2	7.7	1.3	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0
2018	3.2	14.1	17.9	25.0	21.8	10.3	3.8	0.0	0.0	0.0	0.0	1.9	0.6	0.6	0.0	0.6
2019	3.2	11.5	23.1	17.3	21.8	11.5	5.8	2.6	0.0	0.0	0.6	0.0	0.0	1.3	0.6	0.6
2020	2.1	8.3	25.0	24.3	16.7	16.0	5.6	0.7	0.7	0.0	0.0	0.7	0.0	0.0	0.0	0.0
2021	4.9	17.5	20.3	18.9	14.7	11.9	7.7	1.4	0.0	0.0	0.0	0.0	0.7	0.0	0.7	1.4
2022	3.8	8.3	22.0	19.7	25.0	14.4	5.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8
2023	2.1	11.2	16.1	20.3	18.9	11.2	5.6	2.1	2.1	4.2	1.4	0.7	0.7	0.7	0.7	2.1
2024	2.8	15.0	11.2	13.1	16.8	16.8	6.5	2.8	1.9	8.4	0.0	0.9	0.0	1.9	0.9	0.9
2025	1.9	15.1	18.9	18.9	15.1	11.3	5.7	1.9	6.6	3.8	0.0	0.0	0.9	0.0	0.0	0.0

Source: Calculated from SASSCAL data

2. WATER

This chapter covers the years 2020 to 2025 and provides statistics on dam levels, water production, non-revenue water, groundwater abstraction, surface water abstraction and international imports of water.

2.1. Dam Levels

Botswana has nine dams from which surface water is sourced, namely Gaborone, Nnywane, Bokaa, Letsibogo, Shashe, Ntimbale, Thune, Lotsane and Dikgatlhong dams. Botswana also imports water from Molatedi dam in the Republic of South Africa.

Table 2.1: Dam Capacities

Dam	Capacity (million cubic meters Mm3)
Dikgatlhong	400.0
Gaborone	141.4
Letsibogo	100.0
Thune	90.0
Shashe	85.0
Lotsane	40.0
Ntimbale	26.6
Bokaa	18.5
Nnywane	2.3
Molatedi (in South Africa)	201.0

Source: Water Utilities Corporation

Note: Molatedi is in South Africa and provides imported water to Botswana

Table 2.1 shows the dam capacities. Dikgatlhong dam is the country's largest dam by capacity at 400 million cubic metres (m³) while Nnywane is the smallest at 2.3 million cubic meters. The dam levels depend on rainfall in the catchment areas, as well as inflows and outflows of water into and out of the dams. Evaporation and extraction rates are also determinants of the dam levels.

Table 2.2 shows the annual average dam levels based on mid-month levels over the 6 years. (See Appendix I for mid-month levels).

Table 2.2: Annual average dam levels (Percent)

Dam / Year	2020	2021	2022	2023	2024	2025
Dikgatlhong	66.4	93.3	84.0	91.0	75.2	93.1
Gaborone	15.2	51.6	42.1	59.9	35.6	94.2
Letsibogo	58.6	54.8	52.2	61.4	45.4	83.4
Lotsane	85.3	88.8	90.6	79.6	47.0	85.5
Molatedi	51.8	85.0	72.9	71.0	53.8	86.2
Ntimbale	87.6	88.7	89.0	86.6	63.3	87.8
Shashe	90.8	90.8	93.9	87.8	80.0	91.5
Thune	58.0	80.8	67.7	48.6	24.2	89.4
Nnywane	78.2	81.7	90.6	83.5	42.9	86.3
Bokaa	87.8	92.9	97.3	97.5	85.2	92.1

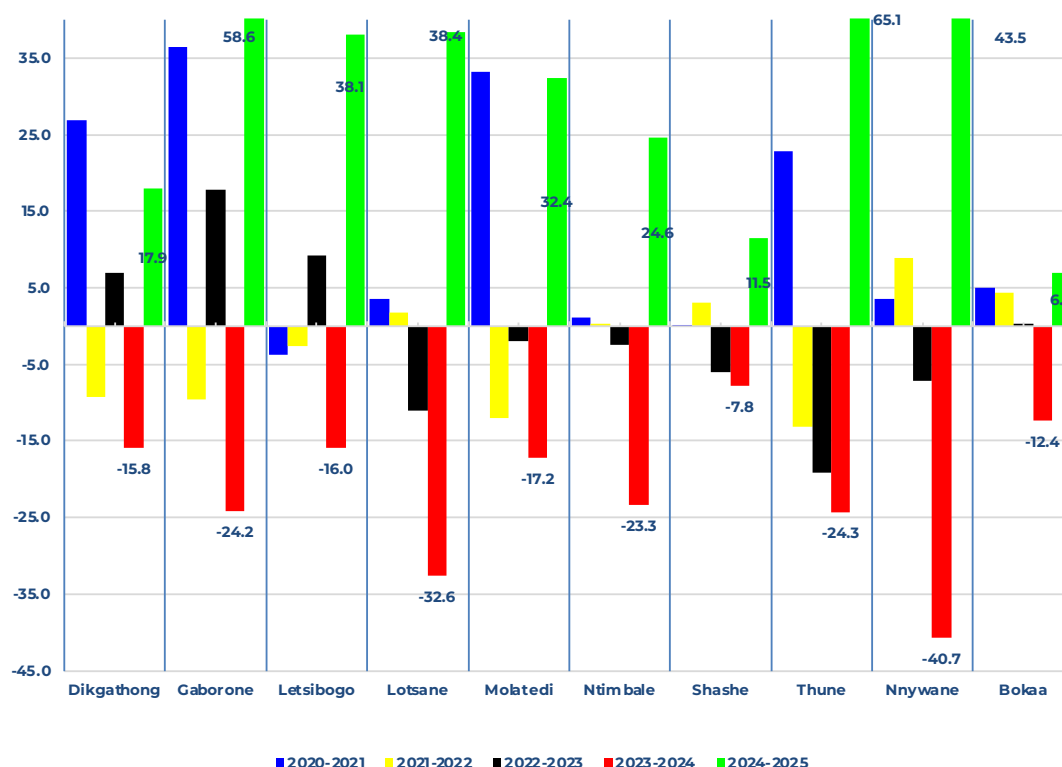
Source: Water Utilities Corporation

2.1.1. Overall dam levels changes

The data reveals a generally downward trend in water levels for most of the dams by the end of the 2023-2024 period, following some significant gains in the earlier years. This was followed by major gains for all the dams in the year 2025.

The dramatic increase in levels for 2024-2025 is largely attributed to above-normal rainfall and tropical weather systems, such as Tropical Cyclone Dikeledi, which significantly boosted inflows across various catchments. Conversely, the 2023-2024 "crash" reflects the ongoing challenges of climate change and high evaporation rates in the region. Figure 2.1 shows the annual percent change in the dam levels for each of the years.

Figure 2.1: Annual dam level changes (percent)



Thune recorded the highest single year gain between 2024 and 2025 (65.1 percent) after three consecutive years of heavy losses, while Gaborone Dam showed significant recovery (58.6 percent) for the same period. Dikgatlhong Dam showed more stability with lower comparative gains. Ntimbale and Shashe dams had the least volatility, while Bokaa Dam is the most consistently low performer with the lowest gains between 2023 and 2024 (0.2 percent).

2.2. Water abstraction from the dams

Botswana's surface water abstraction primarily relies on nine domestic dams and the Molatedi Dam in South Africa, which provides critical imported water. These reservoirs, including major sites like the Dikgatlhong, Shashe and Gaborone dams, form the backbone of the country's surface water supply.

Table 2.3: Abstraction from the dams (Kilolitres)

Dam	2019-2020	2020-2021	2021-2022	2023-2024	2024-2025
Gaborone	21,533,959.0	20,890,362.8	19,378,824.5	19,865,082.0	19,991,572.0
Nnywane	363,430.0	275,547.0	195,267.0	-	84,700.0
Letsibogo	3,769,598.0	3,866,436.0	4,397,618.6	6,400,703.0	7,814,778.0
Shashe	16,735,276.0	18,070,841.0	19,246,256.0	18,029,226.5	18,115,127.0
Bokaa	2,814,600.0	6,589,066.0	1,069,000.0	3,158,202.0	877,779.0
Molatedi	4,806,666.0	3,180,848.0	359,449.0	3,395,454.0	2,913,033.3
Ntimbale	2,830,326.0	2,983,530.0	3,569,517.0	4,523,041.0	4,287,828.0
Lotsane	1,289,859.0	1,338,699.0	1,478,001.6	2,414,882.0	3,715,673.0
Dikgatlhong	33,344,959.0	40,814,604.0	33,902,177.0	30,451,501.0	31,070,920.9
Thune	1,805,292.0	2,038,665.0	2,622,202.3	2,507,855.0	2,390,485.0
Total	54,143,714.0	57,195,329.8	86,218,312.9	90,745,946.5	91,261,896.2

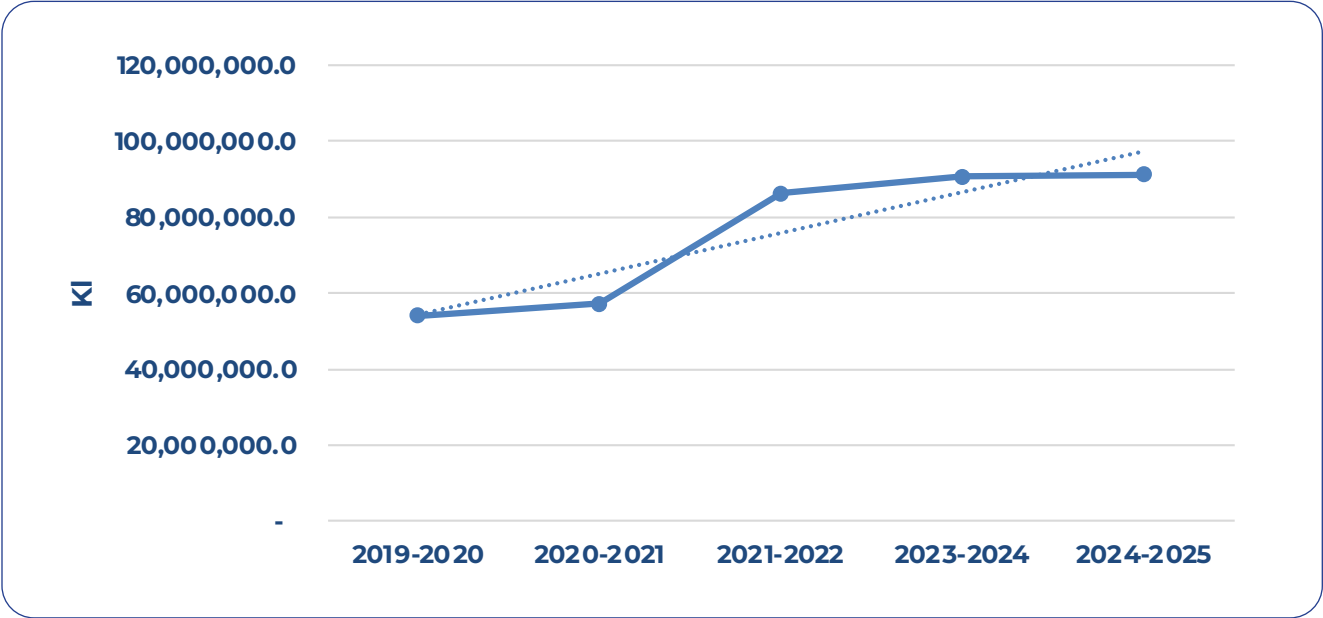
Source: Water Utilities Corporation

(-) shows no data

Molatedi dam is in South Africa but is monitored as it provides water to Botswana

Table 2.3 shows the volumes of water abstracted from each of the dams annually from 2019-20 to 2024-25. There is no data available for the year 2022-23. Dikgatlhong Dam is the single largest source of abstracted surface water. This is expected, as it is the largest dam in Botswana. Gaborone and Shashe Dams are also major contributors, supporting the greater Gaborone area and Francistown area respectively. **Figure 2.2** shows the total water abstracted from the dams.

Figure 2.2: Total abstraction of water from dams (kilolitres)



The total water abstracted annually from dams shows a generally upward trend over the period, indicating rising water demand. The most substantial increase occurred between the 2020-2021 and 2021-2022 periods, with total abstraction jumping by over 29 million, a 50 percent increase. This is primarily because of post covid industrial recovery and increased reliance on surface water as more settlements were connected to networks supplied by surface water.

2.3. Extraction of underground water

Botswana’s water security is defined by a balance between limited surface water reserves and an increasingly vital dependence on groundwater extraction. As a semi-arid nation with high evaporation rates Botswana relies on surface water, primarily from reservoirs like the Dikgatlhong Dam and the North-South Carrier pipeline , to meet the bulk of its urban demand. However, groundwater serves an important supplementary function adding to the surface water supply. Table 2.4 shows the volumes of underground water abstracted by Management Centre (MC), for the years 2019-20 to 2024-25. There is no data available for the year 2022-23, and for some of the MCs for some of the months.

Table 2.4: Underground water extraction 2019-20 to 2024-25 (kilolitres)

	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
Francistown MC	-	33,780.70	-	-	41,148.00	72,632.00
Gaborone (Masama)	135,081.00	-	4,417,049.00	-	9,799,333.00	12,688,881.00
Gaborone (Ramotswa)	-	-	2,124,353.00	-	-	1,261,408.70
Ghanzi MC	1,478,806.90	1,546,159.90	1,420,752.00	-	1,592,195.00	1,577,771.40
Gumare MC	-	-	416,124.00	-	352,362.00	381,022.80
Kanye MC (Excl. Debswana Water)	4,079,403.40	3,635,120.00	4,090,492.00	-	4,026,096.70	3,316,391.00
Kasane MC	77,749.00	82,759.00	806,327.00	-	101,208.00	81,614.00
Letlhakane MC	2,150,012.00	2,683,665.00	2,783,289.00	-	2,017,992.00	1,666,617.00
Lobatse MC	1,290,788.00	581,545.00	606,333.00	-	664,403.00	630,863.40
Mahalapye MC	1,315,453.00	1,356,925.00	1,460,548.50	-	1,576,188.00	1,644,436.00
Masunga MC	2,501,185.90	96,426.80	512,270.00	-	173,896.00	92,233.00
Maun MC	3,187,986.00	3,338,705.80	3,046,491.00	-	3,025,055.00	4,449,158.00
Mochudi MC	224,836.00	365,060.00	269,780.00	-	204,148.00	315,629.50
Molepolole MC	5,915,401.80	5,629,245.30	5,222,677.00	-	4,455,759.00	4,406,906.00
Palapye MC	741,564.00	268,001.00	463,951.00	-	184,607.00	20,141.00
Selibe Phikwe MC	591,048.00	555,682.00	452,643.00	-	239,000.00	202,067.00
Serowe MC	1,832,423.00	1,478,547.00	1,242,931.00	-	1,392,677.00	907,149.60
Tsabong MC	1,794,088.90	1,839,682.00	2,002,694.30	-	1,174,032.00	1,235,107.00
Tutume MC	-	3,087,169.00	7,241,722.00	-	3,223,480.90	3,242,010.70
Hukuntsi MC	-	-	-	-	883,104.30	775,145.00
Total	27,315,826.90	28,508,820.40	34,163,377.90	-	35,126,684.80	38,967,184.10

Source: Water Utilities Corporation

A significant surge in groundwater extraction was observed across the Gaborone, Francistown, and Kasane Management Centres (MCs). Maun MC shows a steady increase. Most notably, the Gaborone Masama MC recorded exponential growth throughout the period, driven by the intensive demand in the Greater Gaborone area and its satellite settlements. This shift became a strategic necessity during the 2024-25 cycle, as dwindling surface water levels forced a transition toward the Masama Wellfield to maintain regional water security. Kasane's groundwater extraction surge in 2020-21 stabilized by 2024-25, and is the result of a temporary reliance on groundwater abstraction during the commissioning of a new higher capacity river water extraction plant. Tutume MC also experienced a surge which was due to system failures (Masingwaneng and Maitengwe wellfield) and an acute water shortage during the Covid 19 pandemic, which stabilized by 2024-25 due to the commissioning of new infrastructure. However, groundwater abstraction remained in use for some of the villages.

Palapye & Masunga MCs indicate a reduction in their groundwater abstraction. Palapye dropped by 97.2 percent, and Masunga by 96.3 percent over the period under study. Molepolole shows a significant 25.5 percent reduction. Lobatse & Serowe both show a reduction of about 50 percent. The reductions may be the result of better integration into the supply from the North-South Carrier (NSC) pipeline by the MCs. The national trend in groundwater abstraction is defined by a trajectory of aggressive intensification, with total extraction surging by 42.6% during the period under study.

2.4. Water Production

There are seventeen (17) Management Centres (MCs) countrywide, through which Water Utilities Corporation (WUC) provides potable water. The management centres treat and provide water sourced from both surface and groundwater. Table 2.5 presents data on water production in kilolitres (kL) across 17 different management centres in Botswana from the 2020-21 financial year to 2024-25.

Table 2.5: Water production by Management Centre 2020-21 to 2024-25 (kilolitres)

	2020-21	2021-22	2022-23	2023-24	2024-25
Gaborone	41,539,779.0	38,852,781.7	37,174,701.0	41,638,392.7	39,015,345.5
Francistown	15,239,779.0	16,446,362.0	16,235,122.0	16,410,031.2	15,949,215.8
Kanye	7,867,763.0	8,257,282.0	9,216,880.5	9,498,005.0	9,457,093.2
Molepolole	6,988,287.0	6,709,597.0	13,238,061.5	7,526,582.7	9,317,418.8
Palapye	5,639,552.0	6,483,521.7	6,179,200.4	8,538,370.9	8,555,530.3
Selibe Phikwe	6,340,858.0	7,268,676.6	7,913,329.9	7,040,606.2	7,673,981.4
Mahalapye	5,577,168.0	5,349,000.2	5,811,088.8	6,963,646.7	6,978,622.1
Mochudi	5,108,811.0	5,140,626.4	6,141,689.0	6,437,362.2	6,142,489.0
Tutume	3,087,169.0	2,444,745.1	3,523,984.3	4,566,788.9	4,828,506.8
Maun	5,385,012.0	6,042,321.5	5,269,137.2	4,432,027.4	4,613,339.9
Lobatse	4,356,553.0	5,674,887.1	4,751,069.2	4,929,453.9	4,603,855.1
Serowe	3,516,791.0	3,786,039.0	3,910,955.5	3,910,955.5	3,779,555.3
Masunga	2,191,402.0	1,977,334.6	2,319,813.3	2,797,328.1	2,451,716.0
Letlhakane	2,676,351.0	2,149,946.8	3,716,495.5	1,967,040.0	2,098,095.6
Tsabong	1,834,621.0	1,921,068.0	2,003,124.1	2,089,068.9	2,020,319.6
Kasane	1,661,105.0	1,740,419.5	1,637,031.3	1,755,656.9	1,892,753.0
Ghanzi	1,546,160.0	1,654,993.0	1,508,126.0	1,595,218.3	1,579,733.4
Total	120,557,162.0	121,899,602.0	130,549,809.0	132,096,536.0	129,418,937.0

Source: Water Utilities Corporation

Gaborone management centre is the dominant centre for water production, consistently producing more water than any other management centre. Francistown management centre is the second-largest producer. Gaborone and Francistown Management centres serve larger populations and therefore require more water than the other management centres. Management Centres such as Tsabong, Ghanzi, and Kasane have the lowest production volumes, generally staying below 2.5 million kL per year. Most of the management centres show relatively stable water production over the period indicating consistent operational output.

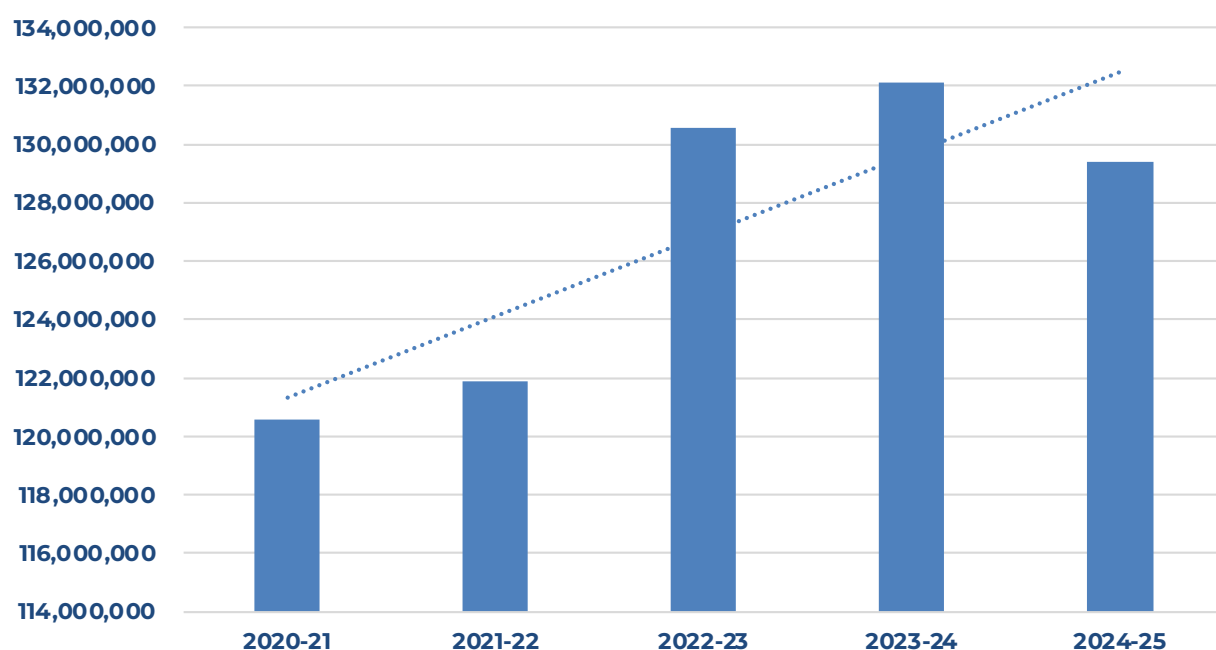
The Molepolole Management Centre shows a notable spike in production in 2022-23 (13.2 million kL), which is almost double its typical production range of 6-9 million kL in other years. This spike was driven by the commissioning of the Gamononyane-Molepolole pipeline. Molepolole is one of the areas in the country suffering from water supply deficit due to dilapidated infrastructure problems, (Daily News 2024). Management Centres like Letlhakane, Maun and Tutume experienced dramatic fluctuations, suggesting potential operational issues, changes in demand, or data reporting anomalies.

Five of the Management Centres (show an increasing trend in their production of water, with three showing decreasing and two showing stable water production over the five year period. Kanye, Palapye, Mahalapye, Tutume and Kasane Management Centres showed steady growth in water production. Francistown, Serowe, Ghanzi and Lobatse Management Centres show a stable trend in water production with minor variations. The highest percentage increase was recorded by Letlhakane in 2022-23 at 73 percent, while the lowest percentage decrease was recorded by Letlhakane in 2021-22 at -20 percent.

2.4.1. National water production

There was a steady increase in total national water production from 2020-21 to 2023-24, followed by a slight decrease in 2024-25 (see figure 2.3). The slight decrease was mostly from the Gaborone MC's decline in production. The overall trend portrays a growing demand or expanded production capacity.

Figure 2.3: National water production 2020-21 to 2024-25 (kilolitres)



2.5. Water supply for selected settlements

Table 2.6 shows the total water supply for selected settlements. The selection of settlements is based on the highest water supply volumes.

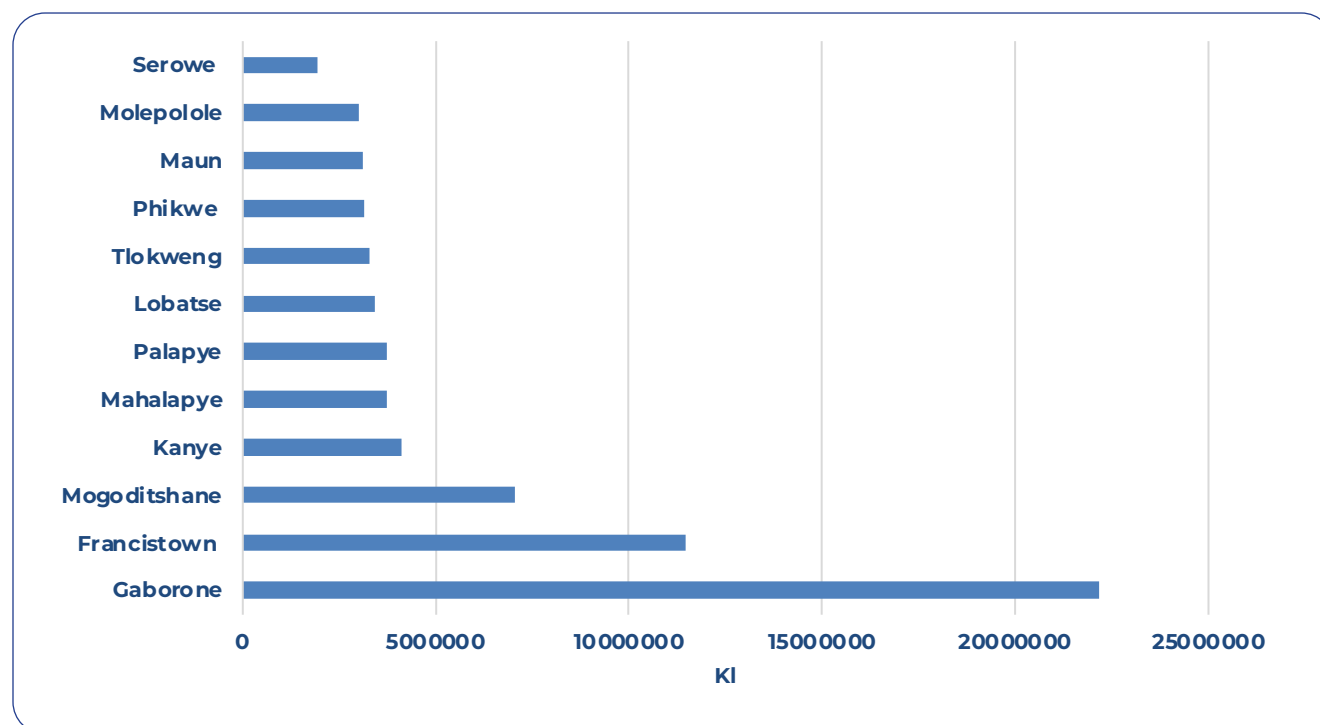
Table 2.6: Water supply for selected settlements (Kilolitres)

Water supply by settlement	2019-20	2020-21	2021-22	2023-24	2024-25	Total
Gaborone	22,931,495.2	25,838,640.5	20,188,618.0	20,600,806.0	21,278,525.1	110,838,084.8
Francistown	12,142,519.0	10,778,779.0	11,758,947.0	11,844,161.0	10,887,913.0	57,412,319.0
Mogoditshane	3,074,118.0	4,715,299.4	10,146,045.8	9,505,553.8	7,764,670.7	35,205,687.8
Kanye	2,936,935.5	4,346,952.9	4,426,921.0	4,383,111.0	4,432,274.0	20,526,194.4
Mahalapye	2,879,962.0	3,548,496.3	3,400,500.0	4,437,595.0	4,406,937.0	18,673,490.3
Palapye	5,260,481.6	2,921,198.0	3,685,758.0	3,451,466.0	3,323,189.0	18,642,092.6
Lobatse	3,619,041.0	3,196,159.8	4,182,180.5	3,095,279.0	3,055,834.0	17,148,494.3
Tlokweng	2,940,620.0	3,536,057.0	3,242,930.0	3,228,310.0	3,539,534.3	16,487,451.3
Phikwe	2,962,718.0	2,960,437.0	3,178,745.0	3,104,560.0	3,618,816.0	15,825,276.0
Maun	4,409,418.0	3,193,536.0	3,598,872.0	2,083,332.5	2,206,966.0	15,492,124.5
Molepolole	2,608,663.0	2,869,968.0	2,510,772.0	2,670,554.0	4,420,355.0	15,080,312.0
Serowe	3,024,721.0	2,929,107.0	3,176,022.0	283,475.5	243,332.5	9,656,658.0

Source: Water Utilities Corporation

Gaborone and Francistown have consistently supplied the highest volumes of water. Figure 2.4 shows the average water supplied to each settlement, for the selected highest supplied settlements in the country. Gaborone and Francistown show the highest annual average of water supplied.

Figure 2.4: Annual average water supply for selected settlements 2019/20 to 2024/25 (Kilolitres/year)



2.6. Water sales

Watersales is the volumes of water sold, derived from the sales figures at the Water Utilities Corporation (WUC). It is a rough estimate or proxy figure that indicates how much water was consumed in a given period of time (Consumption). Table 2.7 shows water sales by Service Centre (SC).

Table 2.7: Water sales 2019-20 to 2023-24(kilolitres)

Service Centre (SC)	2019-20	2020-21	2021-22	2023-24
Gaborone	25,329,909.8	25,844,546.2	27,650,827.0	23,222,394.3
Francistown/ Selibe Phikwe	14,769,980.0	13,824,827.7	12,555,418.3	10,306,442.0
Mahalapye/ Palapye	6,468,470.3	7,272,763.0	7,266,909.0	8,270,651.8
Molepolole/ Mochudi	6,494,470.3	7,461,031.4	7,416,809.0	7,763,022.4
Kanye/ Lobatse	9,263,124.1	6,444,326.5	5,783,895.5	5,144,029.5
Masunga/ Kasane	4,082,236.0	4,525,132.4	4,703,443.0	4,999,297.7
Maun	2,292,661.5	3,377,881.0	3,440,349.0	2,330,413.4
Serowe/ Letlhakane	3,089,134.0	3,949,856.0	3,874,385.0	2,317,702.1
Tsabong	944,247.0	981,612.0	992,248.0	1,026,266.4
Ghanzi	1,036,607.8	1,014,093.3	1,021,882.0	985,362.9

Source: Water Utilities Corporation

Gaborone consistently maintained the highest water consumption, peaking in 2021-22 at approximately 27.65 million kl. However, there was a noticeable dip in 2023-24 to 23.22 million. Francistown/Selibe Phikwe shows a steady downward trend, decreasing from 14.77 million kl in 2019-20 to 10.31 million kl in 2023-24. Masunga/Kasane and Mahalapye/Palapye show significant growth over the four-year period, increasing from 6.47 million to 8.27 million kl. Tsabong and Ghanzi consistently recorded the lowest volumes, hovering around 1 million units annually.

2.7. Non Revenue Water (NRW)

Non-Revenue Water (NRW) is the difference between the water that is pumped into the system and that which is accounted for with revenue or sales. This provides a proxy measure for water losses. Limitations are acknowledged in using NRW for losses, as revenue is also dependent on factors such as the rate, amount and time at which customers pay, which may not necessarily have a strong relationship with the actual volumes of water used. Table 2.8 shows the monthly NRW for each of the service centres (SC) around the country.

Table 2.8: Monthly Non-Revenue Water by Service Centre (percent)

Non-revenue water (Percent)		Gaborone	Molepolole Mochudi	Kanye Lobatse	Tsabong	Ghanzi	Francistown Selebi-Phikwe	Mahalapye Palapye	Serowe Letlhakane	Masunga Kasane	Maun	TOTAL
2020-21	Apr	26.9	45.4	54.7	53.0	33.4	37.4	16.6	37.0	35.0	41.8	37.0
	May	29.0	45.7	77.2	48.3	27.1	38.8	69.0	57.4	47.4	55.1	46.6
	Jun	16.7	44.3	66.9	46.4	27.6	30.5	25.8	32.4	35.0	34.1	33.2
	Jul	51.5	32.5	62.0	41.8	26.8	19.1	27.8	30.0	38.8	42.8	41.2
	Aug	33.9	31.3	56.0	29.2	47.1	33.8	60.5	43.8	21.2	46.9	39.1
	Sep	5.0	27.4	61.8	40.7	39.6	12.4	21.5	36.3	18.0	45.9	23.9
	Oct	26.0	38.0	63.4	48.6	41.1	36.6	21.3	32.3	39.8	42.6	37.1
	Nov	17.3	35.8	61.0	50.1	32.3	39.2	49.8	35.1	42.4	21.0	34.8
	Dec	44.9	42.0	68.3	54.1	35.0	43.0	42.7	24.8	33.9	50.0	45.0
	Jan	20.8	29.8	58.9	59.1	30.1	43.9	35.3	34.7	37.0	12.4	35.0
	Feb	55.6	39.4	60.7	43.4	37.0	50.9	32.2	24.9	30.6	20.2	46.6
	Mar	27.8	34.4	56.7	40.4	31.8	42.5	34.9	30.8	36.2	29.7	36.9
	Average	29.8	37.3	62.3	46.5	34.4	35.9	36.3	35.2	34.8	37.3	38.0
2021-22	Apr	25.2	34.1	50.0	23.2	20.3	40.2	24.9	9.6	13.6	36.0	30.9
	May	25.8	38.6	59.1	52.8	36.4	45.9	35.1	62.4	50.2	46.6	40.5
	Jun	1.0	42.1	55.7	45.8	34.2	46.1	76.7	44.1	22.7	38.7	33.4
	Jul	36.3	39.9	60.6	40.8	38.6	50.3	32.4	41.4	31.2	44.9	42.4
	Aug	35.1	31.0	60.0	57.2	37.2	44.9	27.3	33.5	20.3	39.6	38.6
	Sep	43.2	41.9	56.4	52.8	39.6	49.7	31.6	33.0	-21.0	42.7	41.3
	Oct	17.2	32.5	57.3	46.3	52.7	43.1	37.1	26.7	25.7	48.9	34.6
	Nov	30.8	35.6	58.1	63.1	48.2	44.1	38.7	35.3	26.7	43.0	39.3
	Dec	32.0	41.0	60.8	47.0	29.3	45.4	41.3	32.2	25.9	44.8	40.2
	Jan	23.4	39.2	66.4	44.1	27.1	52.8	31.3	19.3	19.3	41.8	38.2
	Feb	32.3	34.0	56.5	46.4	42.4	50.4	48.1	35.4	29.4	40.4	41.1
	Mar	37.0	38.6	58.2	50.4	43.8	50.5	39.3	37.7	19.4	46.4	42.1
	Average	28.6	37.4	58.5	48.3	38.3	47.0	38.6	34.7	22.0	43.1	38.6

Table 2.8: Monthly Non-Revenue Water by Service Centre (percent) (Continued)

Non-revenue water (Percent)		Gaborone	Molepolole Mochudi	Kanye Lobatse	Tsabong	Ghanzi	Francistown Selebi-Phikwe	Mahalapye Palapye	Serowe Letlhakane	Masunga Kasane	Maun	TOTAL
2022-23	Apr	39.4	39.0	58.2	39.9	25.0	56.4	46.3	41.1	36.8	40.4	42.3
	May	45.8	67.0	69.1	52.7	38.9	57.8	48.3	45.1	47.8	46.8	51.9
	Jun	34.4	52.0	66.7	52.7	34.7	54.1	42.5	42.8	46.9	48.8	47.6
	Jul	55.4	52.1	69.9	51.3	34.5	55.3	47.9	40.1	51.5	49.3	50.7
	Aug	33.6	52.5	66.2	53.3	43.8	51.2	41.3	46.9	45.0	47.2	48.1
	Sep	28.3	50.9	64.1	53.3	30.5	58.4	35.9	27.5	48.1	40.4	43.7
	Oct	49.4	52.7	63.3	46.3	42.1	56.0	44.4	38.8	41.9	39.9	47.5
	Nov	55.5	51.5	67.1	52.1	33.5	67.5	50.2	46.2	50.8	45.1	51.9
	Dec	61.4	56.9	74.6	50.3	38.1	65.0	50.6	42.7	53.6	44.9	53.8
	Jan	55.2	55.2	70.3	53.9	44.9	63.6	43.2	47.3	50.9	46.4	53.1
	Feb	49.0	53.8	67.6	57.3	36.5	65.0	48.8	41.0	51.0	43.6	51.4
	Mar	53.7	59.3	65.9	54.0	36.9	58.4	48.0	43.7	56.8	46.7	52.3
	Average	46.9	54.0	67.0	51.4	36.9	59.1	45.7	42.1	48.5	45.0	49.7
2023-24	Apr	39.8	61.8	50.5	60.2	25.0	44.8	36.1	65.0	40.9	52.2	54.3
	May	55.1	34.9	65.5	47.1	38.9	47.6	44.9	61.1	38.8	60.0	49.1
	Jun	50.0	42.4	67.6	57.4	37.6	56.3	44.7	67.1	39.2	52.5	48.0
	Jul	47.3	45.6	66.2	46.2	38.0	63.1	40.6	64.0	44.0	43.9	48.5
	Aug	49.7	43.1	67.7	45.9	47.1	54.5	43.3	56.8	43.7	52.2	52.4
	Sep	44.0	49.0	57.7	55.6	26.4	64.8	36.1	72.2	40.5	45.9	50.4
	Oct	40.4	47.5	63.4	49.4	44.9	65.9	51.5	63.5	45.2	45.3	49.0
	Nov	40.2	41.6	61.7	52.9	32.4	59.9	56.6	51.5	46.6	66.0	50.1
	Dec	49.7	39.0	63.6	48.1	38.5	64.8	56.1	67.3	42.4	28.7	47.3
	Jan	38.7	47.9	74.4	48.3	44.1	51.5	55.3	67.9	53.6	36.5	50.0
	Feb	38.0	39.0	64.2	54.9	49.7	53.0	50.4	58.0	53.9	39.2	52.6
	Mar	39.1	42.2	68.8	44.8	40.8	49.8	45.0	62.1	48.9	45.1	52.6
	Average	44.3	44.5	64.3	50.9	38.6	56.3	46.7	63.0	44.8	47.3	50.4
Overall average		37.2	43.2	62.9	49.0	36.7	49.5	41.9	43.5	37.4	43.0	44.1

Source: Water Utilities Corporation

Kanye-Lobatse SC shows the highest NRW for the whole period at 62.9 percent, followed by Francistown-Selibe Phikwe SC at 49.5 percent and Tsabong SC at 49.0 percent. The highest NRW recorded in a single month over the whole period is that 77.2 percent for Kanye-Lobatse in May 2020, followed by 76.7 percent for Mahalapye SC in June 2021, and 74.6 percent for Kanye-Lobatse SC in December 2023. NRW is generally increasing over the whole period.

2.8. Water from the rivers

This section examines the volumes of water extracted from the Okavango/ Thamalakane Rivers and the Chobe River for the period between 2017-18 and 2024-25, where data is available. Maun and Wenela Treatment Plants are along the Thamalakane River. Sepopa, Gumare, Shakawe, Mohembo, Seronga and Nokaneng Treatment Plants are on the Okavango River system.

2.8.1. Total annual extraction of water from the Rivers (Kilolitres)

Table 2.9: Total annual extraction Okavango/ Thamalakane (Kilolitres)

TOTAL (KL)	2017-18	2019-20	2020-21	2021-22	2022-23	2024-25
Maun Treatment Plant (Thamalakane)	1,910,130.0	-	1,123,890.0	1,481,329.0	427,480.0	-
Wenela Treatment Plant(Thamalakane)	192,244.0	-	-	-	-	-
Sepopa Treatment Works (Okavango)	-	-	-	192,758.4	97,346.0	74,183.0
Gumare Treatment Works (Okavango)	215,980.0	50,690.0	-	317,359.8	389,837.0	349,025.9
Nokaneng	-	-	-	57,699.0	49,740.7	59,696.9
Shakawe Treatment Plants(Okavango)	415,899.0	502,672.0	409,770.0	750,734.5	1,094,884.0	1,158,807.8
Mohembo Treatment Plant(Okavango)	5,476.0	167,684.0	126,849.0	146,737.1	101,995.4	311,302.7
Seronga Treatment Plant	-	92,820.0	207,480.0	230,859.0	249,572.0	241,016.1
TOTAL (KL)	2,739,729.0	813,866.0	1,867,989.0	3,177,476.8	2,410,855.1	2,194,032.4

Source: Water Utilities Corporation

No data for 2018-19 and 2023-24

(-) No data

Table 2.10: Total annual extraction Chobe River (Kilolitres)

Total (KL)	2017-18	2019-20	2021-22	2022-23	2024-25
Kasane Portable Plant	18,400.0	1,167,210.0	45,569.0	1,299,731.0	2,916,954.0
Kasane Old Plant	1,442,203.0	-	1,120,570.0	-	-
Kazungula Plant	347,400.0	488,163.0	544,580.0	710,313.0	52,703.6
Total	1,808,003.0	1,655,373.0	1,710,719.0	2,010,044.0	2,969,657.6

Tables 2.9 and 2.10 show the total annual extraction of water from the Okavango/ Thamalakane and the Chobe rivers, at various extraction points. (See Appendix 1 for monthly extraction volumes). Most of the extraction points on the Okavango and Thamalakane rivers (Shakawe, Gumare, Mohembo, Seronga and Nokaneng) show an increase in volumes of water extracted over the years. The highest extraction of water on the Okavango/Thamalakane Rivers over the whole period is that of Shakawe treatment plant followed by Maun treatment plant and Gumare Treatment Works. The highest extraction of water on the Chobe River is at the Kasane Portable Plant. Kasane Portable Plant and Kazungula Plant extraction points show an increasing volume of water extracted over the years, while Kasane Old Plant shows reduction in the volume of water extracted during the period.

2.8.2. Average river extraction per month by year (Kilolitres)

Table 2.11: Average monthly extraction Okavango/ Thamalakane Rivers (Kilolitres)

Monthly Ave	2017-18	2019-20	2020-21	2021-22	2022-23	2024-25
Maun Treatment Plant (Thamalakane)	159,177.5	-	112,389.0	123,444.1	106,870.0	-
Wenela Treatment Plant(Thamalakane)	16,020.3	-	-	-	-	-
Sepopa Treatment Works (Okavango)	-	-	-	16,063.2	8,112.2	11,412.8
Gumare Treatment Works (Okavango)	17,998.3	4,224.2	-	26,446.6	32,486.4	53,696.3
Nokaneng	-	-	-	4,808.3	4,145.1	9,184.1
Shakawe Treatment Plants(Okavango)	34,658.3	41,889.3	34,905.5	62,561.2	91,240.3	178,278.1
Mohembo Treatment Plant(Okavango)	5,476.0	13,973.7	12,599.9	12,228.1	8,499.6	47,892.7
Seronga Treatment Plant	-	15,470.0	17,606.4	19,238.3	20,797.7	37,079.4
Total	233,330.4	75,557.2	177,500.8	264,789.8	272,151.3	337,543.4

Source: Water Utilities Corporation

No data for 2018-19 and 2023-24

(-) No data

Table 2.12: Average monthly extraction Chobe River (Kilolitres)

Monthly Average	2017-18	2019-20	2020-21	2021-22	2022-23	2024-25
Kasane Portable Plant	2,300.0	97,267.5	-	11,392.3	108,310.9	243,079.5
Kasane Old Plant	120,183.6	-	-	93,380.8	-	-
Kazungula Plant	28,950.0	40,680.3	-	45,381.7	59,192.8	4,392.0
Total	151,433.6	137,947.8	-	150,154.8	167,503.7	247,471.5

Source: Water Utilities Corporation

No data for 2018-19 and 2023-24

(-) No data

Tables 2.11 and 2.12 show the average monthly volumes of water extracted for the extraction points on the Okavango/Thamalakane Rivers and the Chobe River. The highest average monthly extraction volumes were consistently recorded at Maun Treatment Plant, followed by Shakawe Treatment Plant and Gumare Treatment Plant. Shakawe Treatment Plant shows increasing extraction volumes, eventually recording the single highest monthly average extraction of water in 2024-25. On the Chobe River, Kasane Portable Plant recorded the highest volumes of extracted water, while Kasane Old Plant and Kazungula Plant showed a decrease in the amount of water extraction. The volume of water extracted from the Chobe River over the whole period showed a steep increase in the total amount of water extracted.

2.9. Imported water

Botswana augments national water production with imports of water from South Africa's Molatedi Dam and the Middlepits Transboundary Water Supply. Table 2.13 shows the total monthly water imported from the two water schemes.

Table 2.13: Total imported water (Kilolitres)

	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
April	631,759.0	398,352.0	353,706.0	-	341,639.0	889,905.0
May	661,805.0	266,807.0	205,629.0	-	377,507.0	654,368.0
June	538,149.0	289,762.0	281,692.0	-	402,120.0	853,679.0
July	353,396.0	381,971.0	313,065.0	-	381,157.0	824,173.0
August	572,928.0	244,377.0	316,410.0	-	424,849.0	822,901.0
September	395,351.0	336,738.0	258,768.0	-	394,713.0	987,283.0
October	304,673.0	260,546.0	373,185.0	-	101,329.0	751,383.7
November	302,312.0	342,471.0	381,411.0	-	242,231.0	791,733.7
December	291,348.0	318,379.0	255,930.0	-	399,035.0	801,618.0
January	341,483.0	193,793.0	248,185.0	-	343,915.0	603,807.0
February	281,618.0	261,813.0	258,097.0	-	352,912.0	375,373.0
March	271,153.0	175,652.0	195,393.0	-	424,883.0	342,719.0
Total	4,945,975.0	3,470,661.0	3,441,471.0	-	4,186,290.0	8,698,943.3

Source: Water Utilities Corporation

No data for 2022-23

(-) No data

While water import volume remained stable over the 2019/20 to 2023/24 years, it more than doubled with a spike in volumes between 2023/24 and 2024/25. This was primarily driven by extreme drought conditions that exhausted domestic surface water reserves and necessitated the activation of high-volume regional supply agreements.

The highest import volume in a single month was recorded in September 2024. **Table 2.14** shows the total imported volumes of water for Molatedi Dam and Middlepits Transboundary Water Supply for the 5 years. Molatedi Dam's water supply is the highest, supplementing the Greater Gaborone area.

Table 2.14: Total imported water (kilolitres)

	5 year Total	Average annual
Middlepits Transboundary Water Supply (RSA)	782,458.0	156,491.6
Molatedi Dam Supply to Gaborone	17,703,640.7	3,540,728.1
Molatedi Dam Supply to Mochudi	6,257,241.7	1,251,448.3
Total	24,743,340.3	4,948,668.1

3. NATURAL DISASTERS

3.1. Introduction

This chapter examines current statistics and trend analysis on natural disasters, with a specific focus on the incidents and impacts of floods, storms, and heavy rains. The analysis further evaluates the emergency interventions and mitigation measures responses implemented to manage the resulting impacts of these natural hazards.

Natural disasters represent critical disruptions to societal functioning, occurring when environmental forces such as floods, storms, and heavy rains exceed a community’s capacity to cope with the resulting human, economic, and environmental losses (UNDRR, 2024). While natural hazards are the physical events themselves, they transform into disasters through their interaction with human activities and systemic vulnerabilities (Chikuta et al. 2024). The National Disaster Management Office (NDMO) coordinates Botswana’s multi-tiered disaster risk reduction framework, monitoring a broad spectrum of prevalent threats including drought, wildfires, transport accidents, and both human and animal epidemics. While the National Policy on Disaster Management (1996, Reviewed 2022) encompasses these diverse risks, this report specifically focuses on floods, storms, strong winds, and heavy rains due to the availability of statistical data for these categories.

3.2. Floods and Storms Incidences, Impacts/Damages and Responses

Trends on flood and storm occurrence by year, location, number of households and individuals affected, and assistance given is presented in this sub-section. The United Nations Office for Disaster Risk Reduction (UNDRR) defines a flood as the overflowing of the normal confines of a stream or other body of water, or the accumulation of water over areas that are not normally submerged (UNDRR, 2024). While a storm is defined as the atmospheric disturbances characterized by high winds, heavy precipitation (such as rain, hail, or snow), and often thunder and lightning. In Botswana, the frequent occurrence of storms and floods typically results in significant environmental and infrastructural damage.

3.2.1. Floods

Table 3.1 depicts flood incidence and impact by village and district for the 2019 – 2023 period. The 2020 flood season disproportionately affected Tonota district, which recorded the highest localized impact of the review period. A total of 301 individuals from 58 households were affected, with 8 damaged dwellings attributed to floods (Figures 3.1 & 3.2). Subsequently, a total of 6 tents and 37 food baskets were issued to the victims to provide relief. Second after Tonota in terms of the floods impacts was Tutume district which recorded from Tutume village alone, a total of 39 households affected, from which 118 individuals were affected/displaced in the year 2019. Only one damaged dwelling was attributed to floods in this instance. Goodhope district was the least affected by floods during the period of review with only 3 households affected and two damaged dwellings attributed to floods in 2023, resulting in the displacement of 15 individuals.

Table 3.1: Flood Incidence & Impact by Village and District, 2019 – 2023

Incident	Year	District	Villages	Impact/Damages			Assistance Given	
				No. of damaged dwellings	No. of Households affected	No. of individuals affected	Tents	Food Baskets
Floods	2019	Kanye	Kanye	8	23	27	8	3
		North East	Masunga	3	30	84	3	4
		Serowe	Serowe	6	26	40	6	12
		Southern	Digawana Mogojogojo Lorwana Gopong	10	31	98	10	8
		Tonota	Shashemooke Jamataka	1	10	39	1	0
		Tutume	Tutume	1	39	118	1	9
	2020	Tonota	Tonota Foley	8	58	301	6	37
	2023	Goodhope	Metlobo Magoriapitse Pitshanemolopo	2	3	15	3	0
		Kanye	Kanye	1	6	31	2	0
		Moshupa	Moshupa	9	16	28	18	0

Source: National Disaster Management Office

Figure 3.1: Number of damaged dwellings attributed to Floods by District, 2019 – 2023

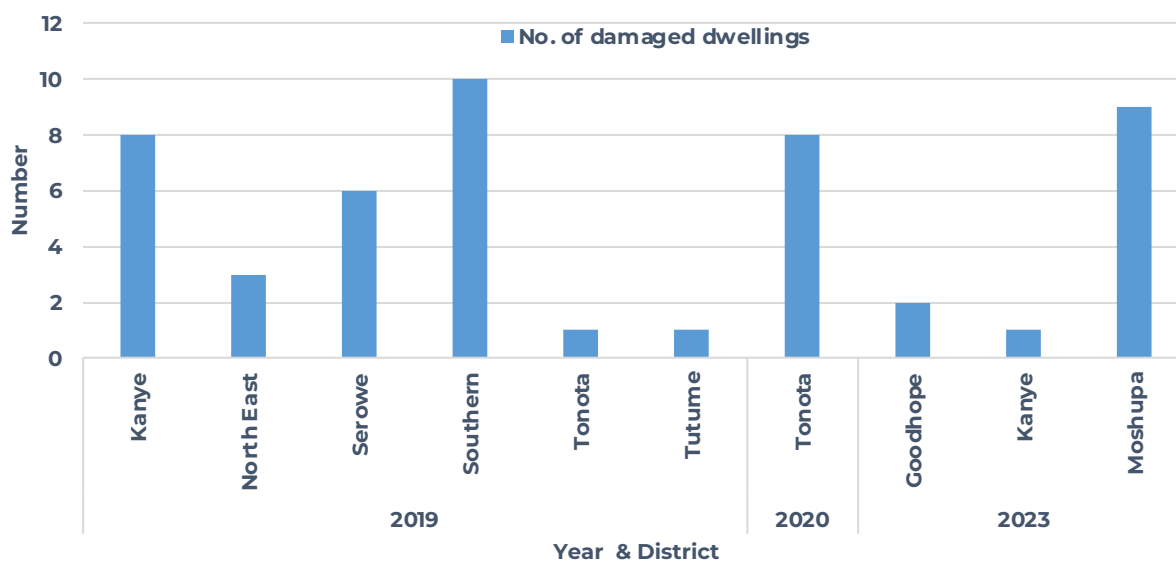
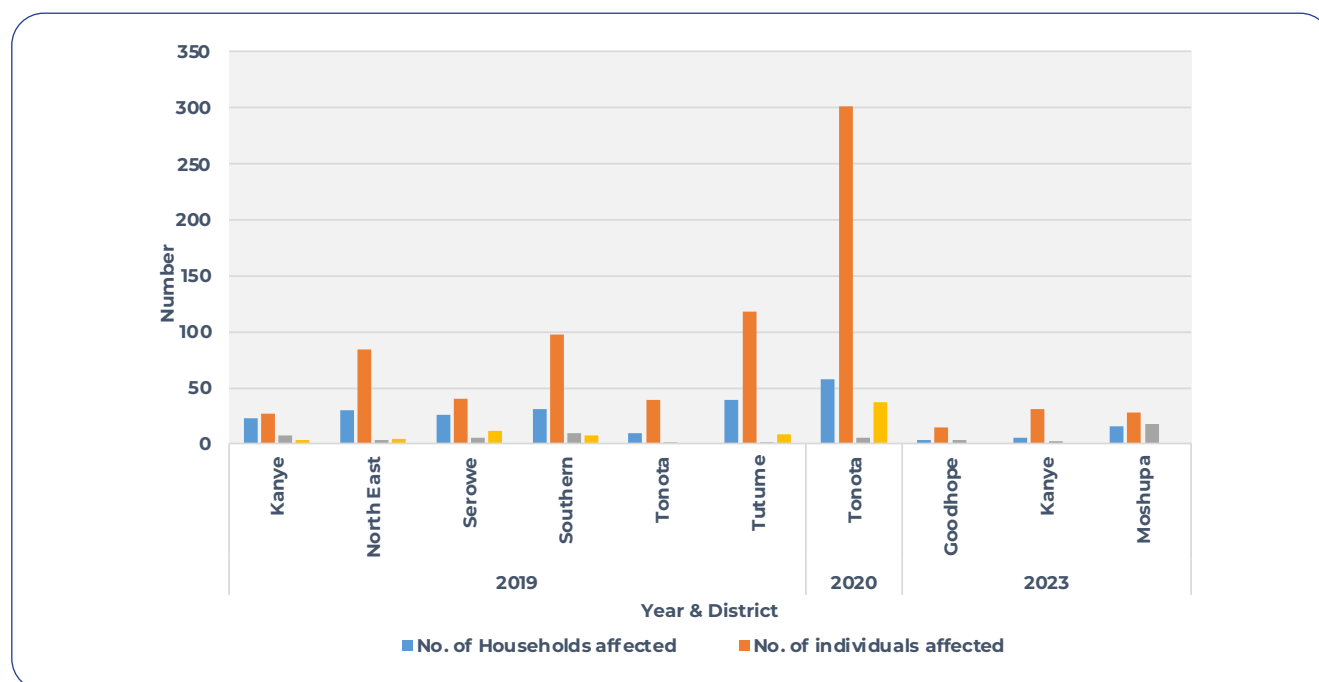


Figure 3.2: Impact of Floods & assistance given by District, 2019 – 2023

3.2.2. Storm and Strong Wind Incidents

During the 2019–2021 period, storms and hailstorms collectively impacted 128 households during the review period (**Table 3.2** and **Figure 3.3**). The most severe infrastructural damage occurred in 2021 in Letlhakeng District, where 27 dwellings were damaged, representing the highest physical shelter loss in a single event. While this resulted in the displacement of 128 individuals, the Hukuntsi hailstorm of the same year recorded the highest overall human impact, affecting 180 individuals. Additionally, the North East District experienced a high concentration of victims in 2019, specifically in Kalakamati, Gungwe, and Zwenshambe, where 41 households and 165 individuals were impacted. Relief interventions for these areas included the provision of temporary shelters (3 tents) and seven emergency food rations.

Table 3.2 further shows that strong winds constituted a smaller portion of the total disaster incidents compared to storm events. The most significant wind-related impact was recorded in 2021 in the Mogoditshane District, specifically in the village of Gabane. This event resulted in the damage of 7 dwellings and impacted 10 households, affecting a total of 50 individuals. The relief efforts focused on the immediate provision of seven tents and five food baskets to support affected residents (**Figure 3.4**).

Table 3.2: Storm and Strong Wind Incidents, Impacts & Responses by District, 2019 – 2021

Incident	Year	District	Villages	Impact/Damages			Assistance Given	
				No. of damaged dwellings	No. of Households affected	No. of Individuals affected	Tents	Food Baskets
Strong Winds	2021	Mogoditshane	Gabane	7	10	50	7	5
Hailstorm	2021	Hukuntsi	Hukuntsi	0	35	180	0	19
Storm	2019	Kgatleng	Bokaa	1	4	18	1	1
		North East	Kalakamati Gungwe Zwenshambe	3	41	165	3	7
		Tonota	Tonota Makobo	2	8	34	2	2
	2020	Hukuntsi	Lehututu	2	9	31	2	3
		Selebi Phikwe	Selibe phikwe	3	5	18	3	3
	2021	Letlhakeng	Sorilatholo Salajwe Motokwe Khudumelapye Botlhapatlou	27	26	128	27	26

Source: National Disaster Management Office

Figure 3.3: Number of people whose damaged dwellings were attributed to Storms, Hailstorm and Strong Winds by District, 2019 – 2021

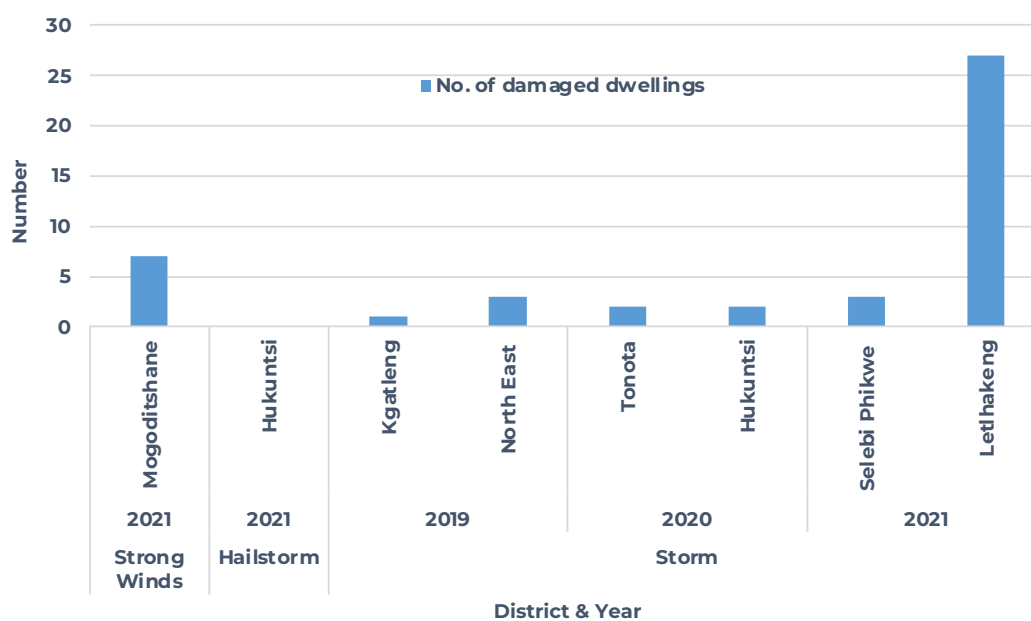
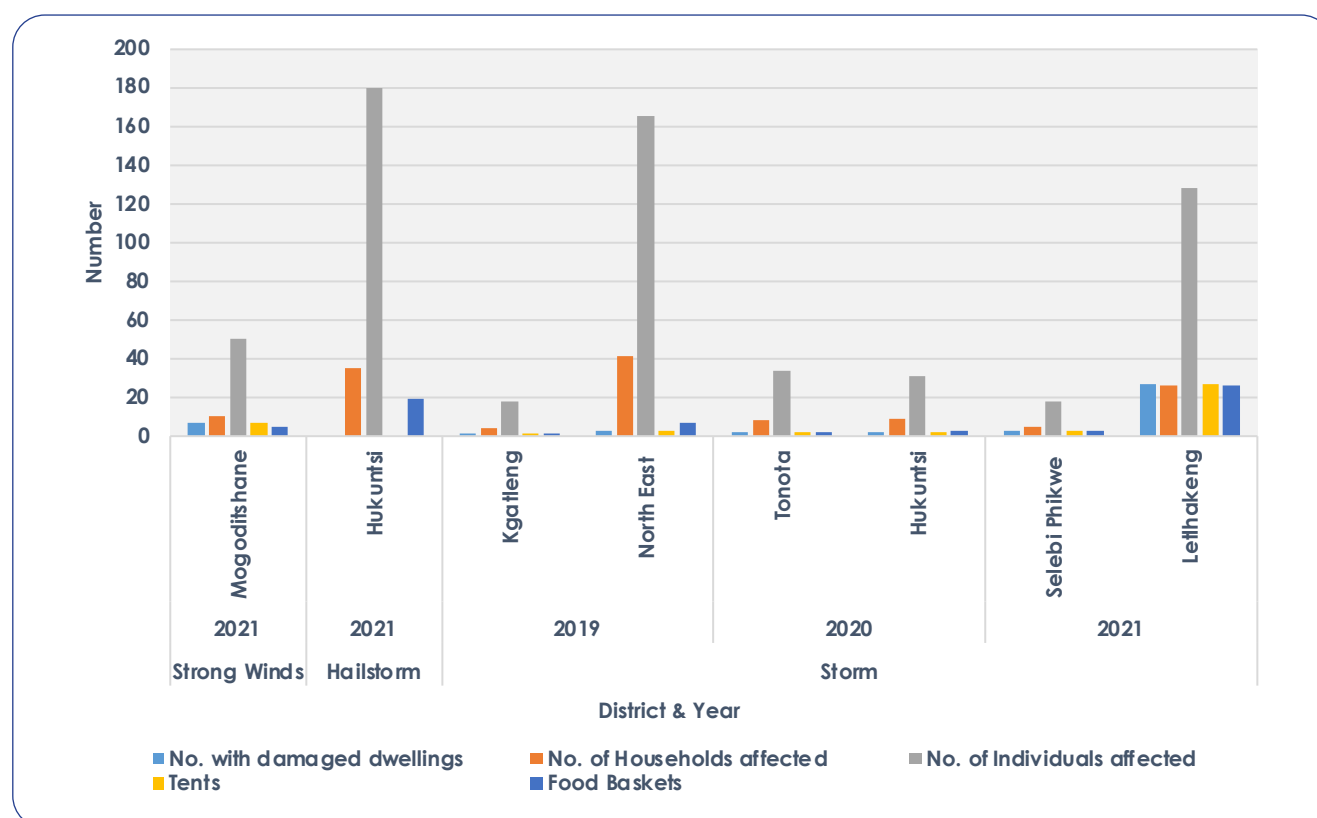


Figure 3.4: Storm and Strong Wind Impacts & Responses by District, 2019 – 2021

3.2.3. Heavy Rains

The analysis of the impacts/damages caused by heavy rains reveals that between 2021 and 2024, the number of damaged dwellings attributed to heavy rains totaled 94 across various districts (Table 3.3 and Figure 3.5). The impact was most severe in 2021, accounting for over half of the total damaged dwellings during the period, with Boteti (22) and Ghanzi (12) being the hardest-hit districts. The number of damaged dwellings surged again in 2024, particularly in Tonota (17), after dropping to a minimum in 2023.

Table 3.3 further shows that during the 2021-2024 period, Mahalapye district experienced the highest number of households (110) affected by heavy rains in 2021, resulting in the displacement of 617 individuals. Subsequently, a total of 10 tents and 15 food baskets were issued to the victims to provide relief. In 2024 alone, a total of 120 households were affected by heavy rains, with 68 in Tonota district, 33 in Mahalapye district, 14 in Charleshill, and 5 in Palapye district. (**Table 3.3** and **Figure 3.6**)

Table 3.3: Heavy Rain Incidents & Impacts by District, 2021 – 2024

Incident	Year	District	Villages	Impact/Damages			Assistance Given	
				No. of damaged dwellings	No. of Households affected	No. of Individuals affected	Tents	Food Baskets
Heavy Rains	2021	Mahalapye	Mokgenene	10	110	617	10	15
		Kanye	Kanye	2	49	65	2	1
		Boteti	Letlhakane Mmatshumo Makalamabedi Kedia	22	54	286	22	5
		Palapye	Mogapinyana	2	15	10	2	0
		Bobirwa	Mathathane Molaladau Tsetsebjwe	3	29	105	3	7
		Ghanzi	Ghanzi	12	25	38	12	25
	2023	North East	Tsamaya Siviya	5	23	98	5	0
		Goodhope	Ramatlabama Mokgomane	1	27	123	11	0
	2024	Mahalapye	Mahalapye Otse	5	12	27	5	6
		Charleshill	Charleshill	3	14	63	3	7
		Mahalapye	Tupya Maletse Kudumatse	10	21	121	10	18
		Palapye	Lesenepole Mapotosane Majewa	2	5	22	2	2
		Tonota	Mabesekwa	17	68	404	17	10

Source: National Disaster Management Office

Figure 3.5: Number of damaged dwellings attributed to Heavy Rains by District, 2021 – 2024

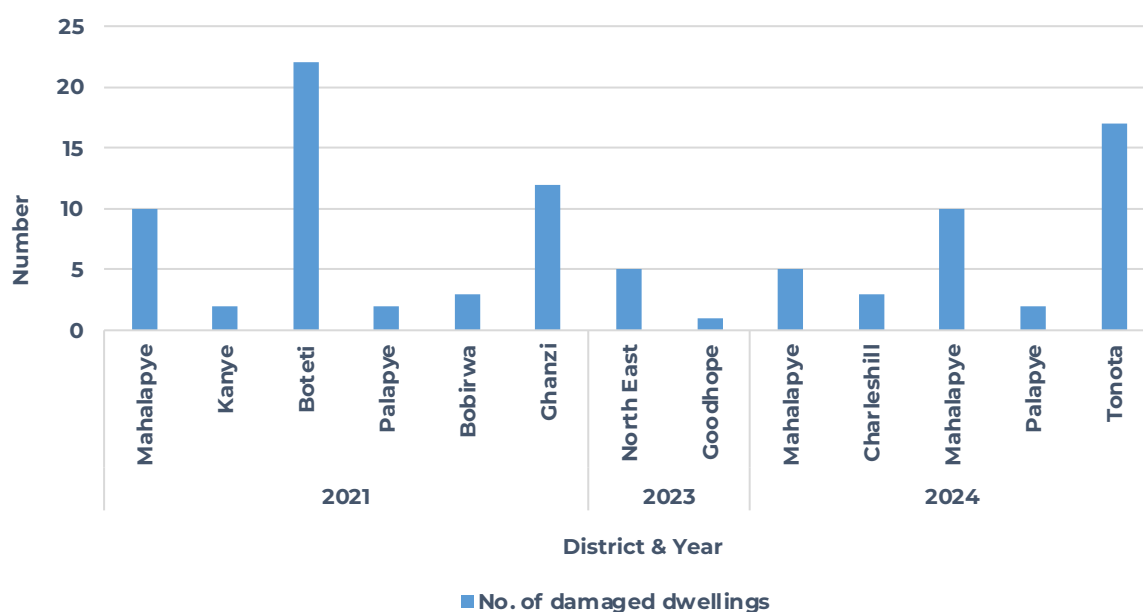
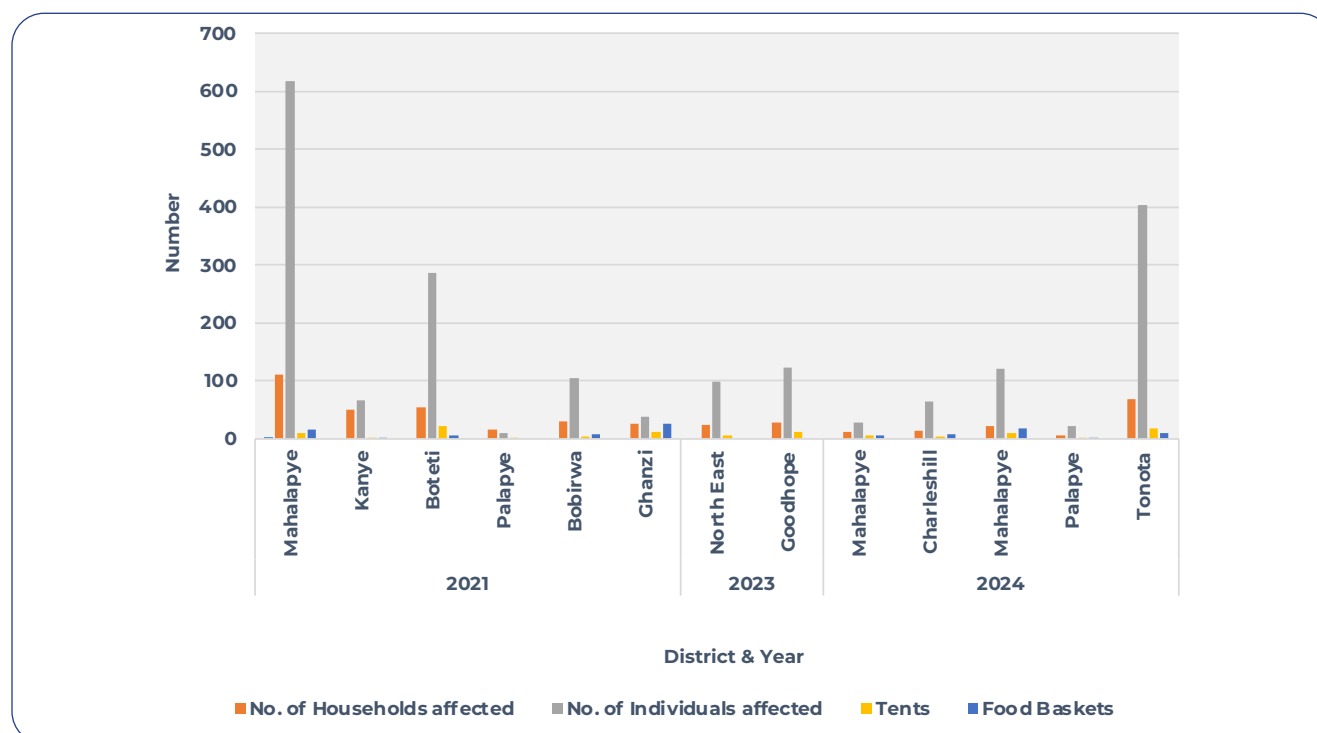


Figure 3.6: Heavy Rains Incidents & Impacts by District, 2021 – 2024

3.2.4. Deaths attributed to disasters

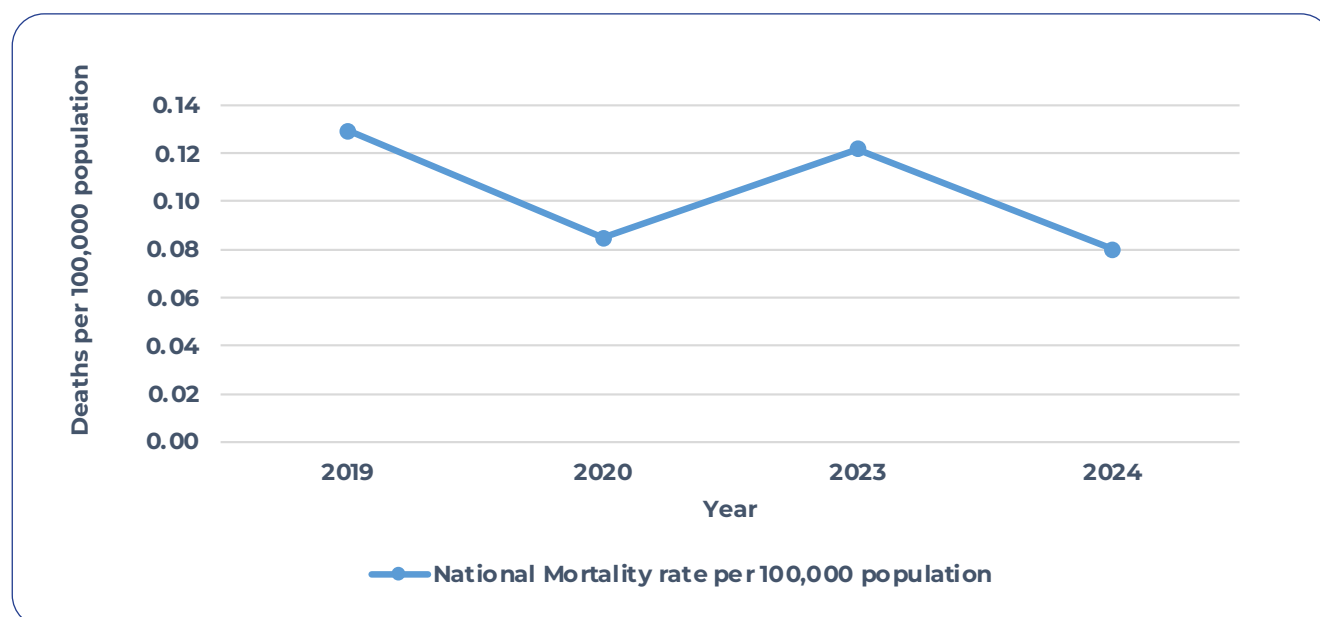
This section details disaster-related mortality in Botswana from 2019 to 2024, disaggregated by geographic locality and hazard type. This mortality analysis is in accordance with the UNDRR Sendai Framework reporting guidelines, particularly UNDRR Sendai Framework Target A, which aims for a substantial reduction in disaster mortality per 100,000 population.

Table 3.4 depicts that between 2019 and 2024, Botswana recorded 10 disaster-related deaths, with flooding identified as the most fatal hazard constituting 50% of all deaths. The National Mortality Rate was the highest in 2019 at 0.13 per 100,000 population followed by 0.12 per 100,000 recorded in 2023. The data reflects a relatively stable national risk profile that fluctuates primarily during high-intensity outlier events. Despite the low national aggregate, Mahalapye and Tonota Districts emerged as the primary geographic hotspots for vulnerability, with Tonota being the only district to record fatalities across all three hazard types- storms, floods, and heavy rains. In 2023, a total of three deaths in Mahalapye were attributed to floods.

Table 3.4: Deaths attributed to disasters, 2019 - 2024

Year	District	Village	Hazard Type	No.of deaths per locality	Total National Deaths	National Mortality per 100,000 population
2019	Tonota	Borolong	Storm	1	3	0.13
	Serowe	Serowe	Storm	1		
	North East	Zwenshambe	Storm	1		
2020	Tonota	Foley	Floods	2	2	0.08
2023	Mahalapye	Mahalapye	Floods	3	3	0.12
2024	Tonota	Tonota	Heavy Rains	2	2	0.08
Total				10	10	

Source: National Disaster Management Office

Figure 3.7: National Mortality trend per 100,000 population, 2019 – 2024

3.2.5. Destroyed or damaged health facilities attributed to disasters

The destruction or damage of health facilities due to disasters refers to the physical compromise, structural impairment, or functional loss of hospitals, clinics, and medical infrastructure resulting from natural or anthropogenic hazards (UNDRR, 2017; WHO, 2019). Such failures in critical infrastructure interrupt the delivery of essential healthcare services, thereby diminishing a community's resilience and its capacity to provide necessary medical care.

Table 3.5 depicts the number of destroyed or damaged health facilities attributed to disasters for the period 2019 – 2023. It is evident from the table that between 2019 and 2023, Botswana's health infrastructure was impacted by two discrete natural hazards that resulted in the damage or destruction of facilities within the Southern and Goodhope districts. These separate events collectively affected 131 individuals. In 2019, flooding in Lorwana (Southern District) resulted in the damage of one facility, affecting 8 individuals. In 2023 heavy rains damaged one health facility in Goodhope resulting in 123 individuals affected. This highlights specific vulnerabilities of health infrastructure to different types of natural hazards across districts.

Table 3.5: Destroyed or damaged health facilities attributed to disasters, 2019 - 2023

Year	District	Village	Hazard Type	No. of Damaged / Destroyed Facilities	No. of Individuals affected
2019	Southern	Lorwana	Floods	1	8
2023	Good Hope	Good Hope	Heavy Rains	1	123
Total				2	131

Source: National Disaster Management Office

3.2.6. Destroyed or damaged education facilities attributed to disasters

The destruction or damage of education facilities due to disasters refers to the physical impact on schools, universities, and vocational training centers resulting from natural or anthropogenic hazards (UNDRR, 2017; UNESCO, 2020). This includes structural collapse, loss of roofs, or water damage that renders the buildings unsafe or unusable for learning. Such damage causes a direct disruption of educational services, which can lead to learning loss, reduced enrollment, and the loss of safe spaces for children.

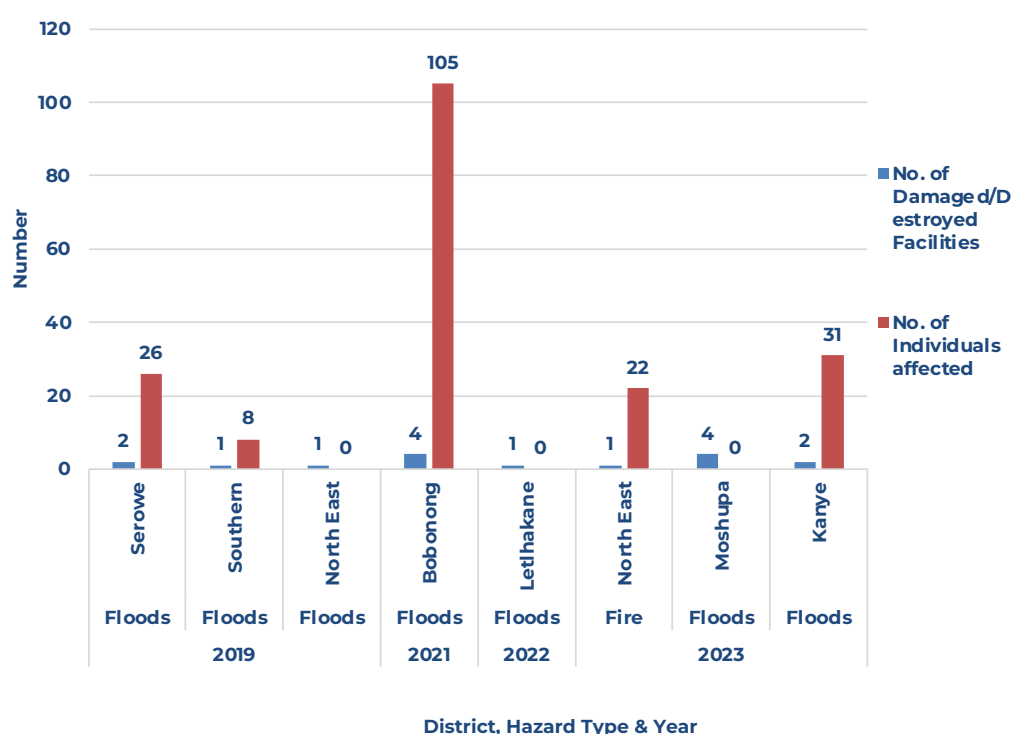
Table 3.6 and **Figure 3.8** present a number of destroyed or damaged facilities attributed to disasters between 2019 and 2023. The results show that between 2019 and 2023, Botswana experienced a series of natural hazards that resulted in the damage or destruction of 16 educational facilities, impacting a total of 192 individuals. Flooding was the predominant hazard, accounting for the majority of incidents across multiple districts, including Serowe, Southern, North East, Bobonong, Letlhakane, Moshupa, and Kanye. A notable event includes the 2021 floods in Mmadinare village, Bobonong District, which impacted 105 individuals. Additionally, in Masunga in 2023 fire alone affected 22 individuals, further highlighting the diverse vulnerabilities of educational infrastructure.

Table 3.6: Destroyed or damaged education facilities attributed to disasters, 2019 - 2023

Year	District	Village	Hazard Type	No. of Damaged/ Destroyed Facilities	No. of Individuals affected
2019	Serowe	Serowe	Floods	2	26
	Southern	Lorwana	Floods	1	8
	North East	Gulubane	Floods	1	0
2021	Bobonong	Mmadinare	Floods	4	105
2022	Letlhakane	Sowa	Floods	1	0
2023	North East	Masunga	Fire	1	22
	Moshupa	Moshupa	Floods	4	0
	Kanye	Kanye	Floods	2	31
Total				16	192

Source: National Disaster Management Office

Figure 3.8: Destroyed or damaged education facilities attributed to disasters, 2019 - 2023



3.2.7. Disruptions to other basic services attributed to disasters

The number of disruptions to other basic services attributed to disasters is a Sendai Framework (Indicator D-8) and SDG metric measuring the frequency with which essential non-educational/non-health services (e.g., water, power, transport, ICT, sewage) are interrupted due to hazardous events (UNDRR, 2017; UNSD, 2024)). It quantifies the functional loss of infrastructure, rather than just physical damage, showing the immediate impact on community normality.

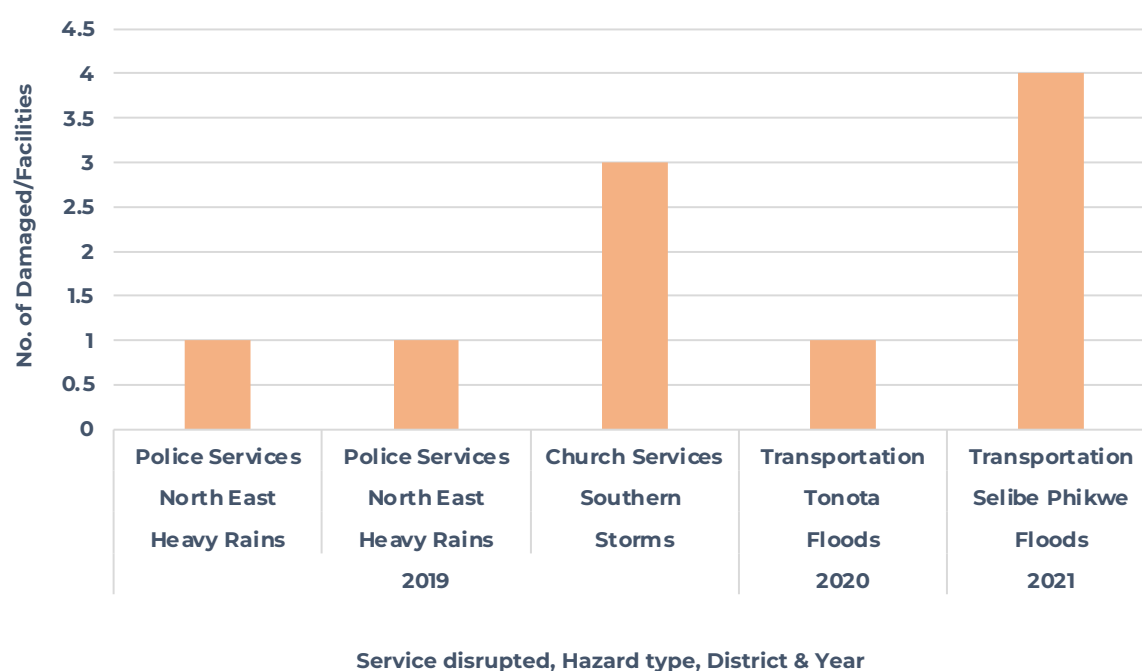
Table 3.7 depicts the number of disruptions to other basic services attributed to disasters by district, year, hazard type, and type of service disrupted from 2019 to 2021. It is evident from the table that during the period under review, Botswana experienced 10 discrete disruptions to basic services (excluding health and education) caused by various natural hazards across several districts. While 2019 saw standalone impacts on police and church services due to heavy rains and storms, subsequent years shifted toward transportation failures. Specifically, flooding in 2020 and 2021 disrupted transit services in Tonota and Selibe Phikwe, with Selibe Phikwe recording the highest impact of four facilities damaged in a single event. In Tonota, the impact was largely seen in disrupted services as flooded culverts and washed-out gravel roads made routes inaccessible. Conversely, Selebi-Phikwe experienced damaged facilities, including structural hits to the local bus rank, Council and the Central Transport Organisation (CTO) maintenance depots, and loading zones.

Table 3.7: Number of disruptions to other basic services attributed to disasters, 2019 - 2021

Year	District	Village	Hazard Type	No. of Damaged/ Destroyed Facilities	Type of Service disrupted
2019	North East	Zwenshambe	Heavy Rains	1	Police Services
		Gulubane	Heavy Rains	1	
	Southern	Lorwana	Storms	3	Church Services
2020	Tonota	Foley	Floods	1	Transportation
2021	Selibe Phikwe	Selibe Phikwe	Floods	4	Transportation
Total				10	

Source: National Disaster Management Office

Figure 3.9: Disruptions to other basic services attributed to disasters, 2019 - 2021



3.3. Adoption and implementation of local disaster risk reduction strategies

Botswana has adopted decentralized District Disaster Management Plans to address localized vulnerabilities, though implementation is often hampered by technical capacity gaps and a historical focus on reactive response (NDMO, 2022; UNDRR, 2022). These strategies aim to harmonize local action with the National Disaster Risk Management Framework to shift toward proactive risk mitigation across all sectors. This section presents statistics on the adoption and implementation of local disaster risk reduction strategies during the years 2019 – 2024. The implementation of the local disaster risk reduction strategies is done in line with National Policy on Disaster Management (1996) and the National Disaster Risk Management Plan (2021–2025).

Table 3.8 shows that Botswana saw a steady increase in the local adoption of disaster risk reduction (DRR) strategies, with implementation rates doubling from 25.0% to 50.0% from 2019 to 2024. The number of participating local authorities rose from 9 to 18, extending coverage from 158 villages to 275 over the five-year period. While this progress reflects a strong alignment with national frameworks, the current 50.0% adoption rate indicates that half of the country's 36 district councils have yet to fully implement these essential protocols.

Table 3.8: Percentage of local governments that adopted and implemented local disaster risk reduction strategies in line with national strategies, 2019 – 2024

Year	District	No. of District Councils / Local Authorities	No. of Villages	% of Districts with adopted & implemented DRR strategies
2019	Chobe	1	9	25
	Jwaneng	1	1	
	Charleshill	1	8	
	Hukuntsi	1	4	
	North East	1	43	
	Tutume	1	31	
	Kgatleng	1	1	
	Southern	1	60	
	Selibe Phikwe	1	1	
	Total	9	158	
2020	Chobe	1	9	27.8
	Jwaneng	1	1	
	Charleshill	1	8	
	Hukuntsi	1	4	
	North East	1	43	
	Tutume	1	31	
	Kgatleng	1	23	
	Southern	1	60	
	Selibe Phikwe	1	1	
	Gaborone	1	1	
	Total	10	181	

Table 3.8: Percentage of local governments that adopted and implemented local disaster risk reduction strategies in line with national strategies, 2019 – 2024 (Continued)

Year	District	No. of District Councils / Local Authorities	No. of Villages	% of Districts with adopted & implemented DRR strategies
2022	Chobe	1	9	33.3
	Jwaneng	1	1	
	Charleshill	1	8	
	Hukuntsi	1	4	
	North East	1	43	
	Tutume	1	31	
	Kgatlang	1	23	
	Southern	1	60	
	Selibe Phikwe	1	1	
	Gaborone	1	1	
	Lobatse	1	1	
	Mahalapye	1	39	
	Total	12	221	
2023	Chobe	1	9	44.4
	Jwaneng	1	1	
	Charleshill	1	8	
	Hukuntsi	1	4	
	North East	1	43	
	Tutume	1	31	
	Kgatlang	1	23	
	Southern	1	60	
	Selibe Phikwe	1	1	
	Gaborone	1	1	
	Lobatse	1	1	
	Mahalapye	1	39	
	Palapye	1	17	
	Ramotswa	1	3	
	Tlokweng	1	1	
	Boteti	1	11	
	Total	16	253	

Table 3.8: Percentage of local governments that adopted and implemented local disaster risk reduction strategies in line with national strategies, 2019 – 2024 (Continued)

Year	District	No. of District Councils / Local Authorities	No. of Villages	% of Districts with adopted & implemented DRR strategies
2024	Chobe	1	9	50
	Jwaneng	1	1	
	Charleshill	1	8	
	Hukuntsi	1	4	
	North East	1	43	
	Tutume	1	31	
	Kgatleng	1	23	
	Southern	1	60	
	Selibe Phikwe	1	1	
	Gaborone	1	1	
	Lobatse	1	1	
	Mahalapye	1	39	
	Palapye	1	17	
	Ramotswa	1	3	
	Tlokweng	1	1	
	Boteti	1	11	
	Fracistown	1	1	
	Tsabong	1	21	
	Total	18	275	

Note: Total number of district Councils/local authorities in Botswana= 36

Source: National Disaster Management Office

4. WILDLIFE STATISTICS

The purpose of this chapter is to provide and discuss reliable statistics and trends on fauna (animal life), predominantly mammals and birds. It does that by presenting the incidents of poaching, mortality statistics, problem animal control incidents, and fish statistics for the period 2020 - 2024. Some of the indicators of importance to environmental statistics not covered due to data unavailability include, among others, hunting licenses and quotas, population estimates and densities, and animal biomass.

Botswana's wildlife is a vital economic pillar, supporting the tourism industry and providing essential rural livelihoods. To safeguard these assets, the government has implemented several strategic conservation measures, including the Community-Based Natural Resource Management (CBNRM) Policy of 2007, the designation of 17% of national land as protected areas, and the establishment of dedicated Anti-Poaching and Research units within the Department of Wildlife and National Parks (DWNP). Enforcement is further bolstered by the joint operations of the DWNP and the Botswana Defence Force (BDF), alongside the implementation of strict hunting quotas (Dipotso et al. 2022).

Despite these robust institutional efforts, wildlife remains under significant pressure from human encroachment and illegal hunting. Poaching persists as a means of food security and as a source of illicit income from the ivory trade, leading to elevated mortality rates among key species. Consequently, the systematic documentation of wildlife statistics is critical; it provides the empirical basis for monitoring and evaluation, ensuring that national policies and conservation programs are responsive to emerging environmental threats (UNODC, 2024).

4.1. Poaching

Poaching is defined as the unauthorized killing and capture of wildlife outside of regulated seasons or without valid permits, a practice strictly prohibited by both domestic statutes and international conventions. At the international level, these illegal environmental activities are recognized as a primary driver of biodiversity loss, resulting in the rapid depletion of vulnerable species populations (CBD, 2022). Recent analysis indicates that commercial poaching remains the most significant threat due to its unsustainable scale and integration into global illicit markets, with megafauna, specifically elephants-frequently being the primary targets (UNODC, 2024).

This section evaluates the trends and distribution of national poaching cases from 2020 to 2024, examining the frequency of these occurrences by species and district.

4.1.1. Poaching Incidents

Incidents of poaching at national and district levels in the period 2020 to 2024 are presented in **Tables 4.1, 4.1a - 4.1h**, and **Figure 4.1**.

National poaching statistics from 2020 to 2024 reveal a total of 824 recorded incidents, characterized by a significant peak of 199 cases in 2020 followed by a period of fluctuation that remains above the 2022 low of 113 incidents. The analysis identifies Kudu (130), Gemsbok (90), and Impala (79) as the most frequently targeted species over the five-year term (Table 4.1 & Figure 4.1). Notably, the profile of poaching is shifting: while certain species like Pangolin saw a peak of 23 cases in 2022 before declining to 11 in 2024, there is a concerning recent surge in Elephant poaching, which reached a five-year high of 33 incidents in 2024. This shift in trends indicates that while focused conservation and law enforcement for certain high-profile species are proving effective, the nature of poaching is changing. The poaching pressure is currently pivoting toward larger mammals and consistent bushmeat species like Kudu and Gemsbok.

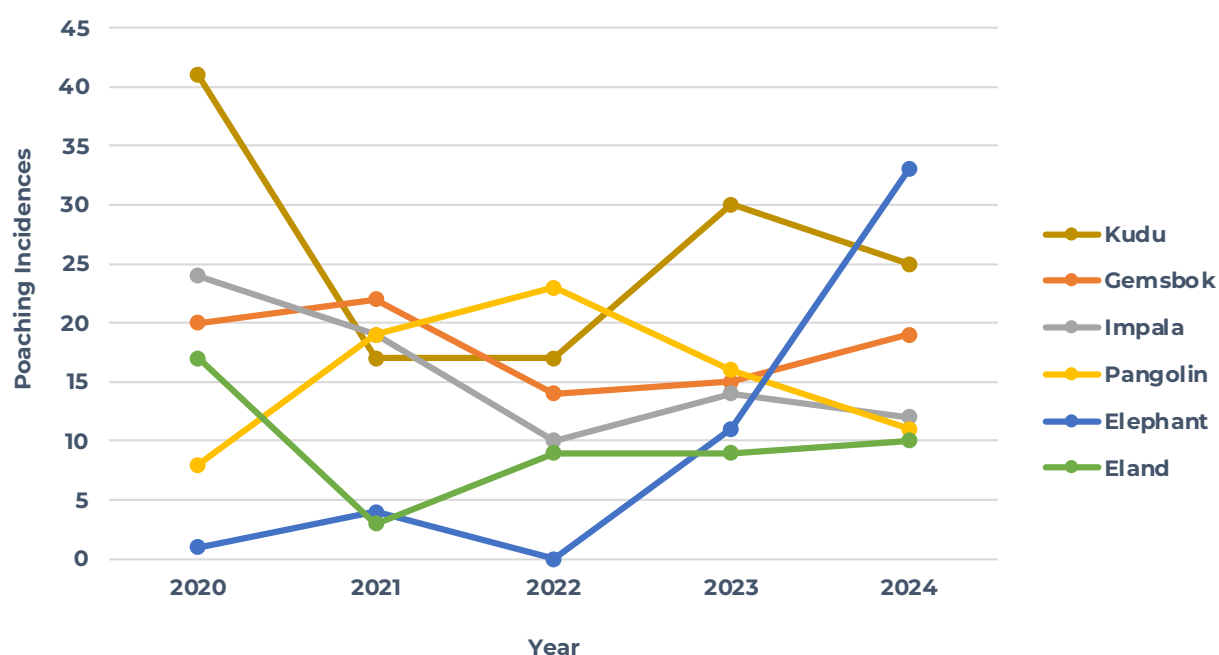
Table 4.1: National Poaching Statistics (2020 - 2024)

Species	2020	2021	2022	2023	2024	Total
Kudu	41	17	17	30	25	130
Gemsbok	20	22	14	15	19	90
Impala	24	19	10	14	12	79
Pangolin	8	19	23	16	11	77
Elephant	1	4	0	11	33	49
Eland	17	3	9	9	10	48
Python	6	4	3	9	7	29
Buffalo	16	6	4	1	1	28
Wildebeest	6	4	1	7	7	25
Duiker	8	6	2	7	1	24
Warthog	9	3	2	6	4	24
Fish	1	3	2	8	8	22
Lion	5	3	6	3	4	21
Steenbok	5	4	2	5	5	21
Giraffe	4	1	3	6	4	18
Zebra	2	3	2	5	4	16
Bush buck	0	0	0	13	0	13
Ostrich	2	3	3	3	0	11
Bell's hinge back tortoise	0	0	0	0	9	9
Ant-bear	5	0	0	1	2	8
Guinea fowl	1	3	0	3	1	8
Leopard	2	2	1	1	2	8
Civet	2	1	1	2	1	7
Hartebeest	3	1	0	1	2	7
Leopard tortoise	2	0	1	1	2	6
Springbok	0	2	1	2	0	5
Cheetah	2	1	1	0	0	4
Black backed jackal	2	0	0	0	1	3
Caracal	0	1	2	0	0	3
Genet	0	1	0	1	1	3
Honey Badger	0	1	0	2	0	3
Porcupine	1	0	1	1	0	3
Kori bustard	0	1	0	1	0	2
Quail birds	1	1	0	0	0	2
Red lechwe	0	0	1	1	0	2
Scrub hare	0	1	0	1	0	2
Spring hare	1	0	0	0	1	2
Tessebe	0	1	0	0	1	2
Baboon	0	0	0	1	0	1
Crocodile	0	1	0	0	0	1
Francolin	1	0	0	0	0	1
Hedgehog	1	0	0	0	0	1
Love birds	0	0	0	0	1	1
Puff Adder	0	0	0	1	0	1

Table 4.1: National Poaching Statistics (2020 - 2024) Continued

Species	2020	2021	2022	2023	2024	Total
Sable	0	0	0	0	1	1
Soft Sea Turtles	0	0	1	0	0	1
Water buck	0	0	0	1	0	1
Zorilla	0	0	0	0	1	1
Total	199	142	113	189	181	824

Source: Department of Wildlife & National Parks

Figure 4.1: National Poaching Statistics of Selected Species (2020 - 2024)

Tables 4.1a – 4.1h present incidents of poaching by district and species in the period 2020 to 2024. District poaching data identifies the Central District as the primary hotspot with 278 total incidents, driven largely by illegal hunting of Kudu (66) and Impala (50). Ngamiland (175) and Kgalagadi (174) also show high activity, with Ngamiland experiencing a sharp spike in incidents by 2024 and Kgalagadi recording the highest numbers for Gemsbok. Across these high-intensity districts, the four most frequently poached species were Kudu (130), Gemsbok (90), Impala (79), and Pangolin (77). While Chobe (29) and Kweneng (20) reported the fewest incidents overall, the data across all districts reveals an adaptive shift; as certain large-game incidents stabilize, there is a rising trend in the illegal killing of birds and smaller mammals, signaling a need for localized and species-specific enforcement strategies.

Table 4.1a: Poaching Statistics- Central (2020 - 2024)

Species	2020	2021	2022	2023	2024	Total
Kudu	20	6	8	20	12	66
Impala	15	11	6	10	8	50
Pangolin	2	5	4	6	4	21
Python	3	1	2	5	4	15
Duiker	7	2	0	4	0	13
Warthog	5	3	2	2	0	12
Gemsbok	5	3	1	1	1	11
Wildebeest	2	2	0	2	4	10
Eland	3	0	0	2	4	9
Zebra	1	1	2	4	1	9
Ant-bear	5	0	0	1	2	8
Fish	1	1	0	1	2	5
Leopard	1	1	1	1	1	5
Lion	2	1	1	1	0	5
Steenbok	2	1	1	0	1	5
Giraffe	1	0	1	2	0	4
Ostrich	1	1	0	2	0	4
Elephant	1	2	0	0	0	3
Leopard tortoise	2	0	0	0	1	3
Black backed jackal	1	0	0	0	1	2
Bush buck	0	0	0	2	0	2
Civet	0	0	0	2	0	2
Genet	0	0	0	1	1	2
Guinea fowl	1	0	0	0	1	2
Tessebe	0	1	0	0	1	2
Buffalo	1	0	0	0	0	1
Caracal	0	0	1	0	0	1
Cheetah	1	0	0	0	0	1
Francolin	1	0	0	0	0	1
Hedgehog	1	0	0	0	0	1
Porcupine	0	0	1	0	0	1
Puff Adder	0	0	0	1	0	1
Zorilla	0	0	0	0	1	1
Total	85	42	31	70	50	278

Source: Department of Wildlife & National Parks

Table 4.1b: Poaching Statistics- Chobe (2020 - 2024)

Species	2020	2021	2022	2023	2024	Total
Buffalo	2	2	1	0	1	6
Elephant	0	0	0	0	4	4
Fish	0	0	0	1	3	4
Warthog	2	0	0	1	1	4
Impala	1	2	0	0	0	3
Python	1	1	0	0	0	2
Zebra	0	1	0	0	1	2
Eland	0	0	0	0	1	1
Kudu	0	0	1	0	0	1
Lion	1	0	0	0	0	1
Pangolin	0	0	0	1	0	1
Total	7	6	2	3	11	29

Source: Department of Wildlife & National Parks

Table 4.1c: Poaching Statistics- Ghanzi (2020 - 2024)

Species	2020	2021	2022	2023	2024	Total
Kudu	7	3	3	2	2	17
Eland	2	0	1	2	0	5
Gemsbok	0	0	2	1	0	3
Steenbok	1	0	0	1	0	2
Warthog	0	0	0	1	1	2
Duiker	0	0	0	1	0	1
Guinea fowl	0	0	0	1	0	1
Lion	0	0	0	1	0	1
Pangolin	0	0	1	0	0	1
Porcupine	0	0	0	1	0	1
Scrub hare	0	0	0	1	0	1
Total	10	3	7	12	3	35

Source: Department of Wildlife & National Parks

Table 4.1d: Poaching Statistics- Kgalagadi (2020 - 2024)

Species	2020	2021	2022	2023	2024	Total
Gemsbok	14	19	11	10	18	72
Eland	10	2	7	5	4	28
Kudu	2	3	0	4	2	11
Steenbok	1	2	1	1	2	7
Wildebeest	2	0	1	3	1	7
Duiker	0	3	1	0	1	5
Lion	1	0	3	1	0	5
Springbok	0	2	1	2	0	5
Hartebeest	2	1	0	1	0	4
Ostrich	1	2	0	1	0	4
Pangolin	0	1	2	1	0	4
Honey Badger	0	1	0	2	0	3
Impala	1	1	1	0	0	3
Leopard	1	1	0	0	1	3
Cheetah	0	1	1	0	0	2
Black backed jackal	1	0	0	0	0	1
Caracal	0	1	0	0	0	1
Civet	0	1	0	0	0	1
Genet	0	1	0	0	0	1
Kori bustard	0	1	0	0	0	1
Leopard tortoise	0	0	0	0	1	1
Porcupine	1	0	0	0	0	1
Python	0	0	0	0	1	1
Scrub hare	0	1	0	0	0	1
Spring hare	1	0	0	0	0	1
Water buck	0	0	0	1	0	1
Total	38	44	29	32	31	174

Source: Department of Wildlife & National Parks

Table 4.1e: Poaching Statistics- Kgatleng (2020 - 2024)

Species	2020	2021	2022	2023	2024	Total
Kudu	3	3	1	3	1	11
Pangolin	0	2	4	0	2	8
Wildebeest	2	1	0	1	1	5
Impala	2	1	0	0	1	4
Guinea fowl	0	0	0	2	0	2
Ostrich	0	0	2	0	0	2
Steenbok	0	0	0	2	0	2
Buffalo	0	0	0	1	0	1
Caracal	0	0	1	0	0	1
Duiker	0	0	0	1	0	1
Python	0	0	0	0	1	1
Soft Sea Turtles	0	0	1	0	0	1
Total	7	7	9	10	6	39

Source: Department of Wildlife & National Parks

Table 4.1f: Poaching Statistics- Kweneng (2020 - 2024)

Species	2020	2021	2022	2023	2024	Total
Pangolin	0	1	1	3	3	8
Kudu	3	0	1	0	2	6
Civet	0	0	1	0	1	2
Baboon	0	0	0	1	0	1
Eland	0	1	0	0	0	1
Python	0	0	0	0	1	1
Wildebeest	0	0	0	0	1	1
Total	3	2	3	4	8	20

Source: Department of Wildlife & National Parks

Table 4.1g: Poaching Statistics- Ngamiland (2020 - 2024)

Species	2020	2021	2022	2023	2024	Total
Elephant	0	2	0	11	29	42
Buffalo	13	4	3	0	0	20
Impala	4	3	2	3	3	15
Giraffe	3	1	2	4	4	14
Bush buck	0	0	0	11	0	11
Bell's hinge back tortoise	0	0	0	0	9	9
Kudu	5	0	1	0	2	8
Fish	0	2	2	2	0	6
Lion	0	1	1	0	4	6
Warthog	2	0	0	2	2	6
Pangolin	0	2	2	1	0	5
Python	0	2	1	2	0	5
Zebra	1	1	0	1	2	5
Gemsbok	1	0	0	3	0	4
Duiker	1	1	1	0	0	3
Eland	2	0	0	0	1	3
Steenbok	0	1	0	0	2	3
Guinea fowl	0	2	0	0	0	2
Red lechwe	0	0	1	1	0	2
Civet	1	0	0	0	0	1
Crocodile	0	1	0	0	0	1
Kori bustard	0	0	0	1	0	1
Leopard tortoise	0	0	0	1	0	1
Sable	0	0	0	0	1	1
Spring hare	0	0	0	0	1	1
Total	33	23	16	43	60	175

Source: Department of Wildlife & National Parks

Table 4.1h: Poaching Statistics- Southern (2020 - 2024)

Species	2020	2021	2022	2023	2024	Total
Pangolin	6	8	9	4	2	29
Kudu	1	2	2	1	4	10
Fish	0	0	0	4	3	7
Impala	1	1	1	1	0	4
Python	2	0	0	2	0	4
Hartebeest	1	0	0	0	2	3
Lion	1	1	1	0	0	3
Quail birds	1	1	0	0	0	2
Steenbok	1	0	0	1	0	2
Wildebeest	0	1	0	1	0	2
Cheetah	1	0	0	0	0	1
Civet	1	0	0	0	0	1
Duiker	0	0	0	1	0	1
Eland	0	0	1	0	0	1
Guinea fowl	0	1	0	0	0	1
Leopard tortoise	0	0	1	0	0	1
Love birds	0	0	0	0	1	1
Ostrich	0	0	1	0	0	1
Total	16	15	16	15	12	74

Source: Department of Wildlife & National Parks

4.2. Problem Animal Control (PAC) incidents

Problem animal incidents are primarily caused by rising human populations competing with wildlife for increasingly scarce habitat and resources, leading to specific, countable events of human-wildlife conflict. The conflict involves animals damaging human property, which in turn leads people to kill the animals in self-defense and protection of their property.

The involved animals are termed problem animals, and their specific incidents are recorded to monitor the conflict's trend over time (Statistics Botswana, 2013). The purpose of this section is to present trends of problem animal incidents for the period 2020 to 2024 by species and district. However, it is worth noting that the data on compensation for problem animal incidents was not available, hence it was not included in the analysis.

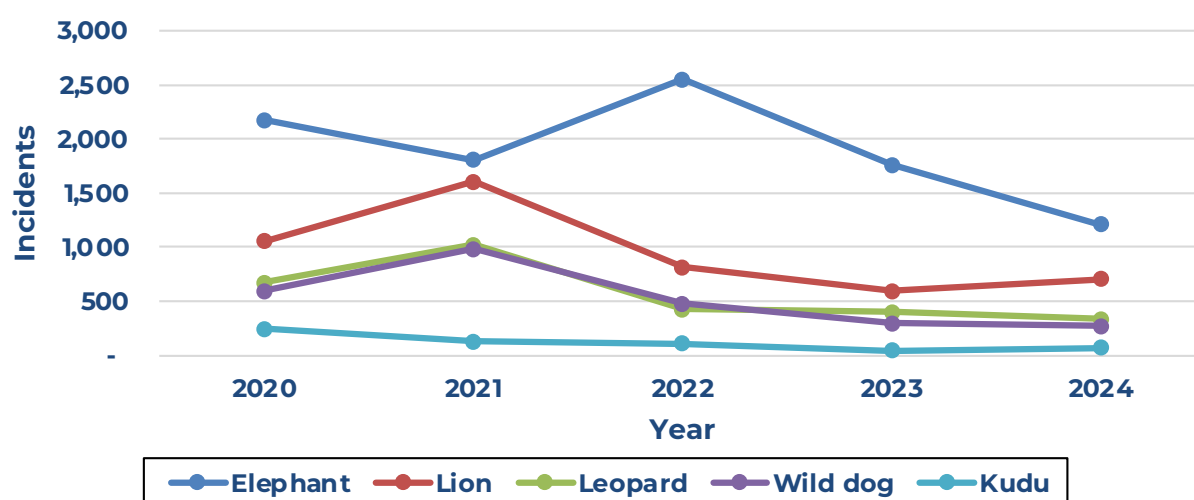
4.2.1. Trends in Problem Animal Incidents

Table 4.2 tracks the annual number of problem animal incidents involving various species in Botswana from 2020 to 2024. The table reveals that the total national number of incidents fluctuated over the five-year period, reaching a high of 6,085 in 2021 and a low of 2,851 in 2024. The total number of incidents was 5,386 in 2020 and substantially lower at 2,851 in 2024, showing a 47 percent decline between 2020 and 2024. The species responsible for the majority of incidents during the review period are Elephant, Lion, Leopard and Wild Dog in descending order (**Table 4.2** and **Figure 4.2**).

Table 4.2: National Problem Animal Incidents by Species (2020-2024)

Species	2020	2021	2022	2023	2024
Elephant	2,172	1,807	2,549	1,762	1,208
Lion	1,057	1,603	814	594	707
Leopard	675	1,021	428	404	338
Wild dog	594	983	476	299	274
Kudu	243	131	113	46	73
Hyena	186	153	60	54	49
Crocodile	73	73	82	62	45
Baboon	68	43	28	30	22
Caracal	16	29	24	19	21
Cheetah	84	79	93	38	20
Snakes	15	9	14	12	19
Eland	14	15	6	6	17
Python	52	44	17	20	15
Hippopotamus	33	30	22	24	9
Jackal	12	19	8	6	8
Wildebeest	7	1	9	1	8
Spotted hyena	3	7	2	4	5
Monitor lizard	2	-	-	-	3
Buffalo	39	7	10	10	2
Warthog	8	6	1	3	2
Porcupine	5	3	5	2	2
Black backed jackal	-	1	-	1	2
Monkey	14	9	7	3	1
Duicker	4	5	2	-	1
Honey badger	3	-	1	1	-
Guinea fowl	6	7	7	2	-
Steenbok	-	-	2	-	-
Birds	1	-	-	-	-
Total	5,386	6,085	4,780	3,403	2,851

Source: Department of Wildlife & National Parks

Figure 4.2: Estimated Number of Problem Animal Incidents for Selected Species, 2020 – 2024

It is evident from **Tables 4.2a to 4.2h** that elephant problem incidents were highest compared to all wildlife species in the years 2020, 2022, 2023 and 2024 and, Ngamiland and Central Districts constituted the majority of the incidents during the period 2020 to 2024. The tables further show that the incidents were either absent or lowest in all other areas outside the elephant range (Kgalagadi, Kgatleng, Kweneng and Southern Districts). During the period under review, the lion problem incidents were the second highest after elephant, particularly in Central, Chobe, Ngamiland, and Kgalagadi districts. Leopard incidents were highest in 2021 in Central District with a total of 449 incidents. The other species with high problem incidents is the wild dog, with the highest problem incidents recorded in 2021, and Kgalagadi District constituted the majority of the incidents.

Table 4.2a: Problem Animal Incidents by District (2020-2024) - Central

Species	2020	2021	2022	2023	2024
Elephant	1,289	5	575	724	232
Leopard	280	449	115	188	159
Wild dog	95	155	69	78	60
Lion	399	616	125	133	54
Hyena	77	109	26	42	32
Kudu	42	21	5	12	23
Caracal	5	16	5	3	12
Baboon	23	10	3	5	6
Jackal	3	6	1	0	1
Black backed jackal	0	0	0	0	1
Willdebeest	0	0	1	0	1
Cheetah	7	45	10	6	0
Crocodile	26	16	6	5	0
Monkey	4	0	1	1	0
Porcupine	1	0	0	0	0
Warthog	2	0	0	0	0
Spotted hyena	1	1	2	4	0
Duicker	1	0	0	0	0
Total	2,255	1,449	944	1,201	581

Source: Department of Wildlife & National Parks

Table 4.2b: Problem Animal Incidents by District (2020-2024) - Chobe

Species	2020	2021	2022	2023	2024
Lion	94	112	37	38	28
Elephant	184	203	104	126	24
Eland	14	15	6	6	17
Leopard	8	11	3	3	3
Python	5	1	0	0	3
Baboon	3	2	1	7	3
Kudu	10	4	2	5	2
Buffalo	38	0	10	9	2
Warthog	4	3	1	2	1
Willdebeest	0	0	1	0	1
Wild dog	2	0	0	1	0
Hyena	1	7	3	3	0
Crocodile	4	6	0	1	0
Hippopotamus	0	3	0	4	0
Porcupine	1	1	0	0	0
Honey badger	2	0	1	1	0
Total	370	368	169	206	84

Source: Department of Wildlife & National Parks

Table 4.2c: Problem Animal Incidents by District (2020-2024) – Ngamiland

Species	2020	2021	2022	2023	2024
Elephant	629	1,594	1,785	864	934
Lion	456	620	596	360	565
Leopard	95	166	141	83	87
Wild dog	83	210	158	70	53
Crocodile	42	48	75	53	44
Hippopotamus	33	27	22	20	9
Hyena	8	10	16	4	2
Cheetah	6	4	10	6	2
Baboon	0	5	0	1	2
Kudu	0	0	0	0	1
Caracal	0	3	12	3	1
Python	3	0	0	1	0
Buffalo	1	7	0	1	0
Jackal	0	1	1	0	0
Monkey	2	2	1	1	0
Honey badger	1	0	0	0	0
Total	1,359	2,697	2,817	1,467	1,700

Source: Department of Wildlife & National Parks

Table 4.2d: Problem Animal Incidents by District (2020-2024) - Kweneng

Species	2020	2021	2022	2023	2024
Wild dog	86	179	70	23	42
Lion	25	86	28	8	25
Leopard	41	79	55	17	22
Kudu	30	21	37	11	18
Elephant	48	0	23	27	14
Hyena	0	10	0	0	5
Cheetah	0	7	22	3	3
Snakes	2	0	1	0	2
Python	0	4	0	1	1
Caracal	1	3	1	1	1
Duicker	0	0	2	0	1
Willdebeest	0	0	1	0	1
Baboon	4	5	4	2	0
Jackal	1	0	1	0	0
Monkey	0	0	1	0	0
Guinea fowl	0	2	1	0	0
Steenbok	0	0	1	0	0
Total	238	396	248	93	135

Source: Department of Wildlife & National Parks

Table 4.2e: Problem Animal Incidents by District (2020-2024) - Kgatleng

Species	2020	2021	2022	2023	2024
Leopard	51	39	12	19	10
Wild dog	3	13	1	17	10
Kudu	19	14	0	5	3
Hyena	20	9	2	1	1
Crocodile	1	3	1	1	1
Elephant	6	0	0	0	0
Python	3	1	0	0	0
Baboon	3	4	1	1	0
Caracal	1	1	0	1	0
Jackal	1	2	0	0	0
Monkey	1	2	0	0	0
Guinea fowl	1	0	0	0	0
Willdebeest	0	0	0	1	0
Total	110	88	17	46	25

Source: Department of Wildlife & National Parks

Table 4.2f: Problem Animal Incidents by District (2020-2024) - Southern

Species	2020	2021	2022	2023	2024
Wild dog	84	77	40	29	44
Leopard	81	69	53	47	31
Kudu	140	69	67	10	24
Snakes	11	9	13	11	16
Pyhton	40	38	17	18	11
Baboon	35	17	19	14	11
Cheetah	30	5	9	8	4
Caracal	1	5	6	3	4
Jackal	2	2	5	2	4
Willdebeest	7	0	5	0	4
Hyena	77	2	6	1	3
Monitor lizard	2	0	0	0	3
Lion	2	3	0	0	1
Monkey	7	5	4	1	1
Warthog	2	3	0	1	1
Black backed jackal	0	1	0	0	1
Crocodile	0	0	0	1	0
Porcupine	1	2	3	1	0
Guinea fowl	5	5	6	2	0
Duicker	3	5	0	0	0
Birds	1	0	0	0	0
Total	531	317	253	149	163

Source: Department of Wildlife & National Parks

Table 4.2g: Problem Animal Incidents by District (2020-2024) - Ghanzi

Species	2020	2021	2022	2023	2024
Cheetah	9	0	28	7	8
Spotted hyena	0	5	0	0	5
Elephant	12	0	61	21	4
Hyena	1	1	3	1	3
Jackal	0	2	0	1	2
Leopard	46	87	8	13	1
Wild dog	81	121	35	28	1
Caracal	3	0	0	6	1
Lion	23	26	4	12	0
Kudu	1	0	0	2	0
Crocodile	0	0	0	1	0
Snakes	2	0	0	1	0
Porcupine	1	0	2	1	0
Steenbok	0	0	1	0	0
Total	179	8	142	94	25

Source: Department of Wildlife & National Parks

Table 4.2h: Problem Animal Incidents by District (2020-2024) - Kgalagadi

Species	2020	2021	2022	2023	2024
Wild dog	160	228	103	53	64
Lion	58	140	24	43	34
Leopard	73	121	41	34	25
Hyena	2	5	4	2	3
Cheetah	32	18	14	8	3
Kudu	1	2	2	1	2
Caracal	5	1	0	2	2
Porcupine	1	0	0	0	2
Snakes	0	0	0	0	1
Jackal	5	6	0	3	1
Willdebeest	0	1	1	0	1
Elephant	4	5	1	0	0
Python	1	0	0	0	0
Spotted hyena	2	1	0	0	0
Black backed jackal	0	0	0	1	0
Total	344	528	190	147	138

Source: Department of Wildlife & National Parks

4.3. Wildlife Mortality

This section presents a breakdown of wildlife mortality in Botswana by species and district for the years 2019 to 2024. The main causes of wildlife mortality are poaching, problem animal control (PAC) drought (water shortage and lack of grazing), diseases and natural causes.

Table 4.3 provides a 6-year summary of reported wildlife mortality for various species, totalling 2,924 documented deaths over the 2019-2024 period. The table shows a general downward trend in total reported mortality, with the highest total (723) in 2019. This peak was followed by 554 incidences that occurred in 2021 and 553 that occurred in 2020. The lowest incidences (319) occurred in 2023. The species with the highest overall reported mortality are, hartebeest, elephant, lion, leopard, and buffalo, in that order.

The district-level differences in wildlife mortality reveals that Ngamiland, Central, Chobe, and Ghanzi districts recorded the highest mortality incidences during the 2019-2024 period. Conversely, Kgatleng district shows the opposite trend. (**Tables 4.3a to 4.3h**)

The data presented in this section provides a critical baseline for monitoring wildlife health and conservation impact, highlighting which species and years require deeper investigation.

Table 4.3: National Wildlife Mortality Incidences, 2019 – 2024

Species	2019	2020	2021	2022	2023	2024
Elephant	346	194	98	104	152	140
Lion	29	34	32	26	32	45
Leopard	34	34	43	22	21	40
Eland	2	7	2	0	6	29
Kudu	4	2	1	4	3	15
Baboon	11	0	5	11	17	15
Buffalo	60	2	31	25	45	8
warthog	12	0	0	0	16	8
Cheetah	1	4	4	2	2	7
Giraffe	1	32	5	2	0	6
Zebra	1	0	12	1	2	6
Python	3	18	7	0	2	4
ostrich	12	2	3	8	1	4
Hippo	5	8	3	5	3	3
Crocodile	0	2	1	2	0	1
Hartebeest	9	10	276	220	0	1
steenbok	5	3	0	0	0	0
Wilddog	10	27	8	0	5	0
Impala	67	4	2	5	4	0
Hyena	2	20	1	1	1	0
Jackal	3	27	1	0	1	0
Pangolin	51	1	16	0	0	0
Sable	1	3	2	2	2	0
Porcupine	0	1	0	0	0	0
Caracal	17	5	0	0	1	0
Monkey	0	13	0	0	0	0
Waterbuck	27	16	0	2	0	0
Tsessebe	1	2	0	0	1	0
Bushbuck	3	0	0	0	2	0
Springbok	2	81	1	1	0	0
Duiker	4	1	0	0	0	0
Total	723	553	554	443	319	332

Source: Department of Wildlife & National Parks

Figure 4.3: National Wildlife Mortality Incidences, 2019 – 2024

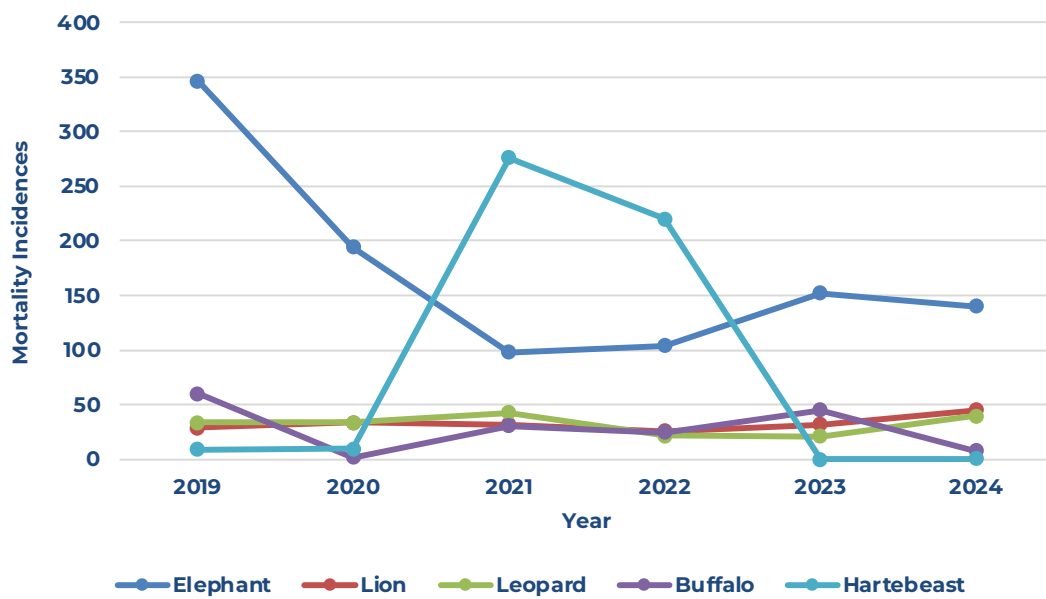


Table 4.3a: Wildlife Mortality Incidents Summary for Kweneng (2019-2024)

Species	2019	2020	2021	2022	2023	2024
Lion	2	0	0	0	0	5
Leopard	2	2	5	4	5	3
Kudu	0	0	2	0	0	3
ostrich	0	0	0	1	0	3
Elephant	0	0	0	0	0	1
Crocodile	0	0	0	0	0	1
Cheetah	0	0	0	0	0	0
steenbok	0	0	0	0	0	0
Buffalo	0	0	2	0	0	0
Giraffe	2	1	0	0	0	0
Wilddog	0	0	0	0	0	0
Eland	0	0	0	0	0	0
Impala	0	0	0	0	0	0
Hyena	0	0	0	0	0	0
Jackal	0	0	1	0	0	0
Python	0	0	0	0	0	0
Pangolin	0	0	0	0	0	0
Sable	0	0	0	0	0	0
Porcupine	0	0	0	0	0	0
Hippo	0	0	0	0	1	0
Caracal	0	0	0	0	0	0
Monkey	1	0	1	0	0	0
Baboon	0	0	0	0	0	0
Waterbuck	0	0	0	0	0	0
Tsessebe	0	0	0	0	0	0
Bushbuck	0	0	0	0	0	0

Table 4.3a: Wildlife Mortality Incidents Summary for Kweneng (2019-2024)

Species	2019	2020	2021	2022	2023	2024
Zebra	0	0	0	0	0	0
Springbok	0	0	0	0	0	0
Hartebeest	0	0	11	5	0	0
warthog	0	0	0	0	0	0
Duiker	0	0	0	0	0	0
Total	7	3	22	10	6	16

Source: Department of Wildlife & National Parks

Table 4.3b: Wildlife Mortality Summary for Kgalagadi (2019-2024)

Species	2019	2020	2021	2022	2023	2024
Lion	2	1	8	1	11	21
Leopard	2	3	5	6	10	18
Cheetah	0	0	0	0	0	6
Python	0	0	3	1	2	2
Elephant	0	0	0	0	0	1
Kudu	0	0	0	0	0	1
steenbok	0	0	0	0	0	0
Buffalo	0	0	0	0	0	0
Giraffe	1	2	0	0	0	0
Wilddog	0	0	0	0	0	0
Eland	0	2	0	0	0	0
Impala	0	0	0	0	0	0
Hyena	0	0	0	0	2	0
Jackal	0	0	0	0	0	0
Pangolin	48	0	0	0	0	0
Sable	1	0	0	0	0	0
Porcupine	0	0	0	0	0	0
Hippo	0	6	0	0	0	0
Crocodile	0	0	0	0	0	0
Caracal	0	0	0	0	0	0
Monkey	0	0	0	0	0	0
Baboon	0	0	0	0	0	0
Waterbuck	0	0	0	0	0	0
Tsessebe	0	0	0	0	0	0
Bushbuck	0	0	0	0	0	0
Zebra	1	0	0	0	0	0
ostrich	6	0	0	0	0	0
Springbok	2	0	0	0	0	0
Hartebeest	8	0	16	8	0	0
warthog	0	0	0	0	0	0
Duiker	1	0	0	0	0	0
Total	72	14	32	16	25	49

Source: Department of Wildlife & National Parks

Table 4.3c: Wildlife Mortality Summary for Kgatleng (2019-2024)

Species	2019	2020	2021	2022	2023	2024
Kudu	0	0	0	0	0	2
Leopard	3	3	1	0	0	1
Lion	0	1	1	0	0	0
Elephant	0	0	0	0	0	0
Cheetah	0	0	0	0	0	0
steenbok	0	0	0	0	0	0
Buffalo	0	0	0	0	0	0
Giraffe	0	3	0	0	0	0
Wilddog	0	0	0	0	0	0
Eland	8	0	0	4	0	0
Impala	0	0	0	0	0	0
Hyena	0	1	0	0	0	0
Jackal	0	0	0	1	0	0
Python	0	0	0	0	0	0
Pangolin	0	0	3	0	0	0
Sable	0	0	0	0	0	0
Porcupine	0	0	0	0	0	0
Hippo	0	1	0	0	0	0
Crocodile	0	0	0	1	0	0
Caracal	0	0	0	0	0	0
Monkey	0	0	0	0	0	0
Baboon	0	0	0	0	0	0
Waterbuck	0	1	0	0	0	0
Tsessebe	0	0	0	0	0	0
Bushbuck	0	0	0	0	0	0
Zebra	0	0	0	0	0	0
ostrich	0	0	0	0	0	0
Springbok	0	0	0	0	0	0
Hartebeest	0	0	5	6	0	0
warthog	0	0	0	0	0	0
Duiker	0	0	0	0	0	0
Total	11	10	10	12	0	3

Source: Department of Wildlife & National Parks

Table 4.3d: Wildlife Mortality Summary for Central (2019-2024)

Species	2019	2020	2021	2022	2023	2024
Elephant	11	9	8	6	4	38
Giraffe	19	14	8	5	2	5
Lion	227	92	47	16	41	2
Leopard	1	0	0	0	0	2
Eland	4	0	0	0	0	2
Kudu	7	0	0	0	28	2
Python	0	1	1	0	0	1
Baboon	5	0	0	0	5	1
Cheetah	1	0	0	0	0	0
steenbok	51	1	0	1	0	0
Buffalo	2	1	0	1	0	0
Wilddog	1	7	0	0	1	0
Impala	0	2	0	1	0	0
Hyena	0	2	3	0	0	0
Jackal	0	1	2	0	0	0
Pangolin	0	1	1	0	0	0
Sable	0	1	0	0	0	0
Porcupine	0	1	1	1	1	0
Hippo	0	0	0	0	0	0
Crocodile	7	0	0	0	0	0
Caracal	0	0	0	0	0	0
Monkey	0	0	0	4	0	0
Waterbuck	3	6	0	0	0	0
Tsessebe	0	0	0	0	0	0
Bushbuck	2	0	0	0	0	0
Zebra	0	0	0	0	0	0
ostrich	6	0	0	0	0	0
Springbok	0	5	0	1	0	0
Hartebeest	0	0	71	36	0	0
warthog	1	0	0	0	0	0
Duiker	1	1	0	0	0	0
Total	349	145	142	72	82	53

Source: Department of Wildlife & National Parks

Table 4.3e: Wildlife Mortality Summary for Southern (2019-2024)

Species	2019	2020	2021	2022	2023	2024
Leopard	0	0	0	0	0	4
Kudu	0	0	0	0	0	3
Python	0	0	0	0	0	1
Lion	0	0	0	0	1	0
Elephant	1	4	1	3	6	0
Cheetah	0	0	0	0	0	0
steenbok	0	0	0	0	0	0
Buffalo	0	0	0	0	0	0
Giraffe	0	0	0	0	0	0
Wilddog	0	0	0	0	0	0
Eland	0	0	0	0	0	0
Impala	0	0	0	0	0	0
Hyena	0	0	0	0	0	0
Jackal	0	0	0	0	0	0
Pangolin	0	0	0	0	0	0
Sable	0	0	0	0	0	0
Porcupine	0	0	0	0	0	0
Hippo	0	0	1	0	0	0
Crocodile	0	0	0	0	0	0
Caracal	0	0	0	0	0	0
Monkey	0	0	0	0	0	0
Baboon	0	0	0	0	0	0
Waterbuck	0	0	0	0	0	0
Tsessebe	0	0	0	0	0	0
Bushbuck	0	0	0	0	0	0
Zebra	0	0	0	0	0	0
ostrich	0	0	0	0	0	0
Springbok	0	0	0	0	0	0
Hartebeest	0	0	0	0	0	0
warthog	0	0	0	0	0	0
Duiker	0	0	0	0	0	0
Total	1	4	2	3	7	8

Source: Department of Wildlife & National Parks

Table 4.3f: Wildlife Mortality Summary for Ngamiland (2019-2024)

Species	2019	2020	2021	2022	2023	2024
Elephant	8	13	0	8	5	76
Buffalo	3	9	4	3	1	6
Lion	83	70	38	61	63	5
Zebra	0	4	0	0	0	4
Giraffe	0	0	0	0	0	1
Eland	45	0	25	9	3	1
Hippo	0	31	4	0	0	1
ostrich	3	16	0	0	0	1
Hartebeest	0	3	0	0	0	1
Leopard	4	1	0	0	0	0
Cheetah	0	13	0	0	0	0
steenbok	0	17	1	0	0	0
Wilddog	1	0	0	0	0	0
Impala	0	15	0	0	0	0
Hyena	0	0	3	0	0	0
Jackal	0	1	0	0	0	0
Kudu	0	0	0	0	0	0
Python	5	0	0	4	2	0
Pangolin	0	0	0	0	0	0
Sable	10	5	0	0	0	0
Porcupine	0	13	0	0	0	0
Crocodile	8	0	4	7	7	0
Caracal	8	0	0	0	0	0
Monkey	0	2	0	0	0	0
Baboon	0	0	0	0	0	0
Waterbuck	0	0	0	1	1	0
Tsessebe	0	2	0	0	0	0
Bushbuck	0	75	0	0	0	0
Springbok	1	10	79	93	0	0
warthog	0	0	0	0	0	0
Duiker	1	0	0	0	0	0
Total	180	300	158	186	82	96

Source: Department of Wildlife & National Parks

Table 4.3g: Wildlife Mortality Summary for Ghanzi (2019-2024)

Species	2019	2020	2021	2022	2023	2024
Lion	5	3	11	9	11	12
Leopard	5	3	20	4	2	12
Elephant	6	4	3	13	4	9
Cheetah	0	0	1	0	0	1
Kudu	1	0	0	0	0	1
steenbok	0	0	0	0	0	0
Buffalo	1	0	0	0	0	0
Giraffe	0	0	0	0	0	0
Wilddog	0	2	0	0	0	0
Eland	0	0	0	0	0	0
Impala	0	2	0	0	0	0
Hyena	0	0	0	0	0	0
Jackal	0	0	0	1	1	0
Python	0	0	0	0	0	0
Pangolin	0	0	0	0	0	0
Sable	0	0	0	0	0	0
Porcupine	0	0	0	0	0	0
Hippo	0	0	0	0	0	0
Crocodile	0	0	0	0	0	0
Caracal	0	0	0	0	0	0
Monkey	0	0	0	0	0	0
Baboon	0	0	0	0	0	0
Waterbuck	0	0	0	0	0	0
Tsessebe	0	0	0	0	0	0
Bushbuck	1	0	0	0	0	0
Zebra	0	0	0	0	0	0
ostrich	0	0	0	0	1	0
Springbok	0	0	0	0	0	0
Hartebeest	0	0	35	27	0	0
warthog	0	0	0	0	0	0
Duiker	1	0	0	0	0	0
Total	20	14	70	54	19	35

Source: Department of Wildlife & National Parks

Table 4.3h: Wildlife Mortality Summary for Chobe (2019-2024)

Species	2019	2020	2021	2022	2023	2024
Eland	1	8	5	2	0	26
Elephant	0	0	0	0	1	15
Baboon	29	23	6	11	38	14
warthog	0	0	0	0	0	8
Kudu	0	3	0	0	0	3
Buffalo	8	2	6	16	14	2
Hippo	0	0	0	2	0	2
Zebra	2	8	8	0	0	2
Lion	0	0	0	0	6	0
Leopard	2	1	2	0	4	0
Cheetah	0	2	1	0	1	0
steenbok	2	2	0	0	0	0
Giraffe	3	0	1	1	0	0
Wilddog	3	1	4	0	2	0
Impala	3	0	7	0	0	0
Hyena	0	1	1	2	2	0
Jackal	0	0	0	0	0	0
Python	0	0	1	0	0	0
Pangolin	0	2	1	1	0	0
Sable	0	0	0	0	0	0
Porcupine	0	0	0	0	0	0
Crocodile	2	0	0	0	10	0
Caracal	16	9	0	2	0	0
Monkey	1	0	0	0	1	0
Waterbuck	0	0	0	0	2	0
Tsessebe	0	0	12	0	1	0
Bushbuck	0	0	3	8	0	0
ostrich	0	1	1	0	0	0
Springbok	0	0	59	45	0	0
Hartebeest	11	0	0	0	16	0
Duiker	0	0	0	0	0	0
Total	83	63	118	90	98	72

Source: Department of Wildlife & National Parks

4.4. Fish Statistics

This section examines fish capture production in Botswana for the period 2016 – 2022. The industry is governed by the Fish Protection Act of 1975, which provides the legal framework for the conservation and sustainable management of aquatic resources. Monitoring these statistics is vital for addressing overfishing and biodiversity loss while supporting national food security.

Commercial fishing in Botswana remains in an early stage of development. It is primarily concentrated in the Gaborone, Bokaa, Shashe, Letsibogo, and Nnywane dams. In contrast, the majority of the sector consists of traditional fishers operating within major river systems, including the Chobe, Limpopo, Thamalakane, and Boteti rivers, as well as the Okavango Delta (Ministry of Agriculture, 2024).

It is worth noting that an institutional shift occurred with the relocation of the Fisheries and Aquaculture portfolio from the Department of Wildlife and National Parks (DWNP) to the Ministry of Lands and Agriculture. While this transition aimed to align fish production with national food security goals, it has disrupted the continuity of data collection and documentation. Consequently, there is currently no data available on the economic value of the harvest. The migration of administrative systems from the Department of Wildlife and National Parks (DWNP) to the Ministry of Lands and Agriculture has contributed to the gaps in reported fish capture statistics.

4.4.1. Fish capture production by species in Botswana, 2016-2022

Based on the data provided in Table 4.4, national fish capture production followed a highly inconsistent and downward trend between 2016 and 2022. Total annual output peaked at 9.56 metric tons in 2019 before experiencing a sharp and continuous decline to a record low of 0.42 metric tons by 2022. Throughout this period, Bream remained the dominant species with the highest annual yields, followed by Carp, while the capture of Barbel, Bass, and Labeo declined to negligible levels. The year 2019 saw the highest capture production of Bream with a total 5.75 metric tons.

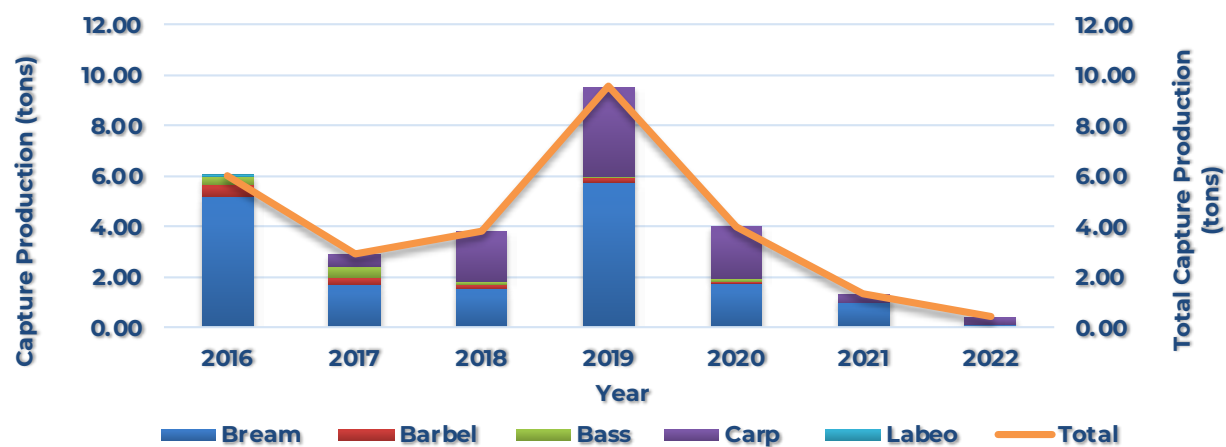
Table 4.4 further reveals that Bream remained the dominant species with a leading annual average of 2.43 metric tons, followed by Carp at 1.26 metric tons. Despite their overall dominance, both species suffered drastic losses toward the end of the period, with Bream production dropping by 97.7% and Carp by 92.2% between 2019 and 2022. Other species with the lowest capture production include Barbel (0.18 metric tons average) and Bass (0.15 metric tons average), with Bass production reaching zero in the final two years of the review period.

Table 4.4: Fish capture production by species in Botswana, 2016-2022 (Metric tons)

Year	Bream	Barbel	Bass	Carp	Labeo	Total
2016	5.18	0.49	0.31	0.00	0.02	6.00
2017	1.73	0.24	0.49	0.48	0.00	2.94
2018	1.52	0.20	0.09	2.03	0.00	3.84
2019	5.75	0.17	0.06	3.59	0.00	9.56
2020	1.74	0.10	0.08	2.09	0.00	4.01
2021	0.95	0.02	0.00	0.34	0.00	1.31
2022	0.13	0.01	0.00	0.28	0.00	0.42
Annual average	2.43	0.18	0.15	1.26	0.00	4.01

Source: Ministry of Lands & Agriculture

Figure 4.4: Fish capture production by species in Botswana, 2016-2022 (Metric tons)





APPENDIX I

Table AI: Mid-Month Dam Levels (2020-2025)

Year	Dam	16-Jan	17-Feb	17-Mar	14-Apr	15-May	15-Jun	17-Jul	14-Aug	16-Sep	16-Oct	17-Nov	14-Dec	annual mid-month averages
2020	Dikgatlhong	70	70.8	70.8	71.5	69.5	67.5	65.9	64.3	62.7	62.2	60.6	61.4	66.4
	Molatedi	17.7	19.5	19.5	16.1	15.6	14.7	13.8	13	12	11.9	13.9	14.1	15.2
	Gaborone	62.4	67.7	67.7	63.2	62.1	59.8	58.3	51.1	54.5	52.5	52.5	51.9	58.6
	Letsibogo	79	93.5	93.5	92.3	89.6	86.6	84.5	82	80.2	83.2	80.5	78.7	85.3
	Thune	47.5	60.4	60.4	55.9	54.6	52.5	51.3	50.1	48.8	47.5	46	46.3	51.8
	Shashe	73.1	92.1	92.1	95.6	92.2	88.5	85.5	82.1	79.5	89.6	85.9	94.5	87.6
	Ntimbale	81.7	96.2	96.2	96.2	93.1	86.7	86.1	83.9	80.3	96.7	91.7	100.2	90.8
	Lotsane	61.3	71.3	71.3	66.1	62.6	58.2	57.6	56.1	43.7	51.3	48.7	48.3	58
	Bokaa	100	99.4	99.4	86.1	87.3	78.9	74.3	67.3	51.2	52.5	71.1	70.5	78.2
	Nnywane	100	97.8	97.8	93	88.4	81.8	79.9	75.9	82.2	82	88.6	86.6	87.8
2021	Dikgatlhong	102.5	102.5	100.6	97.9	95.9	93.6	91.8	89.7	87.9	86.2	84	86.9	93.3
	Molatedi	12.8	61.7	61.5	58	93.6	53.3	51.6	49.5	47.5	44	41.1	45	51.6
	Gaborone	54.7	65.3	61.5	61.8	56.4	56.6	55.1	52.8	51.1	48.9	47	46.7	54.8
	Letsibogo	100	102.2	99.2	97.2	59.3	89.9	88	86.3	84.8	81.7	79.3	98	88.8
	Thune	68.8	102.1	64.1	95.8	93.2	90.5	88.8	86.8	85.1	83.1	80.7	80.4	85
	Shashe	103.2	100.2	98.8	96.6	93.7	89.6	86.6	79.8	80.3	77.7	74.9	83.4	88.7
	Ntimbale	102.3	100	99.7	98.5	95.9	93.4	90.2	88.4	83.5	81.5	74.8	81.5	90.8
	Lotsane	54.2	102.6	99.2	94.8	90.7	86.7	84.4	64.8	77.5	73.5	69.3	72.4	80.8
	Bokaa	67	100	98.6	94.2	89.2	85.1	82.7	83.2	76	71.8	65.7	66.6	81.7
	Nnywane	99.8	101.3	98.6	99	96.5	91.4	85.3	93.9	83.4	84.8	81.1	99.7	92.9
2022	Dikgatlhong	87.9	90.9	88.1	87.1	86.5	84.5	84.5	81.2	80.2	76.4	80.5	80.1	84
	Molatedi	43	42.1	39.7	41	45.5	45.6	45.6	43.6	40.1	37.1	39	42.3	42.1
	Gaborone	54.5	52	51.6	52.3	54.2	52.2	52.5	49.4	48	43.7	58.3	57.1	52.2
	Letsibogo	97.2	100	96.6	96.2	94.7	91	91	86	84.1	80.5	85.1	84.5	90.6
	Thune	81.4	80.3	78.3	77.2	75.4	73.1	73.1	70.1	68.6	66	64.9	66.6	72.9
	Shashe	100.8	99.4	97.2	93.9	90.4	86.5	86.5	78.9	76.9	73.1	84	100	89
	Ntimbale	100.4	99	96.2	100.5	97.3	94.1	94.1	87.8	84.5	80	94.5	98.2	93.9
	Lotsane	78.3	81.8	76.4	73.9	71.7	68.7	68.7	64.8	61.2	55.4	56.3	55	67.7
	Bokaa	98.5	92.6	88.4	102.1	96.7	92.1	85.5	82.3	78.2	69.9	101	100	90.6
	Nnywane	102	98.6	100	101	99.6	97.9	92.9	93.9	93.6	86.1	101	101	97.3

Table A1: Mid-Month Dam Levels (2020-2025)

Year	Dam	16-Jan	17-Feb	17-Mar	14-Apr	15-May	15-Jun	17-Jul	14-Aug	16-Sep	16-Oct	17-Nov	14-Dec	annual mid-month averages
2023	Dikgatlhong	85.9	95.6	100	96.7	95.6	93.3	91.6	90.2	88.5	86.3	85.1	82.9	91
	Molatedi	59.1	56.8	66.1	66.6	66.1	65	63.2	60.8	58.8	53.9	52.6	49.3	59.9
	Gaborone	57.3	55.2	71.2	70.6	67.6	65.3	62.9	61	59.4	57.1	55.6	53.3	61.4
	Letsibogo	83.2	83.2	98.8	91.6	86.6	83.2	78.1	86	71.5	67.4	65.6	59.9	79.6
	Thune	66.7	74.2	81.3	78.1	75.9	73	71.8	70	68.3	65	63.9	63.3	71
	Shashe	99.8	100.8	96.4	93.9	91.5	87.9	84.9	81.9	79.5	76.3	74.6	71.3	86.6
	Ntimbale	99.2	100.2	98.1	97	93.5	89.7	86.3	83.7	80.3	76.5	74.1	75	87.8
	Lotsane	54.4	55.1	62.1	57.4	54.2	50.6	48.3	46.5	43.3	38.9	37	35.1	48.6
	Bokaa	97.2	98.4	99.9	95	90.3	83.8	80.3	75.9	74.9	70.5	69.4	66.4	83.5
	Nnywane	97.4	93.5	99.0	98	94.7	89.9	87.9	85.9	84.2	81.1	80.1	78.7	89.2
2024	Dikgatlhong	82.2	84.9	82.3	80.4	77.9	75.6	74.6	72.7	70.4	68.6	66.8	65.4	75.2
	Molatedi	47.6	44.9	40.6	40.1	38.3	36.7	35.6	34.2	31.6	28.5	25.8	23.5	35.6
	Gaborone	51.6	48.7	46.8	53.1	50.9	48.5	47	43.7	42	39.6	37.7	35.1	45.4
	Letsibogo	75.4	56.1	53.4	50	48.7	47.4	45.8	42.7	39.7	38	35.1	32.2	47
	Thune	63.9	62.1	59.4	57.5	55.5	54.2	53	51.6	50	48	46.2	44.3	53.8
	Shashe	70.2	81.3	76.5	72.8	68.9	65.2	62.7	58.2	54.7	51.4	48.4	48.7	63.3
	Ntimbale	76.2	96.6	92.8	89.6	86.8	82.8	80.9	78	74.5	71.2	66.3	64.5	80
	Lotsane	36.2	33.9	30.7	28.7	26.7	24.3	23.2	21.2	18.8	17.1	15.9	14.1	24.2
	Bokaa	65	59.2	56	54.3	51.8	49.7	48.2	31.8	28.3	25.9	23.6	20.4	42.9
	Nnywane	78	75.6	73.7	101	99	97.6	97	87.9	84.5	80.5	76.2	71.1	85.2
2025	Dikgatlhong	93.8	106.8	100.6	97.5	96.9	94.1	92.4	90.2	88.3	86.1	84.7	85.1	93.1
	Molatedi	37	37.3	109.3	110.1	109.4	108.7	108.4	107.4	104.3	100.4	98	99.5	94.2
	Gaborone	36.5	45.3	99.6	99.9	97.7	94.6	92.3	90.3	89	86.3	85.4	84.2	83.4
	Letsibogo	91.4	104.6	97.3	94.4	91.4	87.4	84.9	81.8	79.1	73	69.8	70.1	85.5
	Thune	83.4	92.5	93.6	90.7	91	88.3	86.6	84.7	83.2	80.5	79.2	80.9	86.2
	Shashe	107.6	101.9	97.2	94.7	92.2	88.1	85.1	80	76.6	73.6	70.2	85.5	87.8
	Ntimbale	108.6	102.2	99.5	97.6	95.4	91.8	89.2	85.7	82.4	79.4	77.5	88.6	91.5
	Lotsane	116.3	112.6	99.1	95.2	92.8	89.2	86.4	83.4	80.5	74.2	71.1	70.9	89.4
	Bokaa	59.4	106.5	100.4	100.4	98.7	95.5	92.3	86.1	81.6	76.2	71.7	66.5	86.3
	Nnywane	88.4	90.9	101.1	99.8	99.6	97.5	95.5	89.7	88	86.3	84.9	83.1	92.1

Table A2: Water extraction from the rivers (kilolitres)

2017-18	Kasane Portable Plant	Kasane Old Plant	Kazungula Plant	Maun Treatment Plant (Thamalake)	Wenela Treatment Plant (Thamalake)	Sepopa Treatment Works (Okavango)	Gumare Treatment Works (Okavango)	Nokaneng	Shakawe Treatment Plants (Okavango)	Mohembo Treatment Plant (Okavango)	Seronga Treatment Plant
Apr	-	161,580	30,460	150,210	7,942	-	22,500	-	35,578	5,476	-
May	-	137,170	29,460	170,840	10,440	-	22,530	-	35,274	-	-
Jun	1,400	134,400	28,120	162,470	10,437	-	22,840	-	42,507	-	-
Jul	1,400	123,320	26,370	146,070	10,643	-	24,230	-	43,938	-	-
Aug	1,400	142,490	29,230	167,340	7,467	-	24,230	-	43,284	-	-
Sep	1,400	148,290	34,390	193,260	20,734	-	18,860	-	32,779	-	-
Oct	12,800	118,820	35,090	176,940	22,184	-	14,890	-	25,085	-	-
Nov	-	93,950	32,740	176,800	29,925	-	12,010	-	29,630	-	-
Dec	-	61,910	31,260	163,820	18,107	-	14,630	-	27,724	-	-
Jan	-	118,090	32,120	149,790	19,443	-	15,100	-	31,905	-	-
Feb	-	96,549	17,780	118,910	19,596	-	8,780	-	33,807	-	-
Mar	-	105,634	20,380	133,680	15,326	-	15,380	-	34,388	-	-
2019-20											
Apr	97,160	-	36,920	-	-	-	3,198	-	42,090	14,523	-
May	98,110	-	39,260	-	-	-	3,408	-	44,722	15,798	-
Jun	100,840	-	40,160	-	-	-	3,583	-	46,092	14,526	-
Jul	105,670	-	37,893	-	-	-	6,052	-	44,587	13,457	-
Aug	94,470	-	41,790	-	-	-	4,873	-	50,897	13,714	-
Sep	94,680	-	41,610	-	-	-	8,012	-	50,024	14,035	-
Oct	94,190	-	45,580	-	-	-	3,841	-	49,622	13,958	-
Nov	94,190	-	45,580	-	-	-	3,659	-	41,625	14,102	-
Dec	95,920	-	51,860	-	-	-	3,132	-	26,111	12,568	-
Jan	98,350	-	34,800	-	-	-	3,132	-	22,156	12,314	-
Feb	94,890	-	32,300	-	-	-	3,800	-	38,738	14,013	-
Mar	98,740	-	40,410	-	-	-	4,000	-	46,008	14,676	14,810
TOTAL (KL)	1,167,210	-	488,163	-	-	-	50,690	-	502,672	167,684	92,820
2020-21											
Apr	-	-	-	-	-	-	-	-	25,809	13,450	13,810
May	-	-	-	-	-	-	-	-	20,862	12,230	14,240
Jun	-	-	-	51,060	-	-	-	-	17,631	14,210	13,850
Jul	-	-	-	78,270	-	-	-	-	37,157	13,635	16,050
Aug	-	-	-	115,030	-	-	-	-	37,125	13,511	16,920
Sep	-	-	-	119,690	-	-	-	-	36,356	12,712	17,720
Oct	-	-	-	128,180	-	-	-	-	40,122	13,622	22,960
Nov	-	-	-	125,030	-	-	-	-	39,652	13,562	19,200
Dec	-	-	-	127,040	-	-	-	-	41,236	12,533	20,840
Jan	-	-	-	121,670	-	-	-	-	38,485	7,384	17,310
Feb	-	-	-	117,270	-	-	-	-	39,335	-	15,480
Mar	-	-	-	140,650	-	-	-	-	36,000	-	19,100
TOTAL (KL)	-	-	-	1,123,890	-	-	-	-	409,770	126,849	207,480

Table A2: Water extraction from the rivers (kilolitres) Continued

2017-18	Kasane Portable Plant	Kasane Old Plant	Kazungula Plant	Maun Treatment Plant (Thamalakane)	Wenela Treatment Plant(Thamalakane)	Sepopa Treatment Works (Okavango)	Gumare Treatment Works (Okavango)	Nokaneng	Shakawe Treatment Plants(Okavango)	Mohembo Treatment Plant(Okavango)	Seronga Treatment Plant
2021-22											
Apr	-	105,120	50,830	125,160	-	5,257	13,096	7,200	44,667	11,733	18,670
May	-	91,700	50,670	131,199	-	3,217	12,765	7,200	35,685	9,775	19,410
Jun	-	96,870	43,020	139,570	-	4,237	12,931	7,200	48,668	10,976	20,490
Jul	-	94,650	39,990	137,490	-	13,031	12,931	8,563	52,767	13,110	20,550
Aug	-	95,750	56,540	137,260	-	7,300	12,875	3,739	50,548	12,850	18,050
Sep	-	72,740	51,600	103,890	-	23,960	12,912	4,335	49,098	12,310	19,160
Oct	9,406	96,250	60,310	117,380	-	21,120	55,273	2,535	90,000	14,476	20,290
Nov	13,671	91,060	39,080	132,920	-	26,996	7,508	2,617	64,359	14,106	18,825
Dec	11,537	95,330	46,300	113,370	-	21,574	53,420	6,114	69,615	14,168	19,868
Jan	10,955	95,960	16,490	118,900	-	22,851	56,333	2,679	83,051	11,832	18,627
Feb	-	90,890	41,580	107,540	-	20,539	34,956	2,709	75,021	11,092	19,394
Mar	-	94,250	48,170	116,650	-	22,678	32,360	2,808	87,256	10,309	17,525
TOTAL (KL)	45,569	1,120,570	544,580	1,481,329	-	192,758	317,360	57,699	750,735	146,737	230,859
2022-23											
Apr	135,880	-	54,560	105,010	-	8,874	33,246	4,165	81,389	9,035	20,428
May	130,230	-	59,760	-	-	8,996	36,790	3,749	90,361	8,379	20,895
Jun	123,970	-	67,940	-	-	8,476	34,896	3,647	98,336	8,105	21,320
Jul	119,300	-	68,750	-	-	8,279	31,256	2,146	84,208	7,421	21,258
Aug	114,160	-	62,390	-	-	8,896	31,846	3,181	98,873	8,837	21,786
Sep	111,360	-	60,690	181,960	-	8,326	31,948	2,627	101,901	8,565	20,732
Oct	118,980	-	75,627	93,020	-	7,894	33,968	3,345	99,324	7,687	20,358
Nov	109,449	-	54,843	47,490	-	7,648	35,456	2,393	87,464	8,321	21,586
Dec	100,101	-	53,720	-	-	8,243	30,195	6,468	83,239	8,540	19,876
Jan	68,100	-	54,843	-	-	7,468	33,286	5,384	96,633	8,037	21,285
Feb	100,101	-	53,720	-	-	7,236	24,870	6,215	91,531	9,076	20,988
Mar	68,100	-	43,470	-	-	7,010	32,080	6,421	81,625	9,992	19,060
TOTAL (KL)	1,299,731	-	710,313	427,480	-	97,346	389,837	49,741	1,094,884	101,995	249,572
2024-25											
Apr	228,261	-	7,675	-	-	6,894	25,384	6,228	76,963	11,748	21,128
May	266,105	-	3,338	-	-	5,824	33,223	6,307	101,086	13,324	20,284
Jun	277,418	-	3,613	-	-	6,428	28,548	4,561	137,772	11,905	19,674
Jul	280,640	-	3,496	-	-	6,925	26,752	3,681	109,890	12,185	20,509
Aug	263,604	-	4,000	-	-	5,806	26,008	5,843	91,893	11,610	20,168
Sep	259,918	-	2,312	-	-	6,802	25,892	5,836	92,569	12,059	20,304
Oct	215,327	-	6,643	-	-	6,928	26,872	5,228	111,140	11,782	20,008
Nov	221,671	-	5,284	-	-	4,216	27,458	4,890	91,530	10,657	19,218
Dec	233,506	-	3,750	-	-	6,186	32,360	4,386	84,756	10,442	19,842
Jan	215,327	-	4,080	-	-	5,869	38,052	2,891	66,454	10,835	19,798
Feb	221,671	-	4,419	-	-	6,188	29,055	4,985	96,405	96,405	20,093
Mar	233,506	-	4,094	-	-	6,117	29,422	4,861	98,350	98,350	19,990
TOTAL (KL)	2,916,954	-	52,704	-	-	74,183	349,026	59,697	1,158,808	311,303	241,016

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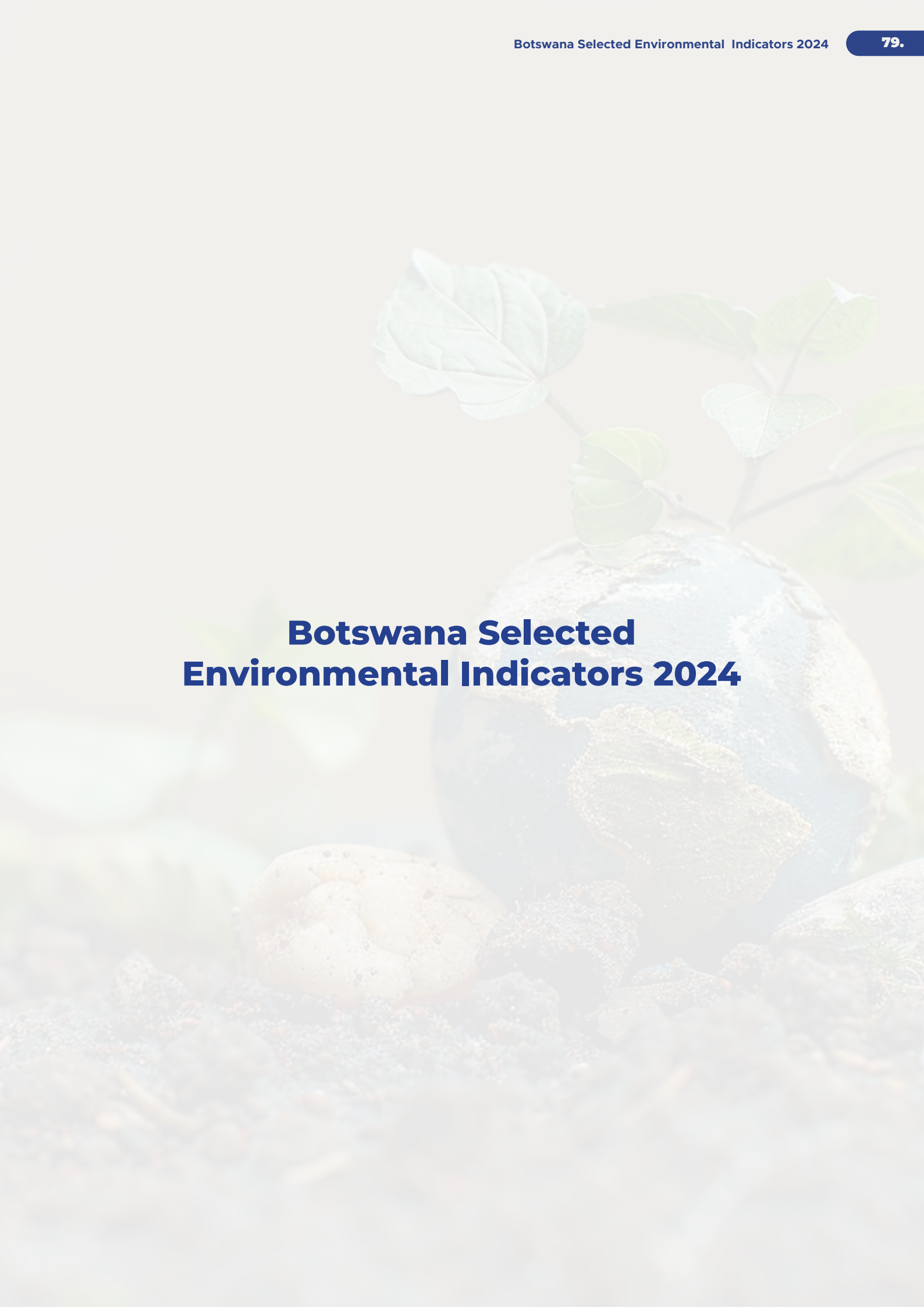
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