



NAMIBIA URBAN LAND STATISTICS BULLETIN

PRELIMINARY

VOLUME 1
ISSUE 1A
DECEMBER 2021



EXECUTIVE SUMMARY

Namibia can broadly be divided into three land classes of state land, communal and commercial agriculture land. State land can further be subdivided into broad classes of parks, restricted areas and urban land. Urban land is any proclaimed land that is held under the various local authorities and governed in accordance with the Local Authority Act, No. 23 of 1992 as amended.

In 2018, it was estimated that urban land, excluding the expanded city boundary of Windhoek, accounted for about 1% of the total land mass or 795,244 hectares. The country has experienced rapid urbanisation that has exerted pressure on the availability of urban land and services. The provision of land and basic services, inadequate housing, lack of land tenure security resulting in mushrooming of informal settlements, and inadequate basic urban infrastructure capacity are some of the challenges. The NSA produced the first Land Statistics Booklet in September 2018. This was the first step towards a deliberate effort to regularly publish land statistics generated through the NSDI. The plan has not gone well due to the unwillingness of some key data custodians to fully participate in the NSDI government initiative.

Despite the above challenge, this urban land statistics bulletin is a continuation of the 2018 land statistics booklet and provides a summary of available urban zoned land in nine (9) out of the fourteen (14) regions of the country. The bulletin provides summaries of the number of serviced plots in all the proclaimed urban areas of the following regions: Erongo, Kunene, Omusati, Oshana, Oshikoto, Ohangwena, Kavango West, Kavango East and Zambezi. The emphasis of the publication is mainly on residential land while also accounting for other urban land uses. The bulletin also delivers a comparison of the size of zoned urban land as a proportion to the remaining townland in each urban locality.

In terms of town planning cadastral data, NSA could only manage to acquire data from 9 regions between November 2020 and February 2021. The remaining 5 regions of Hardap, !Karas, Khomas, Omaheke and Otjozondjupa are expected to be covered during the window of November 2021 to February 2022. I must indicate that land use changes continuously; thus the statistics provided in this bulletin are based on the harmonised digital town planning data acquired during the mentioned reference period. I wish to express my utmost appreciation for the cooperation NSA received from some of the Local Authorities during this compilation.

It is important that Local Authorities move towards the digitalisation of their land records by setting up their Geographic Information Systems (GIS) to aid in better urban land management, spatial planning and national reporting. Consequently, I pledge the Agency's readiness to support any capacity building effort aimed at improving spatial data management and reporting at local, regional and national level.



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LIST OF ACRONYMS

GIS	Geographic Information System
MURD	Ministry of Urban and Rural Development
NSA	Namibia Statistics Agency
NSDI	National Spatial Data Infrastructure
PDF	Portable Document File

DEFINITIONS OF KEY TERMS

AutoCAD	A computer-aided design (CAD) program used for 2 and 3-dimension design and drafting.
Standardised Land Use Zones	Business, Institutional, Open Spaces, Residential, Street, Nature Reserve, Urban Agriculture
Land Use	The surface utilization of all developed and vacant land on a specific point, at a given time and space.
Local Authority	See “urban” below.
Urban	In Namibia, any area that is proclaimed by government in accordance with the Local Authority Act, No. 23 of 1992 as amended. The three official classifications in Namibia are municipalities, towns and villages.
Zoning	a method of urban planning in which a local authority or other tier of government divides land into areas called zones based on the preferred land use, each of which has a set of regulations for new development.
Zoning Scheme	A document consisting of land use regulations regarding the use of each piece of land, a register which contains a record of all departures granted from the original use on that piece of land and the zoning maps which indicate zoning and other stipulations for the areas.

KEY UNITS OF MEASUREMENTS

Only one unit of measurement is used throughout this bulletin. Urban land parcels are consolidated per land use zone and calculated in hectares. The townland boundaries and aggregated land use zones of each urban land use zone are also calculated in hectares.

1. SCOPE OF THE BULLETIN

This publication only covers urban land for thirty (30) Local Authorities in 9 regions of Erongo, Kavango East, Kavango West, Kunene, Ohangwena, Omusati, Oshana, Oshikoto and Zambezi. The bulletin only covers municipalities, towns and village councils. Proclaimed settlement areas held under the various regional councils are not included. Similarly, only urban land use information and data available in the National Spatial Data Infrastructure (NSDI) was used to compile the bulletin.

The data was collected during November 2020 and February 2021. Some of the local authorities indicated that they have submitted new townships and extensions for approval during the reference period. These proposed townships and extensions were excluded from this publication because of the potential changes or recommendations that might arise from the approval process. Therefore only approved zoned land parcels were considered throughout this publication.

2. DRIVERS TO THIS URBAN LAND STATISTICS BULLETIN

There is a general consensus that publicly accessible housing and land related statistics in Namibia are very limited. Namibia Statistics Agency (NSA) is mandated by the Statistics Act, No. 9 of 2011 to coordinate the establishment of the National Spatial Data Infrastructure as means to facilitate the capturing, management, distribution and use of spatial information in Namibia. Since 2015, the Agency has actively assembled an institutional and operational framework for this coordination. In 2017, the Agency managed to centralise access to and distribution of publicly available spatial data by developing an online national geographic portal (<https://digitalnamibia.nsa.org.na>). The geoportal has attracted geospatial information access not only within the country but globally. To this end, Namibia is highly regarded on the African continent.

In 2018, through the NSDI, the NSA was able to produce the first National Land Statistics Booklet, detailing the historical land allocation including assessing the status of the land reform programme in the country. The booklet provided basic land statistics on land classification and land tenure with emphasis on the Agricultural (Commercial) land and ongoing government land reform programmes/initiatives. Because of the challenges in accessing stakeholder land databases at the time, the publication did not cover urban land.

This bulletin is therefore aimed at validating of and providing some basic urban land statistics available in the NSDI as a means to start a public and institutional debate on the quality, relevance and accessibility of land databases for national statistical reporting. There has been a reluctance by NSDI participating government institutions to avail spatial data and statistics as per the Statistics Act, and this has weakened national reporting. Similarly, there are perceptible poor data management practices among data custodians which could explain this hesitancy. Therefore it is anticipated that the bulletin will trigger regular and transparent land statistics reporting in the country. The data used to compute statistics in the bulletin are used as-is and the methodology is described in the next chapter.

3. METHODOLOGY

3.1 Data Collection and Classification

The main data source of this bulletin is the land use zoning data from the Local Authorities in Namibia. The Local Authorities consist of municipalities, towns and village councils that are governed in accordance with the Local Authorities Act, No. 23 of 1992 as amended. There are 57 proclaimed Local Authorities in Namibia consisting of 13 Municipalities or 31.6%, 26 Towns or 45.6% and 18 Village Councils or 22.8% (Figure 3.1.1).

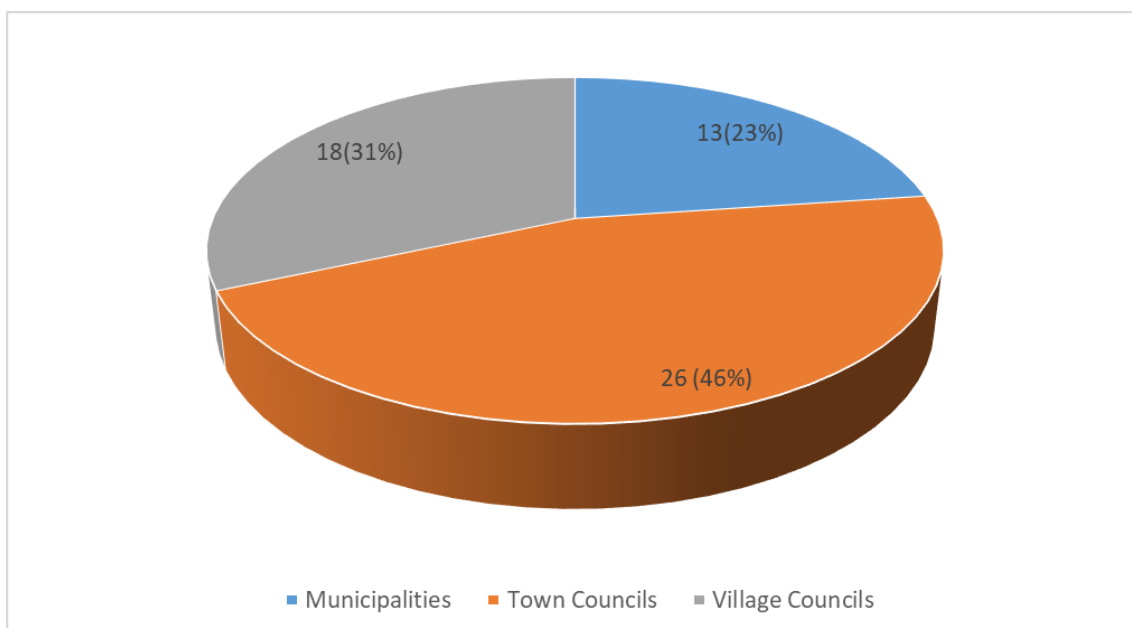


Figure 3.1.1 Number of Local Authorities by Status in Namibia

The NSA collected urban land use zoning spatial data from nine (9) regions, namely Erongo, Kavango East, Kavango West, Kunene, Ohangwena, Omusati, Oshana, Oshikoto and Zambezi. The data formed part of what exist in the NSDI and came in different formats such as Geographic Information System (GIS) shapefiles, Portable Document Formats (PDFs) and AutoCAD formats. A total of 192,261 plots were examined from 30 Local Authorities representing 53% of the total proclaimed Local Authorities in the country. Figure 3.1.2 below shows the distribution of the assessed Local Authorities by their statuses.

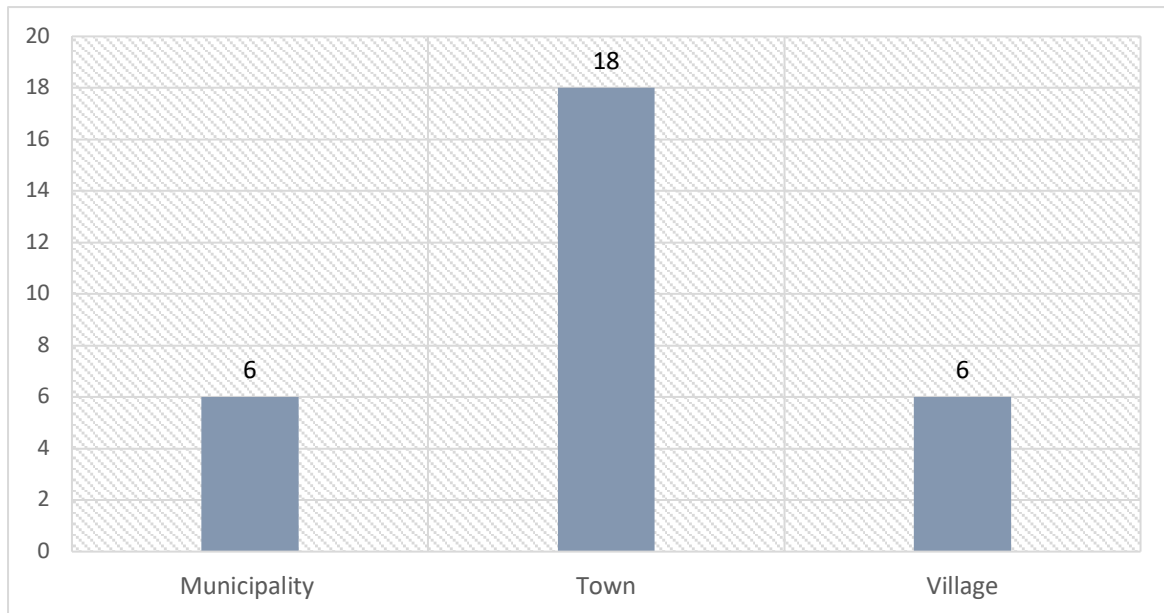


Figure 3.1.2 Number of assessed Local Authorities by Status in Namibia

Erongo Region has most of the urban localities that were assessed followed by Omusati and Kunene, while Kavango West has only one urban locality which is Nkurenkuru (Figure 3.1.3).

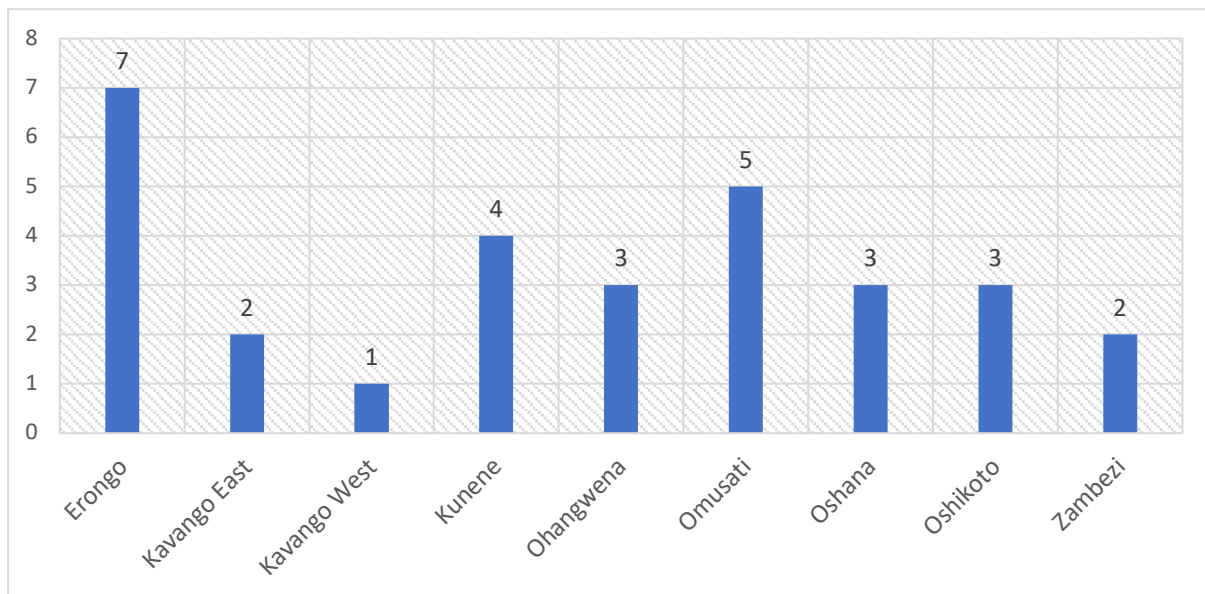


Figure 3.1.3 Number of assessed Urban Localities by Region

3.2 Data Conversion

It was found that zoning maps and information in most Local authorities are stored and derived from a file stored as PDF. AutoCAD software formatted files are also used while a few Local Authorities have GIS software. While the PDF format is easily managed, the format is not ideal for storing and managing geographic information. The format is static in nature and does not provide any logical structure or relationship between different land classes as they happen in the real world. A GIS is an intelligent

way of storing locational information as it retains feature relationships that follow real-world behaviours, allowing for asking and answering spatial related questions.

Data was obtained and converted from AutoCAD files to GIS shapefiles. A GIS database was created to store all the converted and processed files. The different land zoning files were converted to GIS file format to allow for geometric calculations and generation of spatial and non-spatial statistics. The zoning tables were linked to their respectful parcels of land or plots using the PDF files from the Local Authorities as reference.

3.3 Harmonisation of Zoning Schemes

A zoning scheme is a tool or way of classifying different pieces of land within the boundary of a local authority based on the best future or planned land use. Every piece of land in a local authority must be accounted for in terms of land tenure, land use, land value, land size and any other basic characteristics. It was evident that different local authorities use different zoning schemes to classify their land. The difference in zoning schemes makes it difficult to statistically report and compare land uses across the country. *See the legend in Figure 3.3.1 below.*



Figure-3.3.1 Example zoning map in a GIS software with unstandardised land uses

The NSA and Ministry of Urban and Rural Development (MURD) are tasked to develop a National Housing Information System which will provide statistics on housing stock, land use, housing needs and informal settlements. The project is at an advanced stage and is anticipated to change or improve the existing workflows in all the relevant stakeholder institutions that are dealing with land and housing information. The system will centralise land and housing statistics nationally.

Zoning schemes which were made available by the Local Authorities in 9 regions during November 2020 and February 2021 were used to organise the data. A stakeholder workshop organised by the NSA together with MURD in June 2021 recommended for the harmonisation of the more than 128 land zoning classes in the above 9 regions. The harmonisation exercise shall be extended to the rest

of the country in order to standardise geostatistical reports. Two levels of classification were created. Seven (7) standard classes at level 1 and subclasses at level 2 were formulated as shown in Table 3.3.1.

Table 3.3.1 Harmonised zoning information

LEVEL 1	LEVEL 2	SECONDARY USE
1.1 Residential	1.1.1 Single Residential 1.1.2 General Residential 1.1.3 Rural Residential	Residential Formal Residential Informal Home-Based Business
1.2 Street		
1.3 Open Space	1.3.1 Public Open Space 1.3.2 Private Open Space	Sports Field
1.4 Business	1.4.1 Light Industrial 1.4.2 Heavy Industrial 1.4.3 Office 1.4.4 Restricted Business 1.4.5 General Business	
1.5 Institutional	1.5.1 Private 1.5.2 Public 1.5.3 Government 1.5.4 Local Authority	
1.6 Nature Reserves		
1.7 Urban Agriculture		

It was recommended that Local Authorities can use their area-specific zoning schemes to classify their land but must have aggregated standard level 1 and level 2 classes for comparability and statistical purposes. NSA converted all the data received into one file and performed a reclassification exercise to classify land into the associated parent land use zones at level 1. Calculations were made based on the aggregated land use zones at level 1 using zoning information from level 2.

3.4 Generation of Summary tables and graphs

Following the completion of data preparation in a GIS software, database queries were performed to derive the different summaries based on a predefined tabulation plan. This involved the counting of each land use zone as well as calculating geometric areas. It must be mentioned here that the calculated sizes of land parcels are a database reflection only and might slightly deviate from the registered sizes in the Deeds Office. The generated tables were exported to Microsoft Excel for further analysis and generation of tables, graphs and charts.

4. LIMITATIONS

There are a number of limitations to this publication. Firstly, the bulletin does not cover Hardap, //Kharas, Khomas, Omaheke and Otjozondjupa regions due to lack of data. Data collection for these regions has commenced and was still ongoing at the time of publication. Therefore the bulletin only covers data that was available in the NSDI in digital form. Secondly, it must be noted that at the time of data collection and compilation, conditions in various Local Authorities might have changed. Thus, the statistics contained in the bulletin might have slightly changed as well. The bulletin will consequently serve as a tool for data validation by NSA and data custodians.

Another limitation is the inability to link ownership information to the urban land as a means to compare land holding within the assessed urban localities. Work on linking land tenure, value and general ownership information is expected to commence separately. The last limitation faced is the lack of properly managed GIS databases in many Local Authorities to effectively manage land. Most Local Authorities make use of the PDF file format to visualise and store their zoning maps. This resulted in prolonged data conversion and processing work before any analysis could be done.

It must be reiterated that the publication is only a reflection of the digital data that is within the NSDI as of February 2021. The different standings in our Local Authorities might have changed after the data collection period. It was noted that some plots exist in Local authorities which are partly serviced. These are not included in this bulletin as they are still in the process of approval. However, the comparative statistics computed should be reflective enough to provide a general overview of the conditions in our urban localities. The computation of townland and zoning geometric data might introduce projection and rounding errors. These are generally assumed to be insignificant over generalised large areas and should not distort the general representation.

Furthermore, the digital data speaks to the need for quality assessment of the zoning information nationally including the evaluation of the townland geometries. It was observed that there are boundary issues between townland boundaries and also townland boundaries and constituency boundaries. Noticeable was the topological issues observed between the townland boundary of Ondangwa and Oniipa and overlapping Rundu townland with the constituency boundary. In such instances the zoning information was used to reclassify the data.

5. GENERAL STATUS OF URBAN LAND STATISTICS

This section provides a summary of the outcome of the analysis made on the townland and land use zoning information. The 9 regions have a combined townland size of 370,452.9 hectares with 71,686.8 hectares of already zoned, representing 19.4% of the total urban land. In total 192,261 plots in 9 regions were classified into standardised land use classes to derive summaries by land use, locality and region. The townland sizes are compared with the size of zoned land for each region. The following sections provide the summary descriptive statistics.

5.1 Size and Condition of Urban Land by Land Service Status and Region

Table 5.1.1: Distribution of townland by service status and Region

Region Name	Townland Boundary Size (Ha)	Townland Size (%)	Size of Zoned Land (Ha)	Urban Zoned Land (%)	Urban Un-zoned Land (%)
Erongo	183793.4	49.6	45144.6	24.6	75.4
Kavango East	17450.6	4.7	4249.9	24.4	75.6
Kavango West	4912.2	1.3	1662.9	33.9	66.1
Kunene	43395.2	11.7	1020.4	2.4	97.6
Ohangwena	13056.4	3.5	2853.5	21.9	78.1
Omusati	13750.7	3.7	3123.7	22.6	77.4
Oshana	19952.9	5.4	9166.3	45.9	54.1
Oshikoto	68238.7	18.4	2251.8	3.3	96.7
Zambezi	5902.8	1.6	2223.5	37.7	62.3
Total	370452.9	100.0	71686.8	19.4	80.6

Formulations:

$$** \text{ Townland Boundary Size (\%)} = \frac{\text{Townland Size of the Region}}{\text{Total Townland Size for all 9 Regions}}$$

$$** \text{ Size of Zoned Land (\%)} = \frac{\text{Zoned Townland Size of the Region}}{\text{Total Townland Size for the Region}}$$

Table 5.1.1 compares the size of zoned urban land versus un-zoned/unallocated land use by region and total urban land size. Erongo region has the largest urban land at 183,793.4 hectares, making up 49.6% of total urban land in the 9 regions followed by Oshikoto at 68,238.7 hectares or 18.4%. Kavango West and Zambezi regions contributes only 1.3% and 1.6% of the total townlands among the 9 regions at 4,912.2 and 5,902.8 hectares respectively. The percentage of townland size by region is graphically shown in Figure 5.1.1 below.

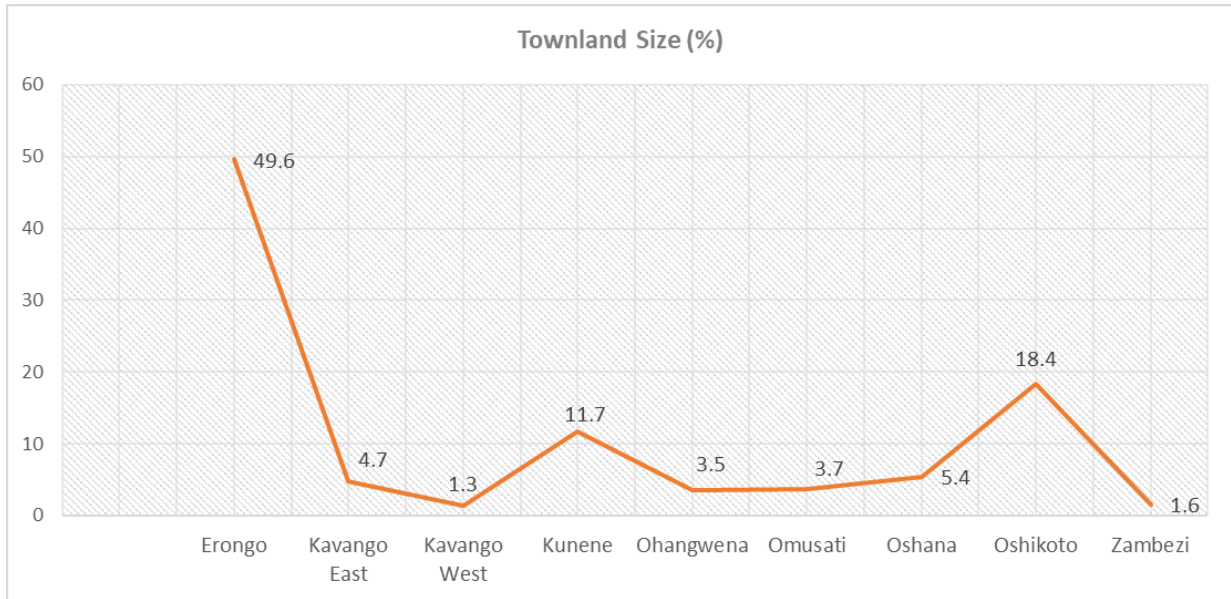


Figure 5.1.1: Percentage of Townland Size by Region

In terms of zoning, Figure 5.1.2 below shows that Kunene Region has the most un-zoned urban land among the 9 regions at 97.6% followed by Oshikoto at 96.7%. Oshana and Zambezi regions have more zoned land at 45.9% and 37.7% of their townlands already zoned. This means that the two regions have the highest predetermined land uses for their urban areas when compared to other regions. This might also be an indication that the two regions are running out of urban land if most of the predetermined land uses are allocated ownership. This publication does not include any linkage between zoning and ownership information.

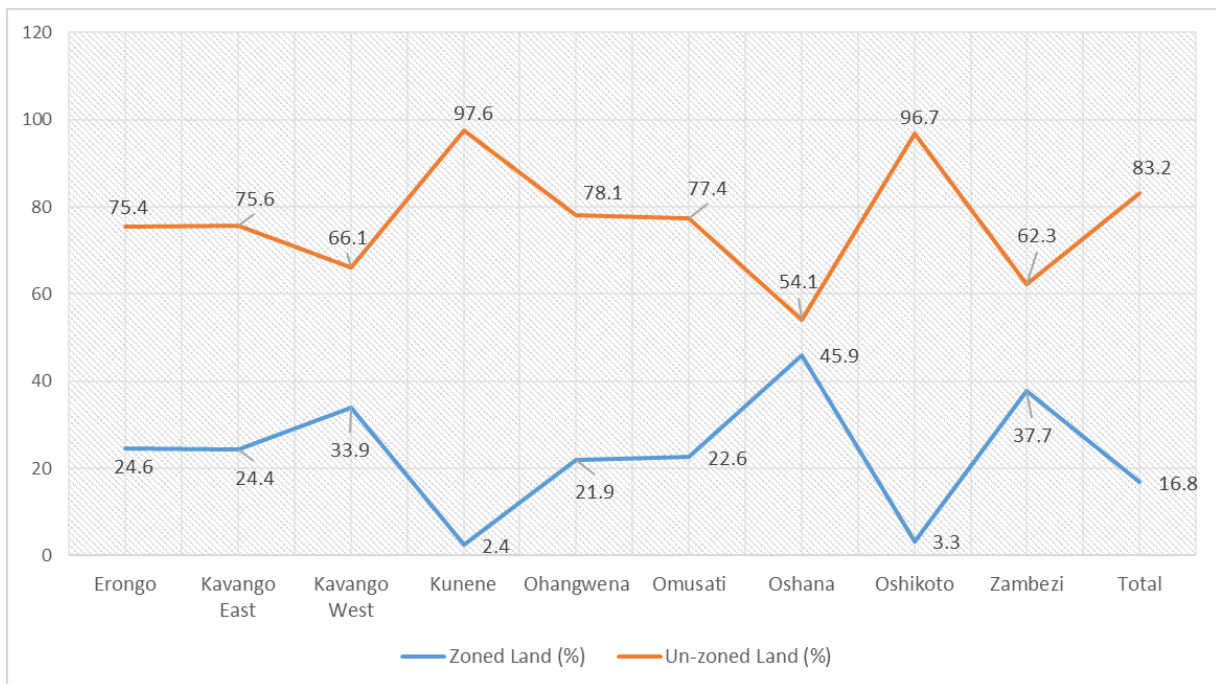


Figure 5.1.2: Percentage Comparison of Townland boundary to zoned-urban land

Figure 5.1.3 shows the regional ratios of townland size to zoned urban land in the 9 regions. This indicator provide further clarity on the remaining urban land by region. This is calculated as follows:

$$\text{Ratio of Zoned Urban Land } x = \frac{\text{Townland Size (Ha)}}{\text{Size of Urban Zoned Land}}$$

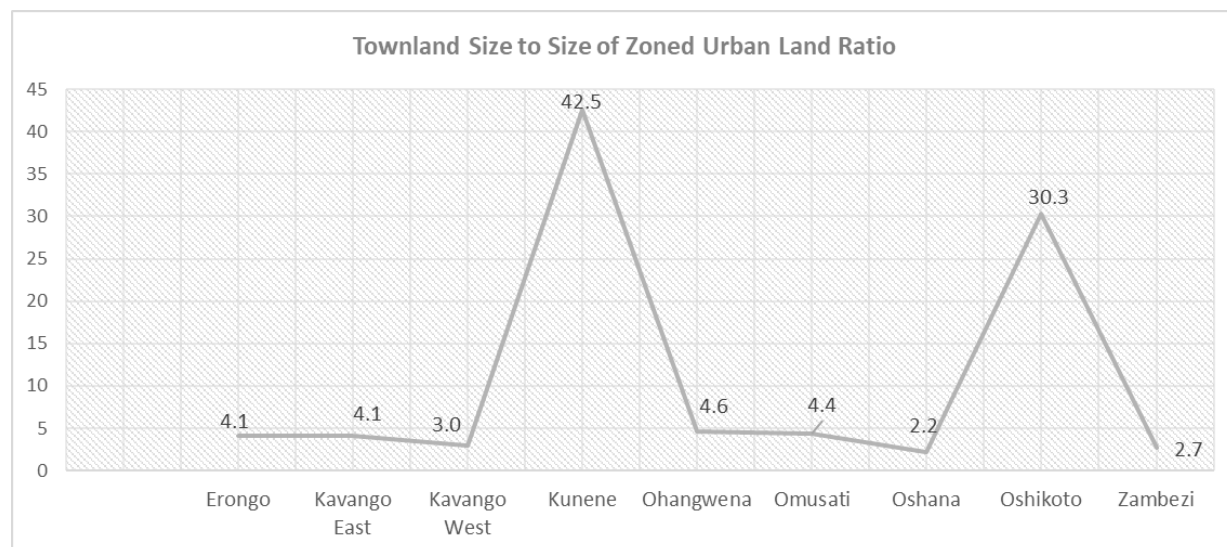


Figure 5.1.3: Ratio of zoned-urban land to townland size by Region

The ratios quantifies the amount of remaining urban land by region. Kunene zoned urban land is 42.5 times smaller than the size of urban land in the region at a ratio of 1:42.5 followed by Oshikoto at 1:30.3. The ratios are smaller in Oshana at 1:2.2 and Zambezi at 1:2.7 signifying that the two regions have less un-zoned land remaining.

5.2 Distribution of Zoned Urban Plots by Region

Table 5.2.1 provides information on the distribution of urban plots by region. The total number of urban plots examined as indicated earlier is 192,261 covering an area of 71,686.8 hectares of land. Erongo has more urban plots at 51,570 followed by Oshana region at 44,768 plots. Kavango West and Kunene have the least urban plots compared to the other 7 regions.

Table 5.2.1: Number of zoned urban plots by Region

Region	Number of Urban Zoned Plots	Urban Zoned Plots (%)
Erongo	51570	26.8
Kavango East	26158	13.6
Kavango West	6281	3.3
Kunene	6662	3.5
Ohangwena	15627	8.1
Omusati	17153	8.9
Oshana	44768	23.3
Oshikoto	12407	6.5
Zambezi	11635	6.1
Total	192261	100.0

****Note:** Number of plots exclude those which are still in the process of formalisation.

In terms of the percentage townland sizes and urban plots, Erongo has more urban plots at 26.8% among the 9 assessed regions. This is followed by Oshana region at 23.3% while Kavango West Region has the least number of urban plots at 3.3% (Figure 5.2.1).

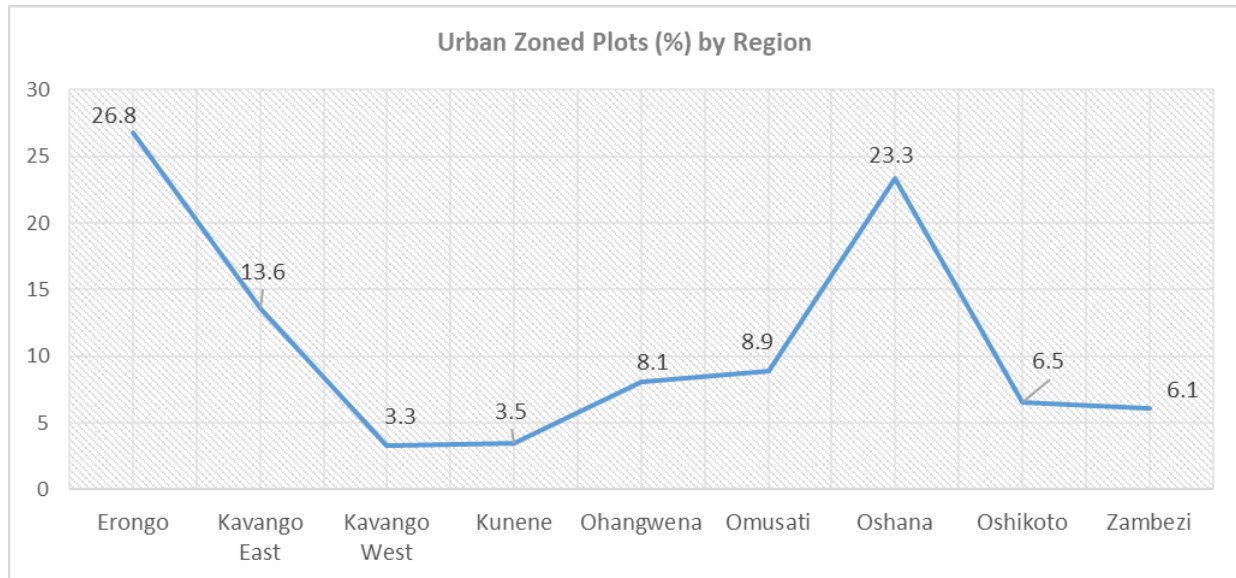


Figure 5.2.1: Percentage of Urban Zoned Plots by Region

5.3 Comparison of Total Urban Plots to Residential Plots by Region

This section provides a comparison between urban plots and urban plots that are assigned for residential purpose as summarised in Table 5.3.1. From the total number of urban plots within each region, Kunene has more residential plots on its zoning scheme at 6,094 plots out of a total of 6,662 plots within the region. Regionally, Erongo has more plots including those that are zoned residential among the 9 regions. This is followed by Oshana region which has 44,768 plots of which 38,843 are zoned residential.

Table 5.3.1 Comparison of Residential Zoned Plots to total Urban Zoned Plots by Region

Region	Total Urban Plots	Number of Residential Plots	Urban Residential Plots (%)
Erongo	51570	42758	89.3
Kavango East	26158	23052	88.1
Kavango West	6281	5101	81.2
Kunene	6662	6094	91.5
Ohangwena	15627	10907	69.8
Omusati	17153	13781	80.3
Oshana	44768	38843	86.8
Oshikoto	12407	10590	85.4
Zambezi	11635	10635	91.4

Total	192261	164360	85.5
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Note that number of plots excludes those which are still in the process of formalisation. Part of Ondangwa in Oshana Region seems to have been displaced into Oshikoto Region along the townland boundary line with Oniipa. The plots covering this part were allocated to Ondangwa. The data layer gap is demonstrated in Figure 5.3.1 below. The data gap expresses data quality issues relating to topology of the townland boundary data layers from stakeholders that need to be resolved.

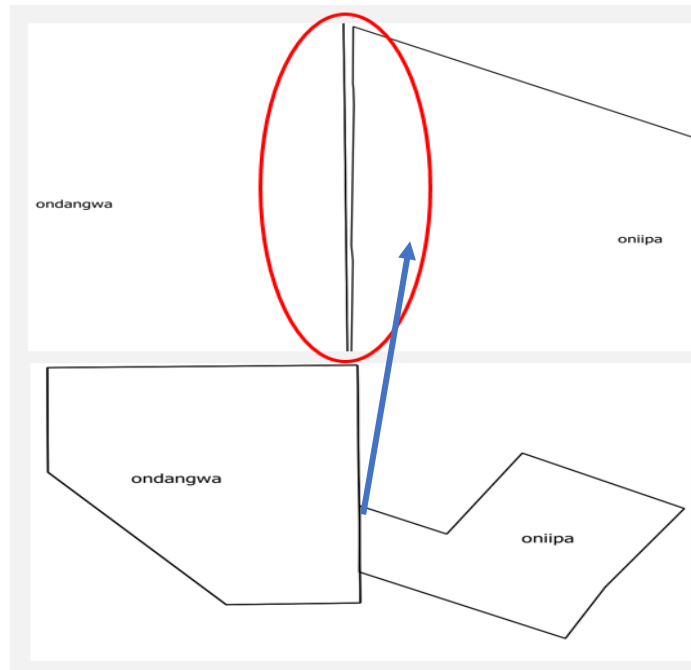


Figure 5.3.1 Observed GIS data gap between Ondangwa and Oniipa in Oshana and Oshikoto Regions

Figure 5.3.2 below shows the percentage distribution of residential plots in graphic form by region. Only Ohangwena region has less than 80% of its plots zoned for residential use. As indicated earlier, Kunene has more residential plots on its zoning scheme at 91.5% followed by Zambezi and Erongo at 91.4% and 89.3% respectively. Ohangwena has more plots for other land uses apart from residential use.

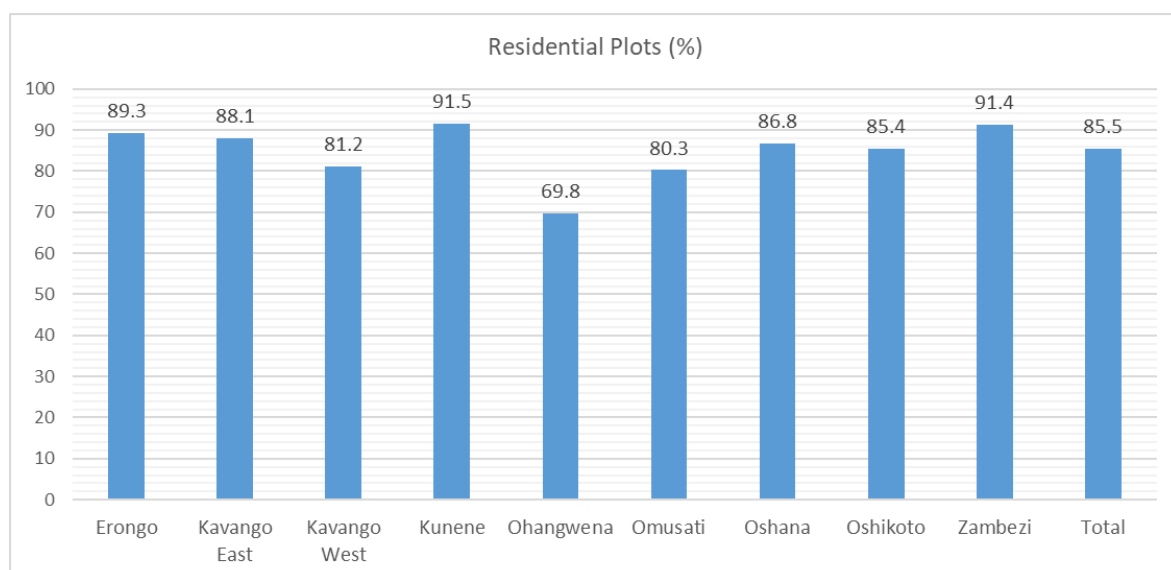


Figure 5.3.2 Percentage distribution of Urban Residential Plots by Region

6. REGIONAL URBAN LAND USE STATISTICS

The following sections provides regional summaries for each of the 9 evaluated regions. The comparison is made at urban locality level within each region. It must be stated here again that the zoning data is based on the digital GIS data within the NSDI. There are a number of urban localities which have demarcated plots which are not fully serviced in terms of electricity, roads, water and sewer connection and are still in the approval process but have included them on their zoning schemes. Some of these plots might have been already offered to beneficiaries. These plots are as much as possible not included in this publication since the purpose is to authoritatively start a dialog among Local Authorities on the quality of digital data contained in their zoning schemes.

6.1 Erongo Region

This subsection provides summaries of the status of urban land in Erongo Region. Arandis, Henties Bay, Karibib, Omaruru, Swakopmund, Usakos and Walvis Bay are the urban localities in the Region covering a total townland size of 183793.4 hectares.

Table 6.1.1 Size and percentage of townland by land use zoning status in Erongo Region

Urban Locality Name	Townland Size (Ha)	Townland (%)	Size of Zoned Land (Ha)	Zoned Urban Land (%)	Unzoned Urban Land (%)
Arandis	3061.5	1.7	947.5	30.9	69.1
Henties Bay	12340.3	6.7	725.2	5.9	94.1
Karibib	11458.3	6.2	1611.5	14.1	85.9
Omaruru	20332.8	11.1	19990.5	98.3	1.7
Swakopmund	19322.3	10.5	5842.2	30.2	69.8
Usakos	6122.0	3.3	482.4	7.9	92.1
Walvis Bay	111156.2	60.5	15545.3	14.0	86.0
Erongo	183793.4	100.0	45144.6	24.6	75.4

Table 6.1.1 shows that the Municipality of Walvis Bay is the largest urban locality in the Region in terms of size as it makes up 60.5% of urban land in the Region at 111,156.2 hectares. Omaruru and Swakopmund each contributes 11.1% at 20,332.8 and 19,322.3 hectares. Arandis and Usakos are the smallest urban localities in the region. This is further elaborated in Figure 6.1.1 below.

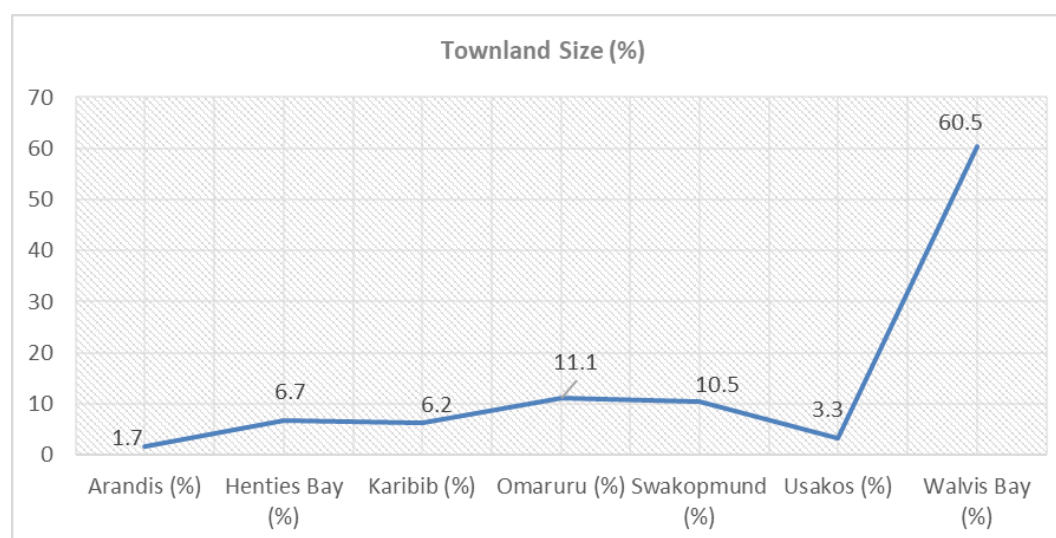


Figure 6.1.1 Percentage of Townland Size by urban Locality in Erongo Region

In terms of zoning, Henties Bay and Usakos are the least zoned urban locality at only 5.9% and 7.9% respectively. Regionally, zoned urban land is at only 24.6%. Figure 6.1.2 below shows a graphic representation of the percentage comparisons of land zoning status by locality name in the region.

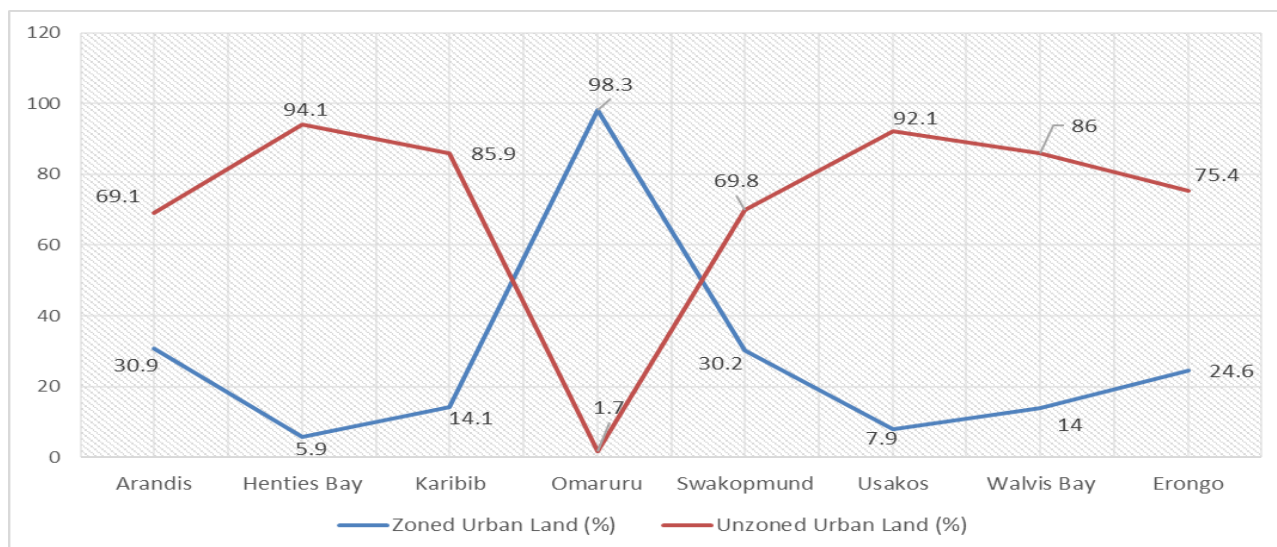


Figure 6.1.2: Percentage comparison of townland by land use zoning status in Erongo Region

The distribution of urban plots in Erongo is provided in Table 6.1.2. The Table shows the distribution of urban plots in Erongo by type and urban locality. The region has a total of 51,570 urban plots situated in the 7 urban localities. The majority of the plots are used for residential purposes totalling 45,357 followed by business at 3,101. Only Walvis Bay does not have plots assigned for urban agriculture while Swakopmund host the majority of them at 166.

Table 6.1.2 Number of Urban Zoned Plots by Urban Locality and Zoning Status in Erongo

Urban Locality Name	Business	Institutional	Open Space	Residential	Street	Urban Agriculture	Erongo
Arandis	403	147	91	2987	5	26	3659
Henties Bay	252	309	74	4672	9	12	5328
Karibib	201	121	70	2584	44	45	3065
Omaruru	239	135	90	4377	62	10	4913
Swakopmund	749	374	252	16042	23	166	17606
Usakos	76	96	15	1062	32	13	1294
Walvis Bay	1181	636	134	13649	105	0	15705
Erongo	3101	1818	726	45357	280	272	51570

Table 6.1.3 shows the percentage distribution of zoned urban plots based on Table 6.1.2 above. Swakopmund has the highest number of residential plots at 35.4% followed by Walvis Bay at 30.1% while Usakos and Karibib have less residential plots at 2.3% and 5.7% respectively. The majority of business zoned urban plots are situated in Walvis Bay at 38.1% followed by Swakopmund at 24.2%.

Table 6.1.3: Percentage distribution of urban zoned plots by urban locality in Erongo Region

Urban Locality Name	Business (%)	Institutional (%)	Open Space (%)	Residential (%)	Street (%)	Urban Agriculture (%)	Erongo (%)
Arandis	13.0	8.1	12.5	6.6	1.7	9.6	7.1
Henties Bay	8.1	17.0	10.2	10.3	3.0	4.4	10.3
Karibib	6.5	6.7	9.6	5.7	14.9	16.5	5.9
Omaruru	7.7	7.4	12.4	9.7	20.9	3.7	9.5
Swakopmund	24.2	20.6	34.7	35.4	7.8	61.0	34.1
Usakos	2.5	5.3	2.1	2.3	10.8	4.8	2.5
Walvis Bay	38.1	35.0	18.5	30.1	40.9	0.0	30.5

Table 6.3 shows the distribution of urban plots in Erongo by land use or zoning type. Swakopmund has more residential plots in the region contributing 35.4% of the regional total, followed by Walvis Bay at 30.1%. Usakos has smallest number of residential plots, only accounting for 2.3%. Karibib, Arandis, Omaruru and Henties Bay are fairly of the same size in terms of residential plots ranging from 5.7% to 10.3% (Figure 6.3).

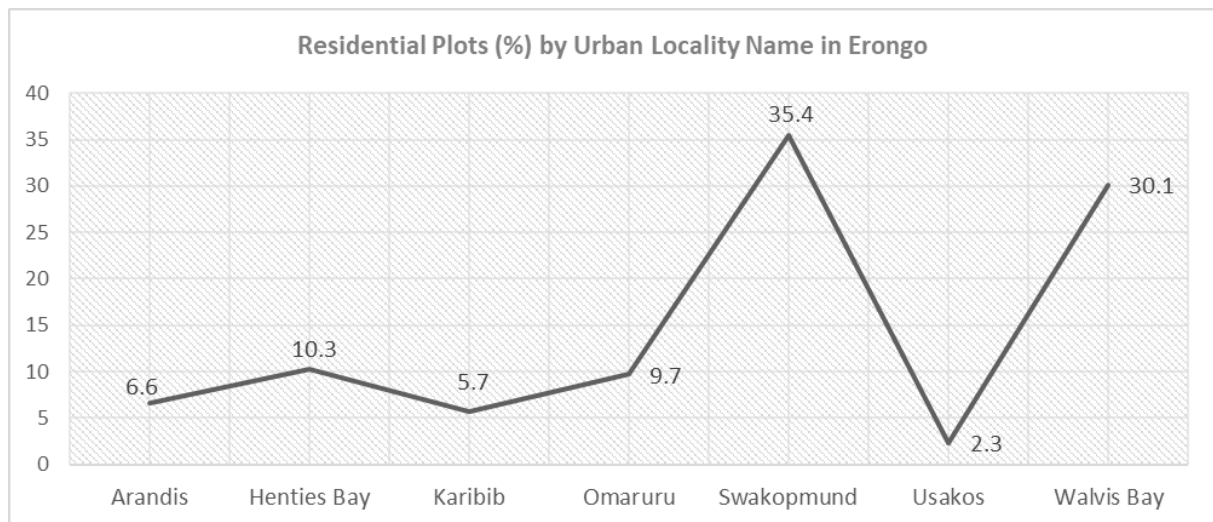


Figure 6.1.3: Percentage distribution of Residential Plots by urban locality in Erongo Region

6.2 Kavango East Region

This subsection provides summaries of urban land in Kavango East Region. Rundu and Divundu are the only two urban localities in the Region.

Table 6.2.1 Size and percentage of townland by land use status in Kavango East

Urban Locality Name	Townland Size (Ha)	Townland Size (%)	Size of Zoned Urban Land (Ha)	Zoned Urban Land (%)	Not zoned Land
Divundu	1951.5	11.2	1893.4	97.0	3.0
Rundu	15499	88.8	2357.2	15.2	84.8
Regional	17450.5	100	4250.6	24.4	75.6

Table 6.2.1 shows that Rundu contributes 88.8% of urban land in the region at 15,499.0 hectares compared to Divundu at only 1,951.5 hectares or 11.1%. This is also shown in Figure 6.4 below. Zoned urban land in the region only accounts for 24.4% compared to un-zoned land of 75.6%. Divundu has almost its land zoned at 97.0% compared to Rundu which is at 15.2%. The percentage comparisons of townland sizes is shown in Figure 6.2.1.

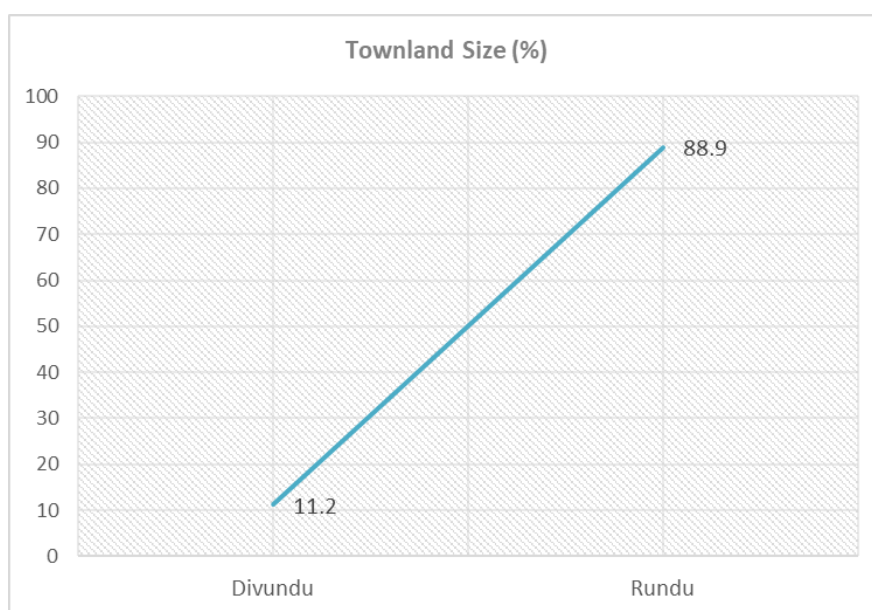


Figure 6.2.1 Percentage of Townland Size by urban Locality in Kavango East Region

Table 6.2.2 Number of Urban Zoned Plots by Urban Locality in Kavango East Region

Urban Locality Name	Business	Institutional	Open Space	Residential	Street	Urban Agriculture	Regional
Divundu	163	39	40	759	0	0	1001
Rundu	1791	435	553	22293	55	30	25157
Regional	1954	474	593	23052	55	30	26158

Table 6.2.3 Number of Zoned Plots by Urban Locality and Zoning Status in Kavango East Region

Urban Locality Name	Business (%)	Institutional (%)	Open Space (%)	Residential (%)	Street (%)	Urban Agriculture (%)	Regional (%)
Divundu	8.3	8.2	6.7	3.3	0.0	0.0	3.8
Rundu	91.7	91.8	93.3	96.7	100.0	100.0	96.2

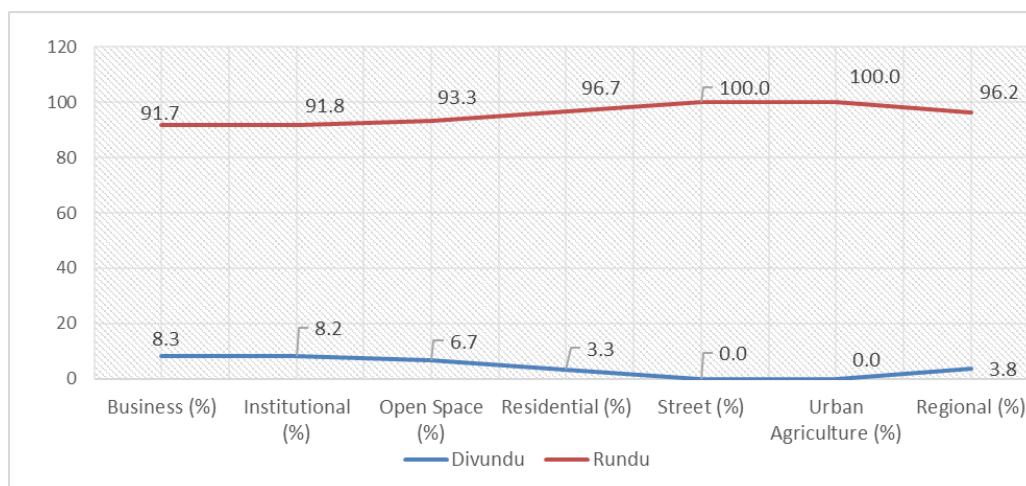


Figure 6.2.2: Percentage distribution of zoned plots by urban locality and land use in Kavango East Region

Table 6.2.2 shows the distribution of urban plots in Kavango East by type and urban locality while Table 6.2.3 shows the percentage distribution of the same plots. The region has a total of 26,158 urban plots with Rundu holding 96.2% of them. The majority of the plots are used for residential purposes totalling 23,052 followed by business at 1,954. At regional level, urban agriculture is allocated 30 plots, and all plots are located in Rundu. No land is allocated for street in Divundu as compared to Rundu. The percentage distribution is further elaborated in Figure 6.2.2 above.

6.3 Kavango West Region

This subsection provides summaries of urban land in Kavango West Region. Nkurenkuru is the only urban locality in the Region and has all the 7 land zoning classes of business, institutional, natural reserve, open space, residential, street and urban agriculture.

Table 6.3.1 Size and percentage of townland by land use status in Kavango West

Urban Locality Name	Townland Size(Ha)	Townland Size (%)	Size of Zoned Land (Ha)	Urban Zoned Land (%)	Urban Un-zoned Land (%)
Nkurenkuru	4912.2	100.0	1662.9	33.9	66.1
Regional	4912.2	100.0	166.9	33.9	66.1

Table 6.3.1 shows that Nkurenkuru contributes 100% of all urban land in the region at 4912.2 hectares as it is the only local authority. The town has only utilised 33.9% or 1662.9 hectares of its townland boundary.

Table 6.3.2 Number of Urban Zoned Plots by Urban Locality and Zoning Status in Kavango West

Zoning Class	Nkurenkuru	Kavango West
Business	644	644
Institutional	222	222
Nature Reserve	1	1
Open Space	264	264
Residential	5101	5101
Street	6	6
Urban Agriculture	43	43
Kavango West	6281	6281

Table 6.3.2 shows the distribution of urban plots in Kavango West by type and urban locality. The region has a total of 6,281 urban plots. The majority of the plots are used for residential purposes totalling 5,101 followed by business at 644. Nkurenkuru has 43 plots assigned for urban agriculture.

6.4 Kunene Region

This subsection provides summaries of urban land in Kunene Region. Kamanjab, Khorixas, Opuwo and Outjo are the four urban localities in the Region covering a combined land of 43,395.2 hectares. The region has 6,662 urban plots.

Table 6.4.1 Size and percentage of townland by land use status in Kunene

Urban Locality Name	Townland Size(Ha)	Townland Size (%)	Size of Zoned Land (Ha)	Urban Zoned Land (%)	Urban Un-zoned Land (%)
Kamanjab	982.4	2.3	118.7	1.7	98.3
Khorixas	12180.6	28.1	301.5	1.3	98.7
Opuwo	6829.4	15.7	286.7	29.2	70.8
Outjo	23402.8	53.9	313.5	2.6	97.4
Regional	43395.2	100	1020.4	2.3	97.7

Table 6.4.1 shows that Outjo is the biggest urban locality in terms of size and contributes 53.9% of urban land in the Region at 23,402.8 hectares. This is followed by Khorixas at 28.1% or 12,180.6 hectares while Kamanjab is the smallest in size at 982.4 hectares or 2.3%. Figure 6.4.1 shows the percentage size of each urban locality in graphical form.

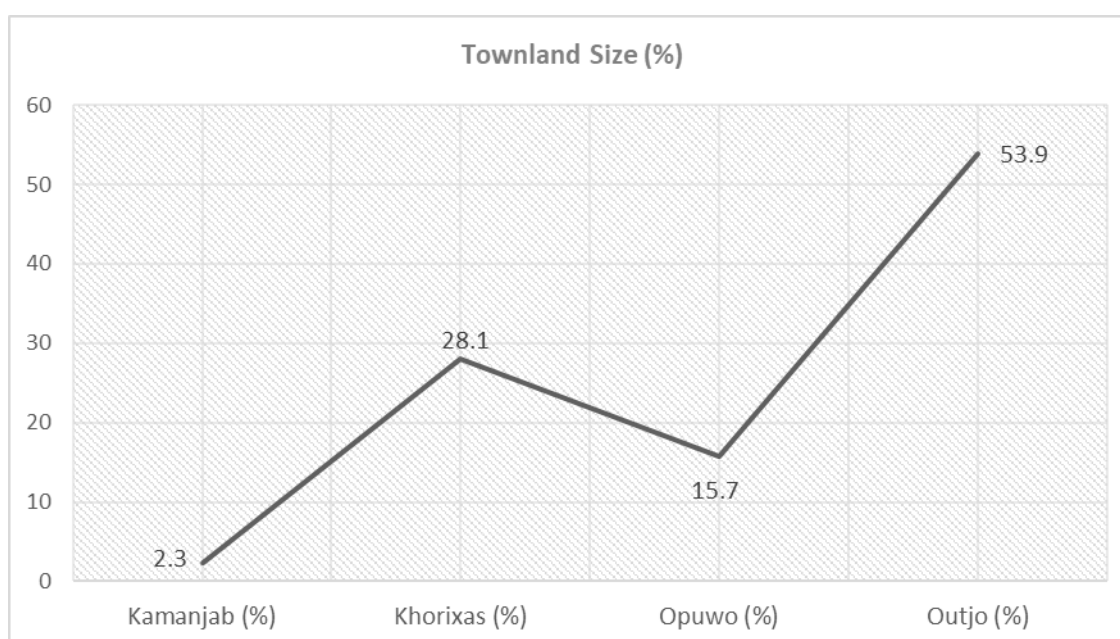


Figure 6.4.1 Percentage of Townland by urban Locality in Kunene Region

In spite of Outjo being the largest urban locality in the region, Opuwo is the most utilised urban locality having 29.2% of its urban land already zoned. Outjo has the least zoned land at 1.3% compared to the size of its townland followed by Kamanjab and Khorixas at 1.7% and 2.6% respectively. In total, Kunene has 97.7% un-zoned urban land (Figure 6.4.2).

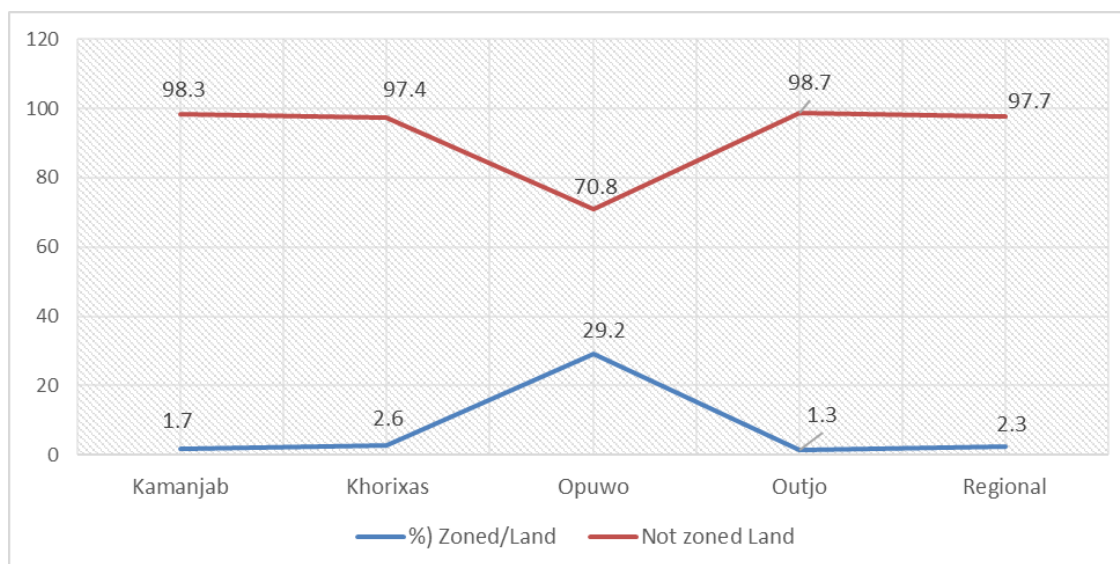


Figure 6.4.2: Percentage distribution land by urban locality and zoning status in Kunene Region

Table 6.4.2 Number of Urban Zoned Plots by Urban Locality and Zoning Status in Kunene

Urban Locality Name	Business	Institutional	Open Space	Residential	Street	Kunene
Kamanjab	50	31	25	1094	0	1200
Khorixas	0	33	14	1958	0	2005
Opuwo	45	64	12	1078	0	1199
Outjo	158	79	49	1964	8	2258
Kunene	253	207	100	6094	8	6662

Table 6.4.2 shows the distribution of urban plots in Kunene by type and urban locality. The region has a total of 6,662 urban plots. As expected, the majority of the plots are used for residential purposes totalling 6,094 followed by business use at 253. None of the urban localities have plots for urban agriculture and only 8 plots in Outjo are classified as streets. Surprisingly, the zoning information shows that Khorixas does not have business plots on the collected GIS data. This could be linked to data quality issues or misclassification of plots on the zoning layer.

Table 6.4.3 Percentage distribution of Urban Zoned Plots by Urban Locality in Kunene Region

Urban Locality Name	Business (%)	Institutional (%)	Open Space (%)	Residential (%)	Street (%)	Kunene (%)
Kamanjab	19.8	15.0	25.0	18.0	0.0	18.0
Khorixas	0.0	15.9	14.0	32.1	0.0	30.1
Opuwo	17.8	30.9	12.0	17.7	0.0	18.0
Outjo	62.5	38.2	49.0	32.2	100.0	33.9

Table 6.4.3 and Figure 6.4.3 all show the percentage distribution of urban zoned plots by zoning type and locality name. The majority of urban zoned plots are found in Outjo and Khorixas at 32.2% and 32.1% while Opuwo has the lowest number at 17.7%. Surprisingly, Khorixas has no business plots on

its zoning scheme. This could be attributed to classification error in the zoning data therefore requires careful examination by the town council.

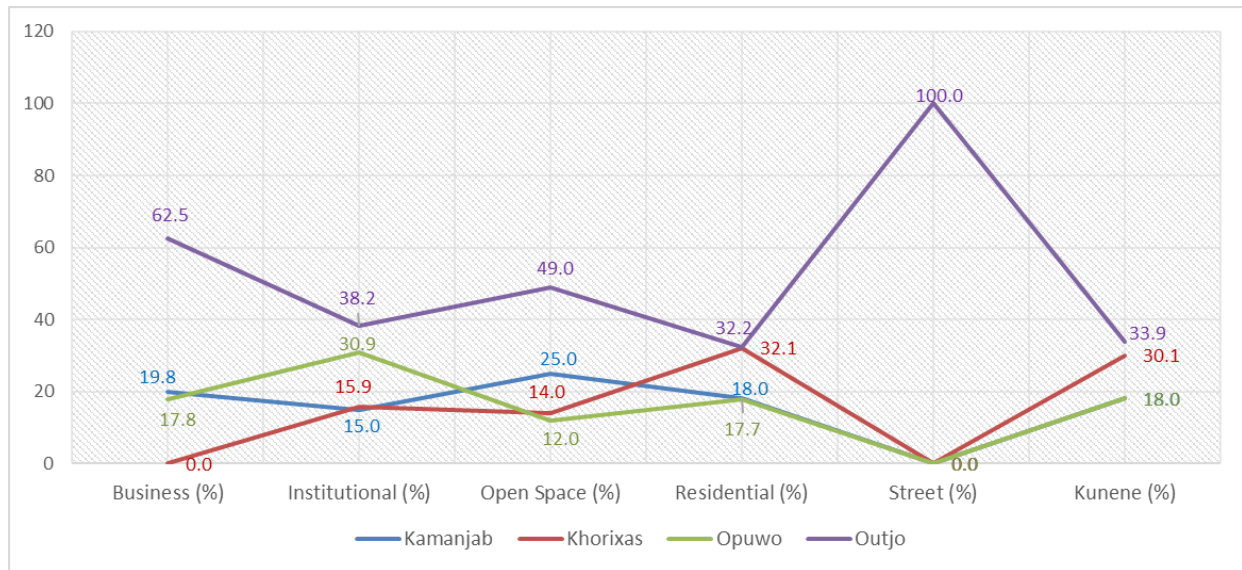


Figure 6.4.3: Percentage distribution land by urban locality and zoning status in Kunene Region

6.5 Ohangwena Region

This subsection provides summaries of urban land as well as mapped urban households in Ohangwena Region. Eenhana, Helao Nafidi, and Okongo are the three urban localities in the Region covering a total townland size of 13,056.4 hectares.

Table 6.5.1 Size and percentage of townland by land use zoning status in Ohangwena Region

Urban Locality Name	Townland Size (Ha)	Townland Size (%)	Size of Urban Zoned Land (Ha)	Urban Zoned Land (%)	Unzoned Urban Land (%)
Eenhana	5205.4	39.9	1428.8	27.4	72.6
Helao Nafidi	7221.2	55.3	1101.4	15.3	84.7
Okongo	629.8	4.8	323.3	51.3	48.7
Ohangwena	13056.4	100.0	2853.5	21.9	78.1

Table 6.5.1 and Figure 6.5.1 show that Helao Nafidi is the biggest urban locality in terms of size and contributes 55.3% of urban land in the Region at 7,221.2 hectares. This is followed by Eenhana at 39.9% or 5,205.4 hectares while Okongo is the smallest in size at 629.8 hectares or 4.8%.

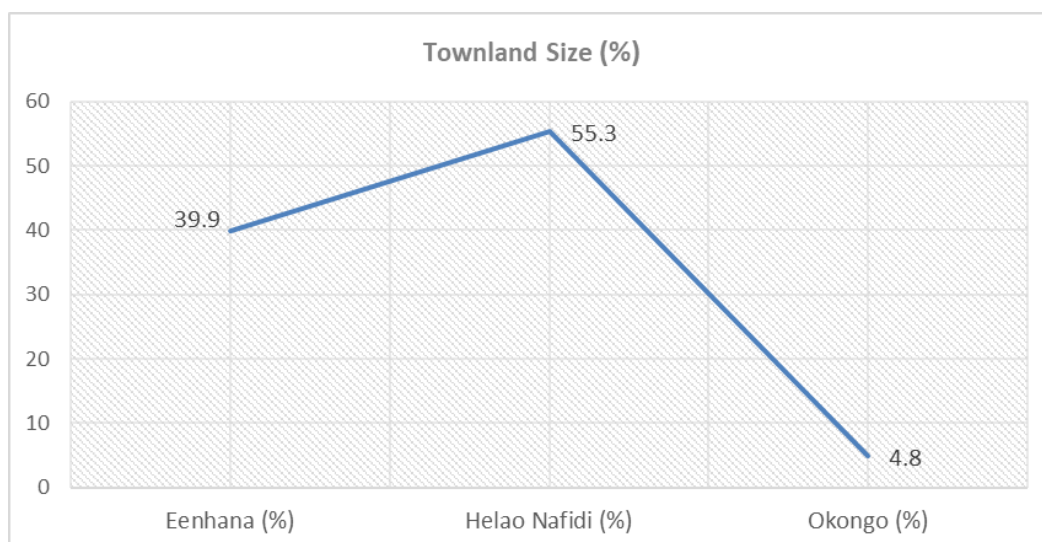


Figure 6.5.1 Percentage of Townland by urban Locality in Ohangwena Region

In terms of zoning, Okongo has predefined land uses for most of its land having 51.3% of its urban land already zoned followed by Eenhana at 27.4%. Regionally, only 21.9% of urban land is classified (Figure 6.5.2).

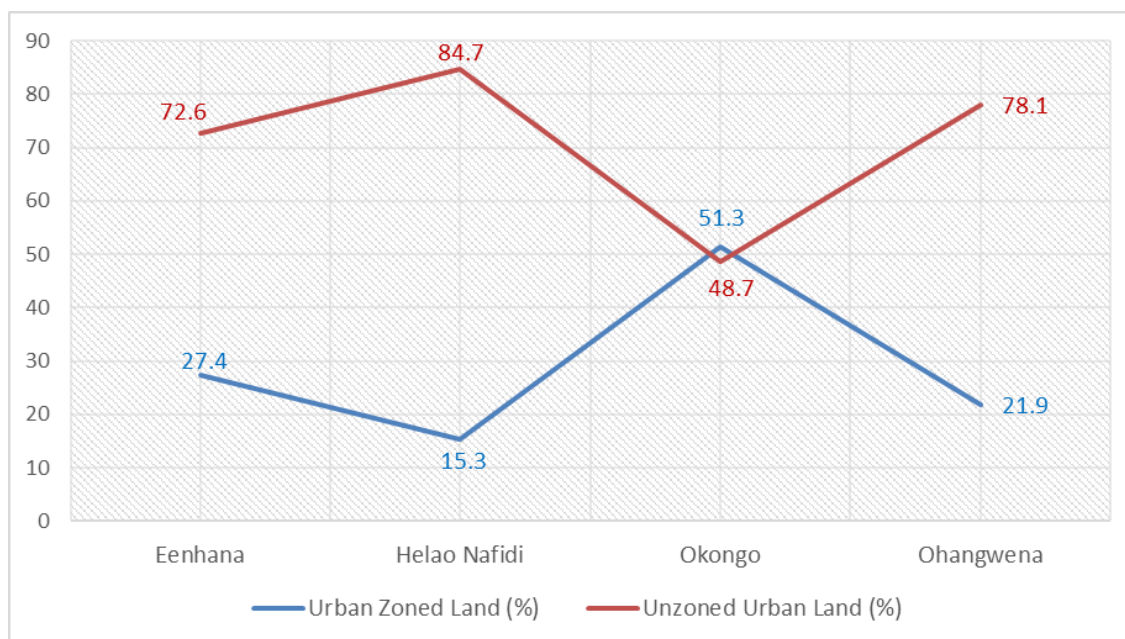


Figure 6.5.2: Percentage distribution land by urban locality and zoning status in Ohangwena Region

Table 6.5.2 Number of Zoned Plots by Urban Locality and Zoning Status in Ohangwena Region

Urban Locality	Business	Institutional	Open Space	Residential	Urban Agriculture	Regional
Eenhana	582	135	254	9507	14	10492
Helao Nafidi	124	3232	0	209	0	3565
Okongo	294	57	28	1191	0	1570
Regional	1000	3424	282	10907	14	15627

Table 6.5.2 shows the distribution of urban plots in Ohangwena by type and urban locality. The region has a total of 15,627 urban plots. As in the case with other regions, the majority of the plots are used for residential purposes amounting to 10,907. The region more institutionally zoned plots at 3,424 compared to business plots at 1,000. Only 14 plots are zoned urban agriculture and all are situated in Eehnana.

Table 6.5.3 Percentage distribution of Urban Zoned Plots by Urban Locality in Ohangwena Region

Urban Locality Name	Business	Institutional	Open Space	Residential	Urban Agriculture	Regional
Eenhana	58.2	3.9	90.1	87.2	100.0	67.1
Helao Nafidi	12.4	94.4	0.0	1.9	0.0	22.8
Okongo	29.4	1.7	9.9	10.9	0.0	10.0

Table 6.5.3 and Figure 6.5.3 provide percentage distribution of the plots by zoning type and urban locality. Helao Nafidi hosts 94.4% of all the institutional plots in Ohangwena Region while Eehnana has most of the residential, open space and business plots. Regionally too, Eenhana has more plots followed by Helao Nafidi. Helao Nafidi has very few residential zoned plots compared to Okongo.

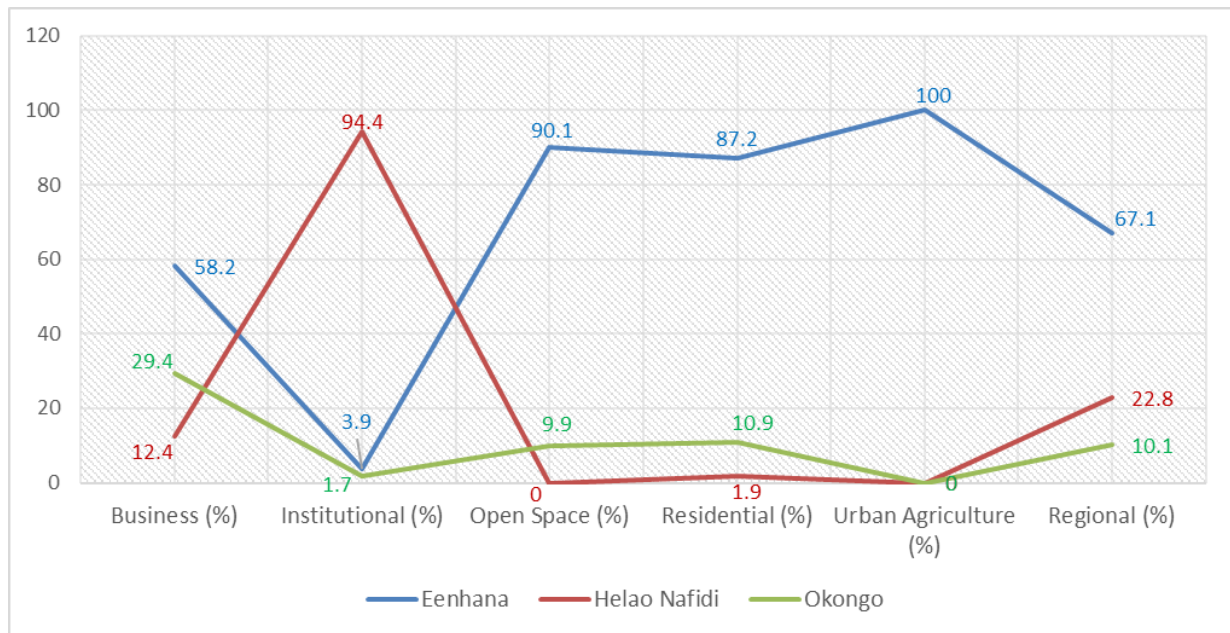


Figure 6.5.3: Percentage distribution Plots by urban locality and zoning status in Ohangwena Region

6.6 Omusati Region

This subsection provides summaries of urban land as well as mapped urban households in Omusati Region. Okahao, Oshikuku, Outapi, Ruacana and Tsandi are the urban localities in the Region covering a total townland size of 13,750.7 hectares.

Table 6.6.1 Size and percentage of townland by land use status in Omusati Region

Urban Locality Name	Townland Size (Ha)	Townland Size (%)	Size of Urban Zoned Land (Ha)	Urban Zoned Land (%)	Unzoned Urban Land (%)
Okahao	4426.5	32.2	700.1	15.8	84.2
Oshikuku	792.5	5.8	356.8	45.0	55.0
Outapi	2908.2	21.1	1577.6	54.2	45.8
Ruacana	4921.0	35.8	298.1	6.1	93.9
Tsandi	702.6	5.1	191.1	27.2	72.8
Regional	13750.7	100.0	3123.7	22.7	77.3

Table 6.6.1 and Figure 6.6.1 show that Ruacana is the biggest urban locality in terms of size as it contributes 4,921.0 hectares or 35.8% of total urban land in the Region. This is followed by Okahao at 32.2% or 4,426.5 hectares while Tsandi is the smallest in size at 702.6 hectares or 5.1%.

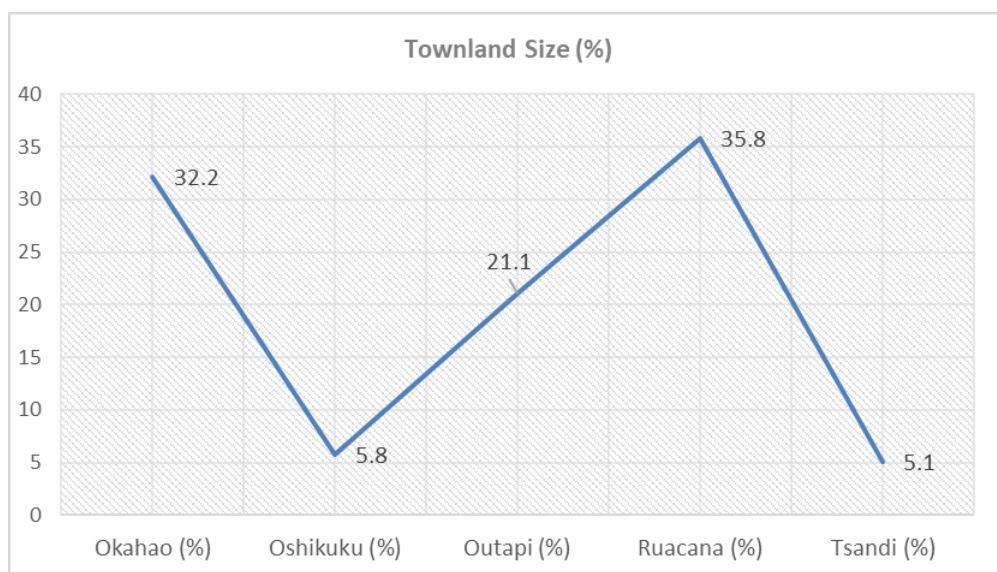


Figure 6.6.1 Percentage of Townland Size by Urban Locality in Omusati Region

In terms of zoning, Figure 6.6.2 below shows that Outapi has zoned most of its land compared to other urban localities having 54.2% of its urban land zoned, followed by Okahao at 45.0%. Regionally, only 22.7% of urban land is zoned or have determined land uses.

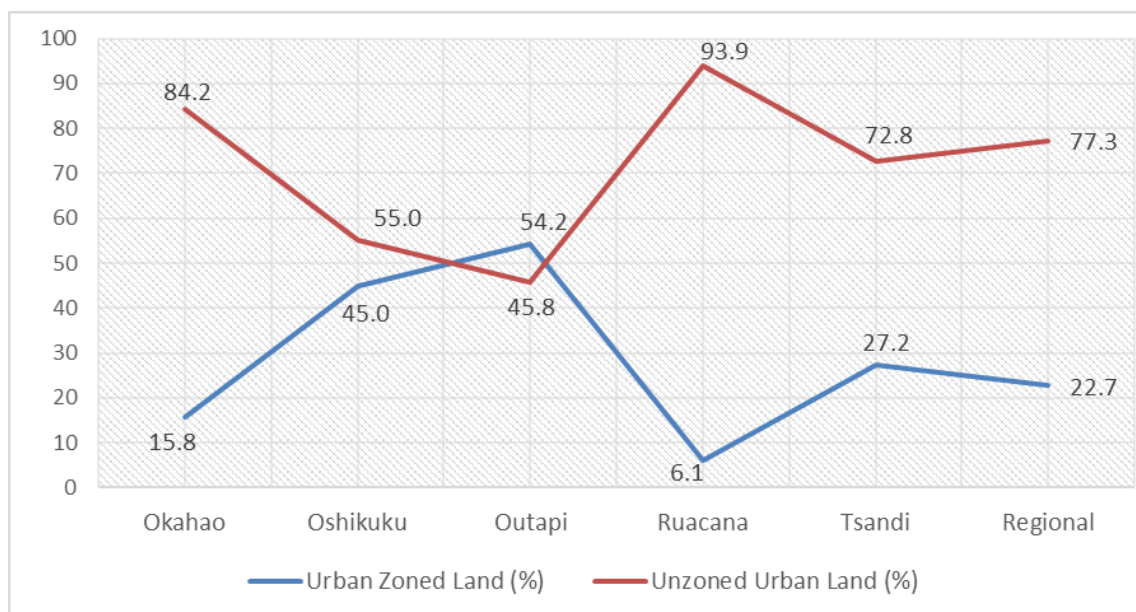


Figure 6.6.2: Figure 6.6.3 Percentage distribution of land by urban locality and zoning status in Oshana Region

Table 6.6.2 Number of Urban Zoned Plots by Urban Locality and Zoning Status in Omusati Region

Urban Locality	Business	Institutional	Open Space	Residential	Street	Urban Agriculture	Regional
Okahao	449	99	188	3925	0	15	4676
Oshikuku	361	73	55	2211	2	0	2702
Outapi	842	162	254	5848	0	51	7157
Ruacana	329	39	36	1119	0	0	1523
Tsandi	322	44	42	678	9	0	1095
Regional	2303	417	575	13781	11	66	17153

Table 6.6.2 shows the distribution of urban plots in Omusati by type and urban locality. The region has a total of 17,153 urban plots. As expected, the majority of the plots are used for residential purposes totalling 13,781 followed by business use at 2,303. Only Okahao and Outapi have plots for urban agriculture.

Table 6.6.3 Percentage distribution of Urban Zoned Plots by Urban Locality in Omusati Region

Urban Locality Name	Business (%)	Institutional (%)	Open Space (%)	Residential (%)	Street (%)	Urban Agriculture (%)	Regional (%)
Okahao	19.5	23.7	32.7	28.5	0.0	22.7	27.3
Oshikuku	15.7	17.5	9.6	16.0	18.2	0.0	15.8
Outapi	36.6	38.8	44.2	42.4	0.0	77.3	41.7
Ruacana	14.3	9.4	6.3	8.1	0.0	0.0	8.9
Tsandi	14.0	10.6	7.3	4.9	81.8	0.0	6.4

Table 6.6.3 and Figure 6.6.4 both shows the percentage distribution of urban zoned plots by urban locality and land use zone in Omusati Region. Apart from the common zoning classes, only Tsandi and Oshikuku have zoned land for street use at 81.8% and 18.2% respectively. Outapi has more plots at 41.7% followed by Okahao at 27.3%. The same pattern is true for residential plots and on almost all other zoning classes.

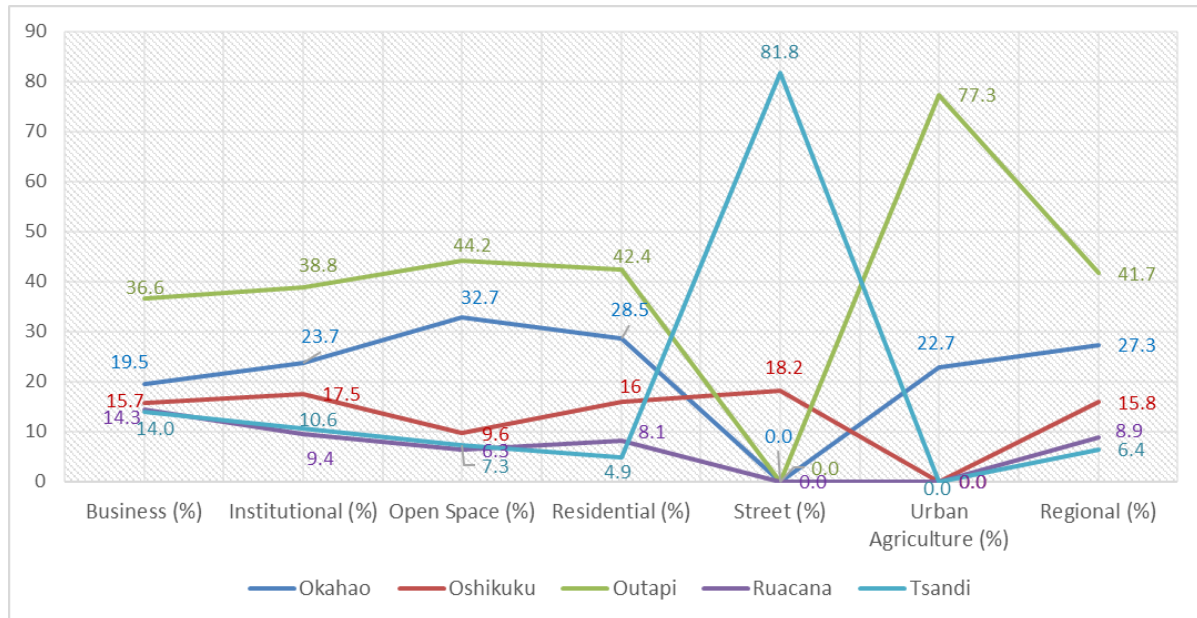


Figure 6.6.4: Percentage distribution land by urban locality and zoning status in Omusati Region

6.7 Oshana Region

This subsection provides summaries of urban land and land use zoning classes in Oshana Region. Ondangwa, Ongwediva and Oshakati are the three urban localities in the Region covering a total townland size of 19,952.9 hectares.

Table 6.7.1 Size and percentage of townland by land use status in Oshana

Urban Locality Name	Townland Size (Ha)	Townland Size (%)	Size of Zoned Land (Ha)	Urban Zoned Land (%)	Unzoned Urban Land (%)
Ondangwa	5322.3	26.7	4469.6	84.0	16.0
Ongwediva	8929.7	44.8	1770.2	19.8	80.2
Oshakati	5700.9	28.6	2955.6	51.8	48.2
Regional	19952.9	100.0	9195.4	46.1	53.9

Table 6.7.1 shows that Ongwediva is the biggest urban locality in terms of size and contributes 44.8% of urban land at 8,929.7 hectares. Oshakati and Ondangwa are almost equal in size at 28.6% and 26.7% respectively. A graphic representation of the townland sizes is shown in Figure 6.7.1 below.

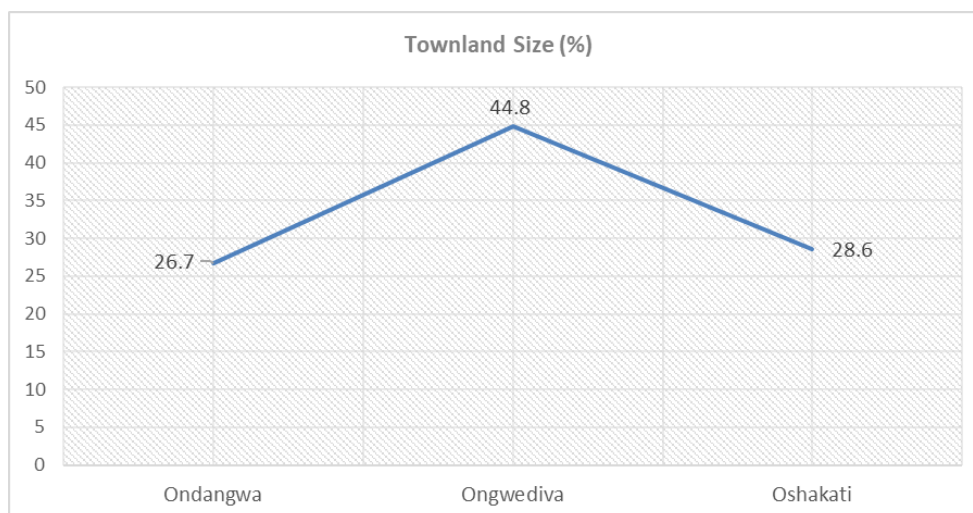


Figure 6.7.1 Percentage size of Townland by Urban Locality in Oshana Region

In terms of zoning, Ondangwa has the highest serviced area at 84% of its townland already zoned. Ongwediva is the least zoned town among the three. Regionally, 46.1% of urban land is classified (Figure 6.7.2). It was observed on the GIS data of Oshana Region that Oshakati has 15.1 hectares of unknown zoning land which could also be attributed to misclassification. The same was observed on Ongwediva townland where 13.9 hectares are classified as unknown.

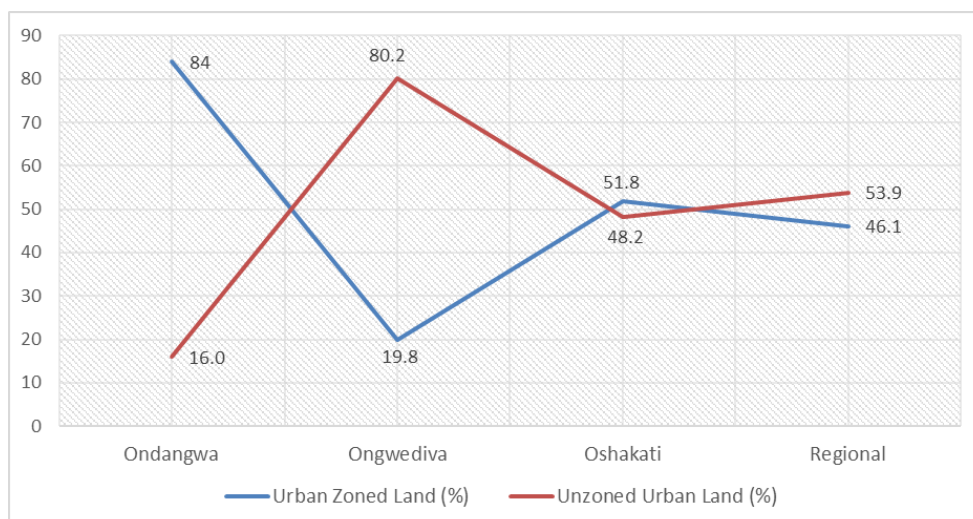


Figure 6.7.2 Percentage distribution of land by urban locality and zoning status in Oshana Region

Table 6.7.2 Number of Urban Zoned Plots by Urban Locality and Zoning Status in Oshana Region

Urban Locality Name	Business	Institutional	Nature Reserve	Open Space	Residential	Street	Urban Agriculture	Oshana
Ondangwa	1945	286	0	533	14762	2	50	17578
Ongwediva	1051	124	0	284	7595	10	0	9064
Oshakati	1065	292	21	254	16486	8	0	18126
Oshana	4061	702	21	1071	38843	20	50	44768

Table 6.7.2 shows the distribution of urban plots in Oshana by type and urban locality. The region has a total of 44,768 urban plots in the NSDI digital database. As typical, the majority of the plots are used for residential purposes totalling 38,843 followed by business at 4,061. Only Ondangwa has plots for urban agriculture. The percentage distribution of plots by urban locality is shown in Table 6.7.3.

Table 6.7.3 Percentage of Urban Zoned Plots by Urban Localities of Oshana Region

Urban Locality Name	Business (%)	Institutional (%)	Nature Reserve (%)	Open Space (%)	Residential (%)	Street (%)	Urban Agriculture (%)	Oshana (%)
Ondangwa	47.9	40.7	0.0	49.8	38.0	10.0	100.0	39.3
Ongwediva	25.9	17.7	0.0	26.5	19.6	50.0	0.0	20.2
Oshakati	26.2	41.6	100.0	23.7	42.4	40.0	0.0	40.5

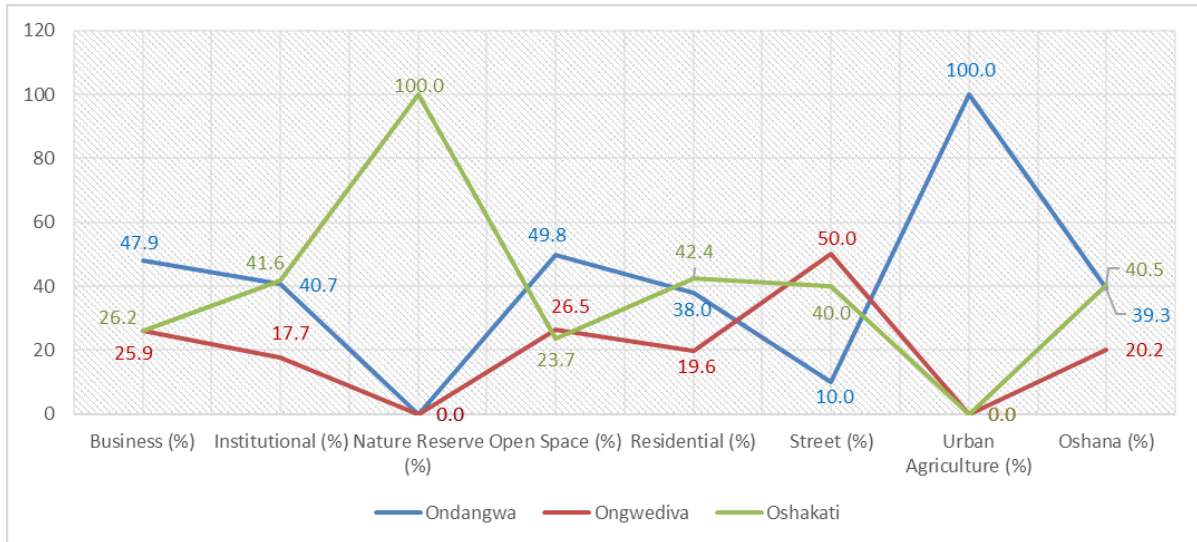


Figure 6.7.3 Percentage distribution of Zoned Plots by Urban Locality in Oshana Region

6.8 Oshikoto Region

This subsection provides summaries of the status of urban land in Oshikoto Region. Omuthiya, Oniipa and Tsumeb are the three urban localities in the Region covering a combined townland size of 68,338.7 hectares. Only 2251.8 hectares of the urban land in the region is zoned.

Table 6.8.1 Size and percentage of townland by land use status in Oshikoto Region

Urban Locality Name	Townland Size (Ha)	Townland (%)	Size of Zoned Land (Ha)	Zoned urban Land (%)	Unzoned Urban Land (%)
Omuthiya	12599.5	18.4	584.6	4.6	95.4
Oniipa	2720.3	4.0	1179.2	43.3	56.7
Tsumeb	53018.9	77.6	488	0.9	99.1
Oshikoto	68338.7	100.0	2251.8	3.3	96.7

Table 6.8.1 shows that Tsumeb is the biggest urban locality in terms of size as it accounts for 77.6% of urban land in the Region at 53,018.9 hectares. This is followed by Omuthiya at 18.4% while Oniipa is only 4.0% of the urban land. The townland size percentages are shown in Figure 6.8.1.

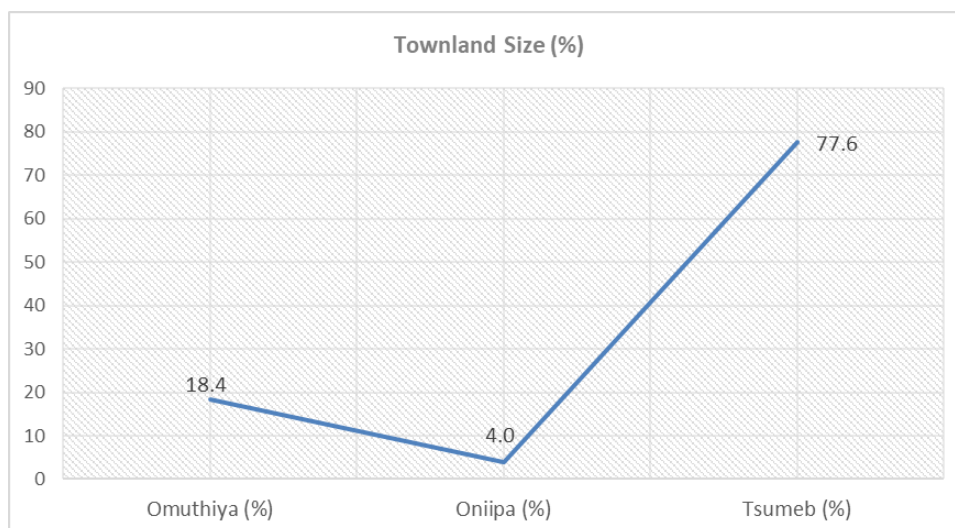


Figure 6.8.1 Percentage size of Townland by Urban Locality in Oshikoto Region

In terms of percentage zoning, Oniipa has the highest serviced land of 43.3% of its townland already zoned. Tsumeb is the least zoned town among the three at only 0.9%. Regionally, only a mere 3.3% of urban land is classified, the bulk of it is located in Oniipa. Figure 6.8.2 shows the percentage size of each urban locality in Oshikoto Region.

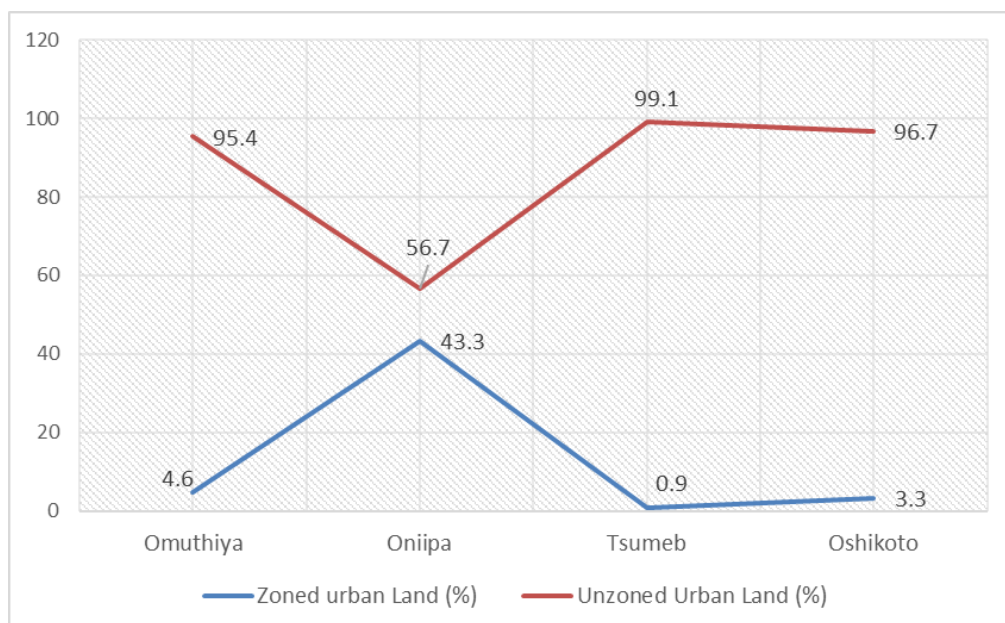


Figure 6.8.2 Percentage distribution of land by urban locality and zoning status in Oshikoto Region

Table 6.8.2 Number of Urban Zoned Plots by Zoning Status and Locality in Oshikoto Region

Urban Locality Name	Business	Institutional	Open Space	Residential	Street	Urban Agriculture	Oshikoto
Omuthiya	480	117	153	2150	2	3	2905
Oniipa	463	85	171	5719	1	0	6439
Tsumeb	285	58	25	2695	0	0	3063
Oshikoto	1228	260	349	10564	3	3	12407

Table 6.8.2 shows the distribution of urban zoned plots in Oshikoto by type and urban locality. It was observed that 82 residential plots belonging to Ondangwa in Oshana Region were misclassified as part of Oniipa in Oshikoto Region. This was rectified based on the spatial location of the plots and correctly assigned to Oshana Region.

Oshikoto therefore recorded a total of 12,407 urban plots. As it is typical, the majority of the plots are used for residential purposes totalling 10,564 followed by business use at 1,228 plots. Only Omuthiya has plots for urban agriculture in its zoning classes.

Table 6.8.3 Percentage distribution of Urban Zoned Plots in Urban Localities of Oshikoto Region

Urban Locality Name	Business (%)	Institutional (%)	Open Space (%)	Residential (%)	Street (%)	Urban Agriculture (%)	Oshikoto (%)
Omuthiya	39.1	45.0	43.8	20.4	66.7	100.0	23.4
Oniipa	37.7	32.7	49.0	54.1	33.3	0.0	51.9
Tsumeb	23.2	22.3	7.2	25.5	0.0	0.0	24.7
Oshikoto	100.0	100.0	100.0	100.0	100.0	100.0	100.0

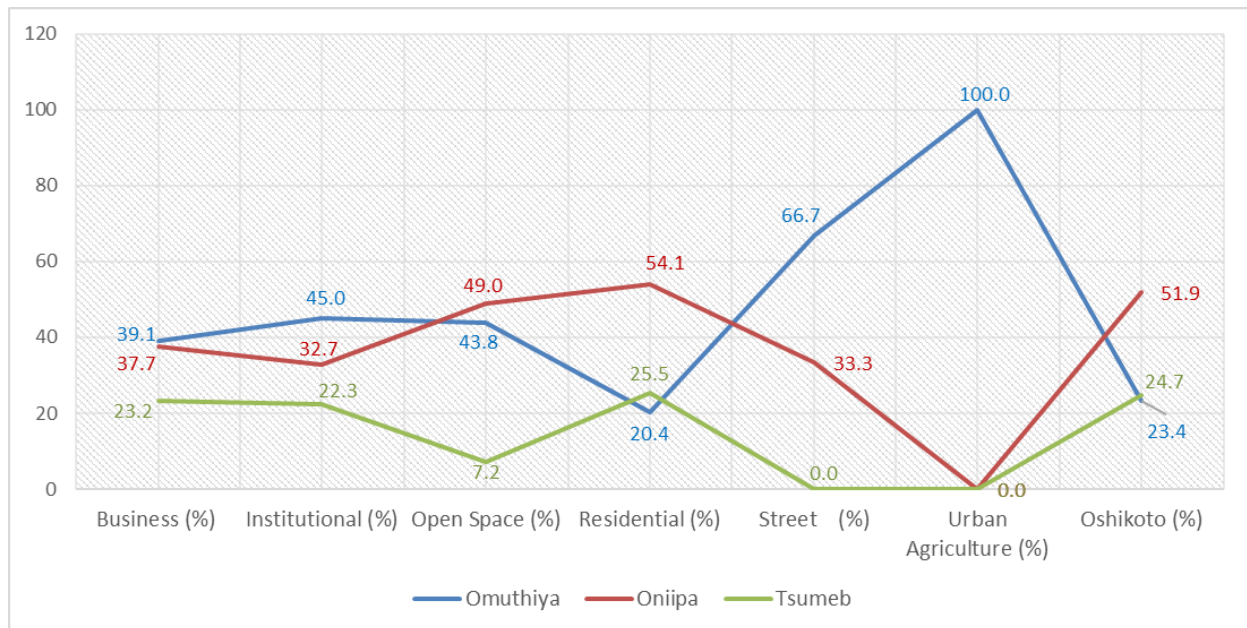


Figure 6.8.3 Percentage distribution of Zoned Plots by Urban Locality in Oshikoto Region

Table 6.8.3 and Figure 6.8.3 show the percentage distribution of each zoning class by urban locality in Oshikoto Region. Only Omuthiya has a land use for urban agriculture in the region while Oniipa has 51.9% of the region's urban plots. Oniipa also has the most open spaces at 49.0% followed by Omuthiya at 43.8% respectively. In terms of business plots, Omuthiya and Oniipa have more plots at 39.1% and 37.7% than Tsumeb. Regionally, Oniipa has more zoned urban land in the region at 51.9% followed by Tsumeb at 24.7%.

6.9 Zambezi Region

This subsection provides summaries of urban land as well as mapped urban households in Zambezi Region. Bukalo and Katima Mulilo are only urban localities in the Region covering a total townland size of 5,902.8 hectares.

Table 6.9.1 Size and percentage of townland by land use status in Zambezi

Urban Locality Name	Townland Size (Ha)	Townland (%)	Size of Zoned Land (Ha)	Urban Zoned Land (%)	Un-zoned Land (%)
Bukalo	860.8	14.6	114.5	13.3	86.7
Katima Mulilo	5042.0	85.4	2109.0	41.8	58.2
Zambezi	5902.8	100	2223.5	37.7	62.3

Table 6.9.1 and Figure 6.9.1 shows that Katima Mulilo is the biggest urban locality in terms of size as it contributes 85.4% of urban land in the Region at 5,042.0 hectares. Bukalo is only 14.6% of the urban land.

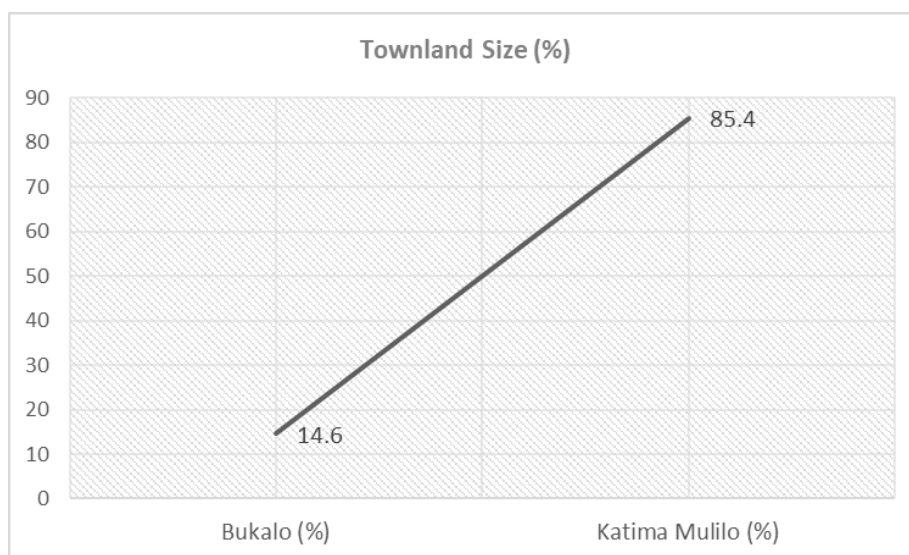


Figure 6.9.1 Percentage size of Townland by Urban Locality in Zambezi Region

Only 13.3% of Bukalo is classified while Katima Mulilo is at 41.8%. Regionally serviced urban land is at 37.7%. This is graphically shown in Figure 6.9.2.

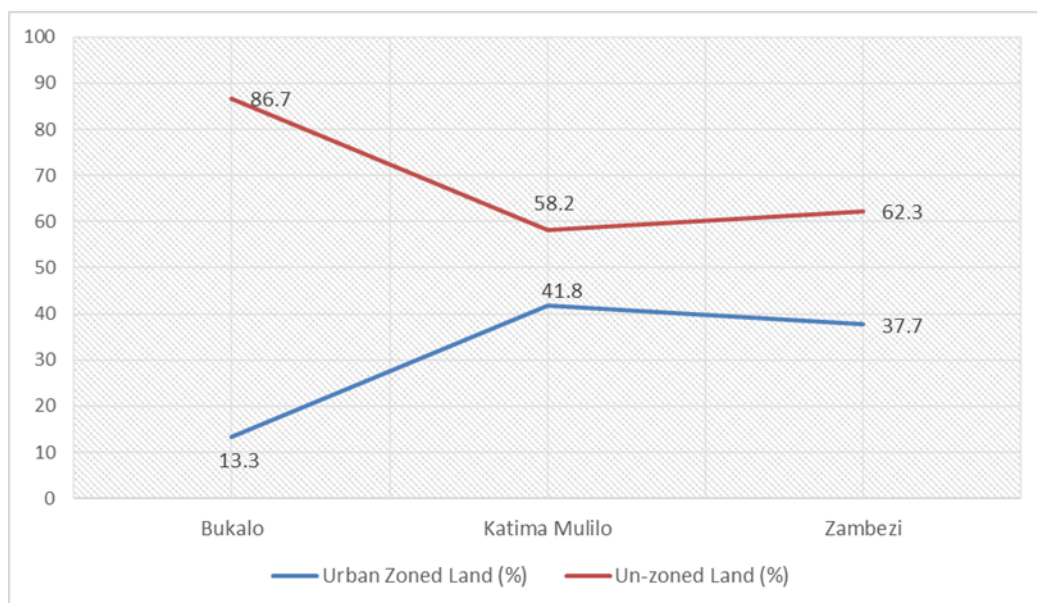


Figure 6.9.2 Percentage distribution of land by urban locality and zoning status in Oshana Region

Table 6.9.2 Number of Urban Zoned Plots by Urban Locality and Zoning Status in Zambezi Region

Urban Locality	Business	Institutional	Open Space	Residential	Street	Urban Agriculture	Zambezi
Bukalo	46	11	3	430	0	0	490
Katima Mulilo	579	183	166	10205	11	1	11145
Zambezi	625	194	169	10635	11	1	11635

Table 6.9.2 shows the distribution of urban plots in Zambezi by type and urban locality. The region has a total of 11,635 urban plots. The majority of the plots are used for residential purposes totalling 10,635 followed by business at 625. Katima has 166 open spaces on its zoning scheme while Bukalo has only 3.

Table 6.9.3 Percentage distribution of Urban Zoned Plots in Urban Localities of Zambezi Region

Urban Locality Name	Business (%)	Institutional (%)	Open Space (%)	Residential (%)	Street (%)	Urban Agriculture (%)	Zambezi (%)
Bukalo	7.4	5.7	1.8	4.0	0.0	0.0	4.2
Katima Mulilo	92.6	94.3	98.2	96.0	100.0	100.0	95.8

Table 6.9.3 and Figure 6.9.3 shows the percentage distribution of zoning classes by urban locality in the Region. Katima Mulilo has the highest number of plots accounting for 95.8%. The town has 1 plot zoned as urban agriculture while Bukalo has not urban agriculture class on its zoning scheme.

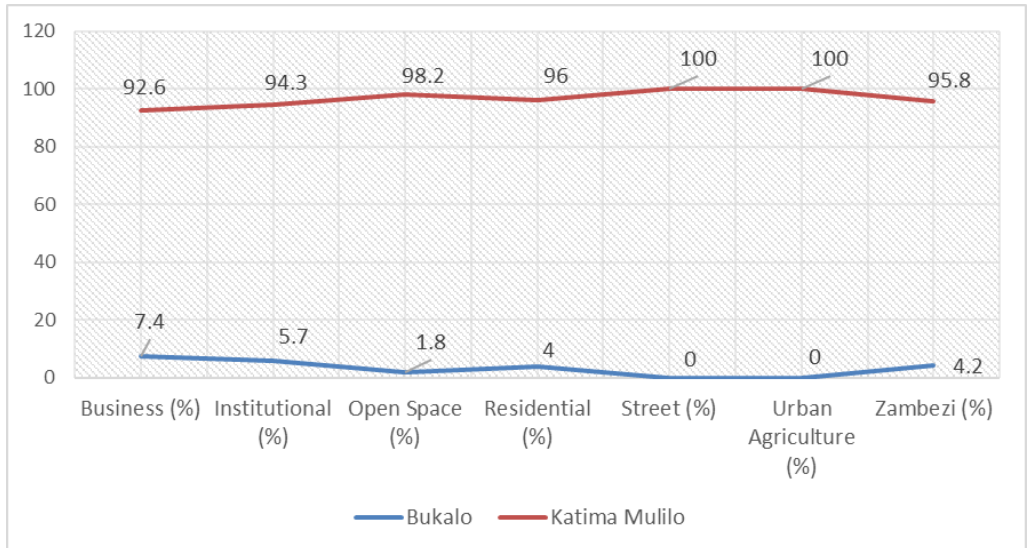


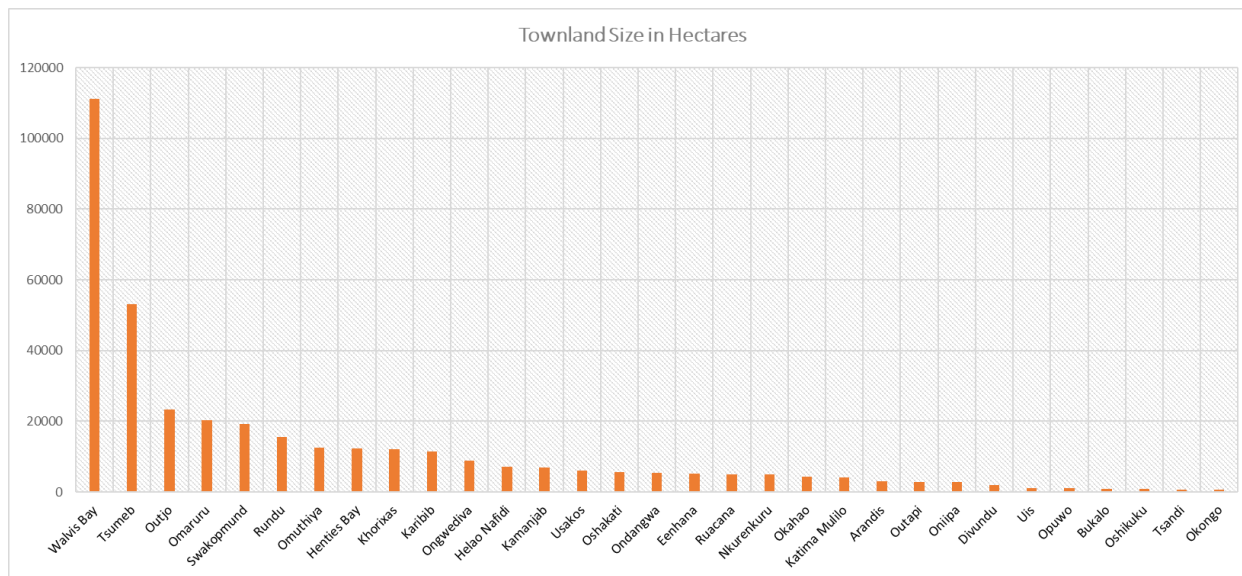
Figure 6.9.3 Presentation distribution of Urban Zoned Plots by Urban Locality in Zambezi Region

7. GENERAL SUMMARIES

7.1 Size of Urban Localities in the 9 assessed Regions

Walvis Bay is the largest urban locality in extent among the 30 evaluated urban localities. The municipality covers 111,156 hectares. This is followed by Tsumeb, Outjo, Omaruru and Swakopmund. Okongo is the smallest urban localities among the evaluated localities with an estimated townland boundary of 629.8 hectares.

Figure 7.1.1 Size of urban localities in hectares



7.2 Percentage size of Zoned Townland by Urban Locality

Based on the land use zoning schemes, Omaruru, Divundu and Ondangwa are the top three most zoned urban localities having more than three quarters of their land already zoned (Figure 7:2.1). This means that nearly every piece of land within their townland boundaries have a predefined land use. This is also providing a hint on the status of land servicing as it can be an indirect pointer for more serviced land in those localities. However, a closer assessment of Omaruru shows that the biggest part of the zoned land is used for urban agriculture.

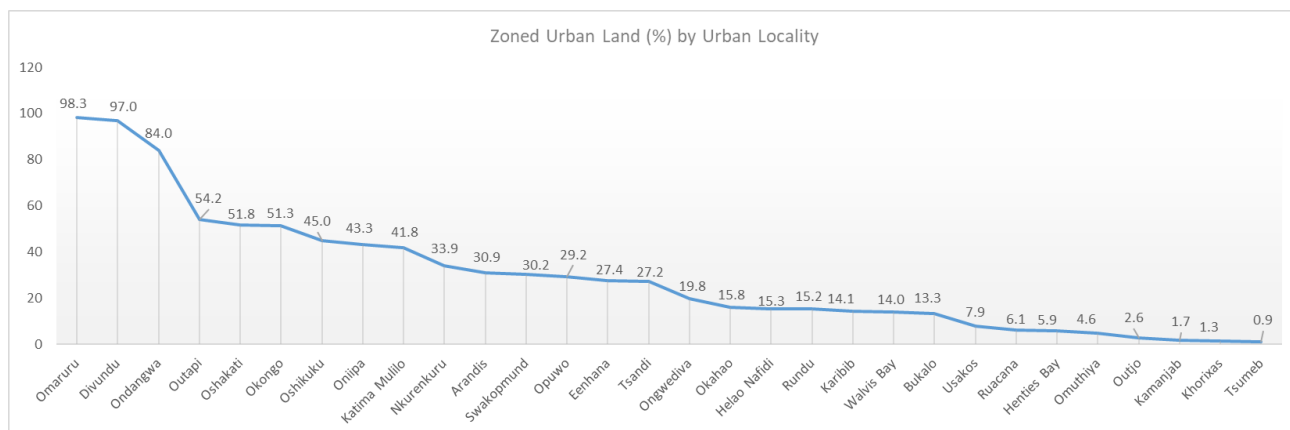


Figure 7.2.1 Percentage of zoned townland by urban locality

Tsumeb and Khorixas are the least planned or zoned urban localities having less than 1.5% of their townlands zoned. They are followed by Kamanjab at 1.7%, Outjo at 2.6% and Omuthiya at 4.6% respectively.

7.3 Total Number of Zoned Plots by Urban Locality (All Land Uses)

The number of zoned plots by urban locality is an indirect indication of the level of development of the local authorities. Figure 7.3.1 shows the distribution of plots arranged in descending order. Rundu has more urban plots in the 9 regions followed by Oshakati while Bukalo has the lowest number of plots at 490 only. Okongo has more urban plots among village councils.

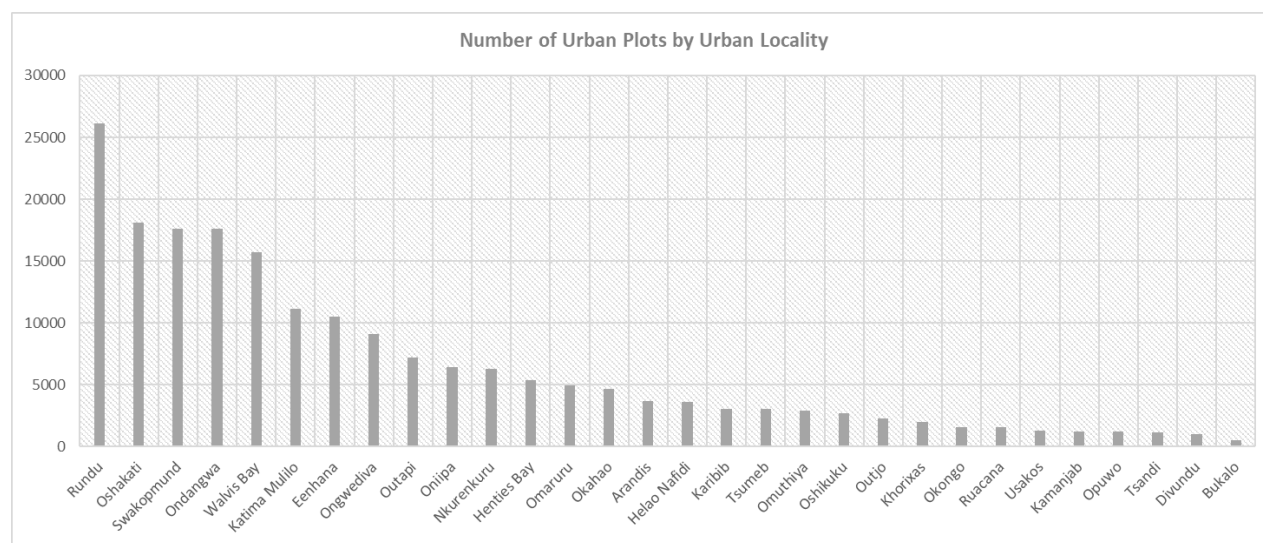


Figure 7.3.1 Number of Urban Plots (all land uses) by Urban Locality

7.4 Total Number of Residential-Zoned Plots by Urban Locality

In terms of the number of residential plots by urban locality, Figure 7.4.1 shows that Rundu in Kavango East Region has the highest number at 22,293 residential plots followed by Oshakati at 16,486 plots. Helao Nafidi Town Council has the smallest number of residential plots at 209 plots followed by Bukalo Village Council.

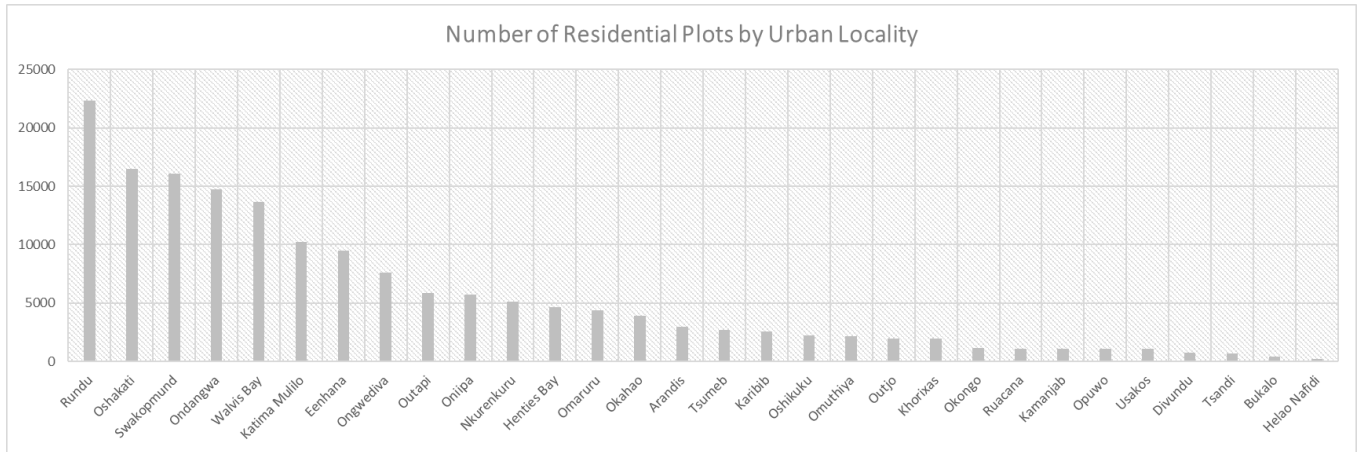


Figure 7.4.1 Number of Urban Residential Plots by Urban Locality

Khorixas has the highest percentage of residential plots to total urban plots at 97.7% followed by Katima Mulilo at 91.6%. Helao Nafidi has only 5.9% of plots designated for residential purposes (Figure 7.4.2).

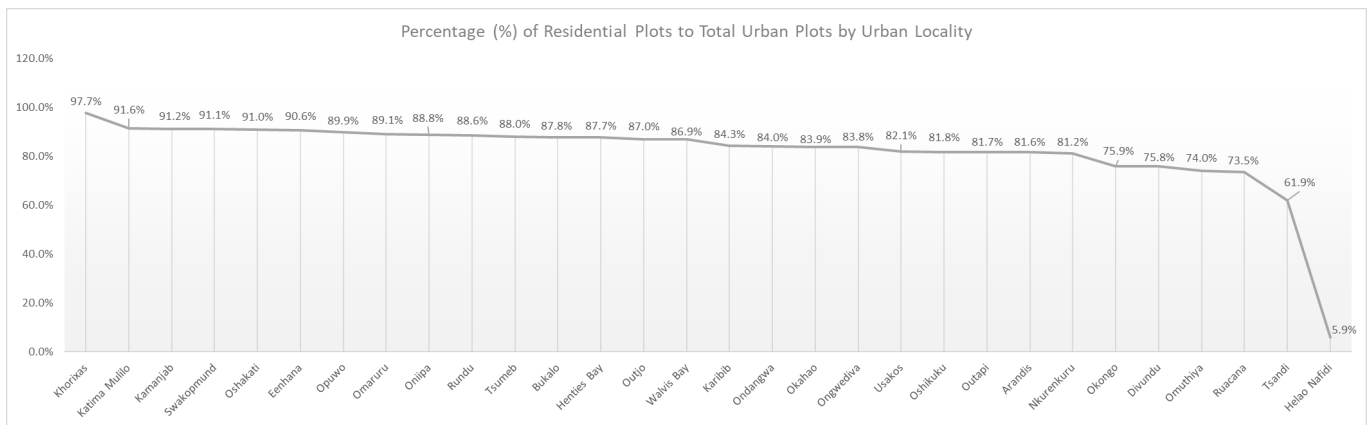


Figure 7.4.2 Percentage of Residential Plots to Total Urban Plots by Urban Locality

8. CONCLUSION

In this publication, a total urban land size of 370,452.9 hectares was evaluated consisting of municipalities, towns and villages in Erongo, Kavango East, Kavango West, Kunene, Ohangwena, Omusati, Oshana, Oshikoto and Zambezi. The evaluated urban land is a sum of townland boundaries of 30 Local Authorities in the 9 regions. It was found that 71686.8 hectares of urban land making up 192,261 plots was already allocated different land uses based on the different land use zoning schemes in the evaluated Local Authorities. It was observed that Local Authorities use different land use zoning schemes making which makes it difficult to compare land allocation and use among them. Therefore standardised land use zoning classes were necessary for this exercise to reclassify land into their common land classes for statistical purposes.

In exception of a few, most of the Local Authorities do not have GIS to effectively manage their urban land and infrastructure digitally. Land is viewed from PDFs and hardcopy maps which are static in terms of content. Land information is not enriched as it should be, thus becomes difficult to perform timely analysis or computations. Apart from a few Local Authorities, not much zeal could be observed for a digital transformation drive and little awareness of the benefits of the NSDI government initiative especially at management level.

Furthermore, not much capacity in terms of human and ICT infrastructure is available in most Local Authorities. Some Local Authorities do not have sufficient computers to digitally transform their land records. This has caused most of them to depend on town planners to keep their land use zoning records.

9. RECOMMENDATIONS

9.1 Validation of the Urban Land Statistics Bulletin

This publication is generated to stimulate interest and debate among Local Authorities with regard to sound management of their digital land records. The goal is to develop quality baselines for urban land statistics in all urban localities of Namibia for future comparison and management while working towards digital transformation of the urban space. This is conducted within the context of the NSDI which is a national technical and institutional framework facilitating the capture, management, maintenance, integration, distribution and use of spatial data (*See Statistics Act, Section 47 to 49*). It is therefore recommended that Local Authorities must validate this bulletin based on the most recent statistics in their holding.

9.2 Effective Land Management at Local Authority Level

It is recommended that Local Authorities must urgently work towards digital transformation by setting up their Local Spatial Data Infrastructures (LSDI) to effectively manage their land and development infrastructure. The NSA as a coordinator of the National Spatial Data Infrastructure (NSDI) is accessible to render its advisory service on this work.

9.3 Capacity Building at Local Authority Level

It is recommended that Local Authorities prioritise building capacity of their housing and town planning personnel. The capacity should include information technology infrastructure to enable digital transformation.

9.4 Standardising Zoning Schemes at Local Authority Level for National Statistical Reporting and Comparability

It was observed that Local Authorities have different zoning schemes with different classifications and naming conventions. While this is necessary because of the uniqueness of each Local Authority, there is a need for a common set of zoning classes in the zoning data to ensure comparability and uniform reporting across the country. It is therefore recommended for the Ministry of Urban and Rural Development to facilitate the development and gazetting of standard zoning classes while maintaining the current Local Authority-specific zoning classes.

---End---



NAMIBIA URBAN LAND STATISTICS BULLETIN

PRELIMINARY

VOLUME 1
ISSUE 1A
DECEMBER 2021