

Datazone level Namibian Index of Multiple Deprivation 2001



*Empowered lives.
Resilient nations.*



Ohangwena Region

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PREFACE



This report is the result of collaborative work between the Government of the Republic of Namibia (GRN), the United Nations Development Programme (UNDP) and the Centre for the Analysis of South African Social Policy at the Oxford Institute of Social Policy at the University of Oxford

In November 2009, the Khomas Regional Council requested UNDP to assist in designing an objective criterion or set of criteria, devoid of political and other considerations, which the Council could use in allocating development resources. Subsequent discussions led to an agreement that other stakeholders, especially the Central Bureau of Statistics needed to be involved and that the criterion or set of criteria needed to go beyond income poverty considerations. It was also agreed that rather than focus on Khomas region alone, the criterion or set of criteria needed to be applicable to, or cover the entire country. Specifically, it was agreed that a composite index of multiple deprivation, the Namibia Index of Multiple Deprivation (NIMD), be constructed at both national and regional levels. Since the scope and depth of analysis needed for the development of the NIMD required very detailed and reliable data and information, it was agreed that the 2001 census data, though 'outdated', be used as the source of information for preparing the NIMD. Accordingly, the NIMD being presented in this report reflects the situation in Ohangwena region at the 2001 time-point only. UNDP and the GRN recognize that the report does not speak to possible changes in relative deprivation that may have occurred in the Ohangwena region since 2001. Nevertheless the 2001 NIMD could serve as a benchmark against which change over the last

decade could be measured when the 2011 Census becomes available and is subsequently used for carrying out a similar analysis.

This report presents, using tables, charts and digital maps, a profile of multiple deprivation in Ohangwena region at data zone level, which is a relatively new statistical geography developed for purposes of measuring deprivation at a small area level. This technique of profiling deprivation at datazone level, each with approximately 1000 people only, enables the identification and targeting of pockets of deprivation within Ohangwena region for possible use in panning for and implementation of development interventions. The aim of the exercise was to produce a profile of relative deprivation across Ohangwena region in order for the most deprived areas to be identified and clearly delineated. In this way, it would be possible for regional and constituency level policy and decision makers, as well development practitioners, to consider a particular domain of deprivation, or to refer to the overarching NIMD for each constituency or datazone, in *inter alia*, allocating and applying development resources and interventions. The NIMD can also be used as a platform for effecting a paradigm shift in development planning towards increased focus on and targeting of deprived areas and sectors; as well as interrogating the causes of inequality

in access to basic services within the region. The NIMD at datazone level should be viewed as adding to the existing body of information and knowledge, including local knowledge systems, about poverty and deprivation in Ohangwena region and the large family of existing planning and resource allocation tools and methodologies already in use at the regional and constituency levels.

This project was undertaken by Professor Michael Noble, Dr Gemma Wright, Ms Joanna Davies, Dr Helen Barnes and Dr Phakama Ntshongwana of the Centre for the Analysis of South African Social

Policy at the Oxford Institute of Social Policy at the University of Oxford, under the leadership and guidance a national steering committee chaired by Mr Sylvester Mbangu, Director of the Central Bureau of Statistics, with the participation of representatives of the thirteen Regional Councils. In addition to providing the funds for carrying out the project, UNDP provided overall oversight and technical backstopping to the project through Ojijo Odhiambo, Senior Economist and Johannes Ashipala, National Economist. David Avenell is thanked for his assistance with producing the datazones.

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SECTION 1: INTRODUCTION



This report presents the datazone level Namibian Index of Multiple Deprivation 2001 (NIMD 2001) for the Ohangwena region. The NIMD is a composite index reflecting five dimensions of deprivation: income and material deprivation; employment deprivation; education deprivation; health deprivation; and living environment deprivation.

The NIMD and the component domains of deprivation were produced at datazone level using data from the 2001 Population Census. Datazones are small areas containing approximately the same number of people (average 1,000). The datazone level NIMD therefore provides a fine-grained picture of deprivation and enables pockets of deprivation to be identified in Ohangwena region. The report is structured as follows: The background information and the conceptual framework which underpins the model of multiple deprivation is described in this introductory section. In Section 2 the rationale for and process of constructing datazones are described. Section 3 introduces the domains and indicators that were included in the NIMD and summarises the methodological approach that was used in constructing the NIMD. In Section 4 datazone level results for Ohangwena region are presented, while conclusions and some general policy recommendations are presented in Section 5.

1.1 Background

Initially a NIMD was created at constituency level for the Khomas Region, but applicable to other regions of the country as well, using data from the 2001 Population Census at constituency level after a two-day consultative process on the domains and indicators with members of the Central Bureau of Statistics, civil servants from the Council and staff members of UNDP. The objective of this phase of

the project was to construct measures of multiple deprivation at constituency level in order to provide a more detailed analysis of deprivation which would enable Khomas Regional Council, and other regional councils across Namibia, to rank their areas in order of deprivation, and also to set them in the context of all other areas in Namibia. The datazone level index presented in this report draws from the previous constituency index, and covers, in detail, the entire country including Ohangwena region. In constructing the NIMD at datazone level however,

“ The NIMD and the component domains of deprivation were produced at datazone level using data from the 2001 Population Census. As will be elaborated in Section 2, datazones are small areas containing approximately the same number of people (average 1,000) ”

it became necessary to make some small changes to some of the domains and indicators initially used in the constituency level study. These changes are explained in detail in Section 3 of this report. As such, the constituency level index has also been revised to give a comparable measure. The initial results of the work at the datazone level were presented to, and validated by, representatives of all the 13 Regional Councils at a workshop held in Ondangwa in November 2011.

1.2 Defining poverty and deprivation

Townsend (1979) sets out the case for defining poverty in terms of relative deprivation as follows: *‘Individuals, families and groups can be said to be in poverty if they lack the resources to obtain the types of diet, participate in the activities and have the living conditions and amenities which are customary or at least widely encouraged or approved in the societies to which they belong’* (Townsend, 1979, p31).

Though ‘poverty’ and ‘deprivation’ have often been used interchangeably, many have argued that a clear distinction should be made between them (see for example the discussion in Nolan and Whelan, 1996). Based on this line of thought, it can be argued that the condition of poverty means not having enough financial resources to meet a need, whereas deprivation refers to an unmet need, which is caused by a lack of resources of all kinds, not just financial.

1.3 The concept of multiple deprivation

The starting point for the NIMD is a conceptual model of multiple deprivation. The model of

multiple deprivation is underpinned by the idea that there exists separate dimensions of deprivation which can be recognised and measured, and are experienced by individuals living in an area. Multiple deprivation is therefore conceptualised as a weighted combination of distinct dimensions or domains of deprivation. An area level score for each domain is produced and these are then combined to form an overall Index of Multiple Deprivation.

Although the area itself is not deprived, it can nonetheless be characterised as deprived *relative* to other areas, in a particular dimension of deprivation, on the basis of the proportion of people in the area experiencing the type of deprivation in question. In other words, the experiences of the people in an area give the area its deprivation characteristics. It is important to emphasize that the area itself is not deprived, though the presence of a concentration of people experiencing deprivation in an area may give rise to a compounding deprivation effect, but this is still measured by reference to those individuals. Having attributed the aggregate of individual experience of deprivation to the area however, it is possible to say that an area is deprived in that particular dimension. And having measured specific dimensions of deprivation, these can be understood as domains of multiple deprivation. In his article ‘Deprivation’ Townsend also lays down the foundation for articulating multiple deprivation as an aggregation of several types of deprivation (Townsend, 1987). Townsend’s formulation of multiple deprivation is the starting point for the model of small area deprivation which is presented in this report.

SECTION 2: DATAZONES



Datazones are a new statistical geography for Namibia created especially for this version of the NIMD 2001. This section provides a non-technical overview of the process of creating the datazones and summarises their characteristics.

The methodology adopted is based on a similar process undertaken in South Africa (Avenell et al., 2009) which in turn was adapted from techniques developed in the United Kingdom (see, for example, Martin et al., 2001). Datazones were built up from Census Enumeration Areas (EAs) to create a standard uniform geography across Ohangwena region based on the existing EA geography which nest within the eleven constituency boundaries. Though a datazone may be created from a single EA, it is usually created by merging one or more contiguous EAs which share common characteristics in accordance with a set of pre-defined rules. The actual creation of datazones was undertaken using a variety of geographical programming techniques (see Avenell et al., 2009). A set of rules governing the merging process was drawn up to ensure that the datazones had, as close as was possible, the following characteristics:

Population size: Datazones are designed to have a similar resident population size - this allows comparability across the region. The target population size was 1,000 with a minimum of 500 and maximum of 1,500. A total 233 datazones were created for the Ohangwena region.

Population density: Datazones should comprise EAs of similar population density. This is important to ensure that urban areas become distinct from rural areas. The datazone algorithm incorporated thresholds to ensure that, wherever possible, urban areas became tightly bounded.

Internal homogeneity: It is important that datazones comprise EAs of similar characteristics. This helps to ensure that the datazone geography created is 'meaningful' in that, for example, in urban areas housing of a similar type are grouped together within one datazone and that those living in EAs within a single datazone share similar socio-economic characteristics. In order to achieve this all EAs were analysed using a technique known as cluster analysis. This technique groups EAs across the country and the region into a small number of 'families' based on a variety of relevant characteristics. The datazones were checked and validated by obtaining aerial photography underlays for the mapping software and visually inspecting boundary positions.

“ Though a datazone may be created from a single EA, it is usually created by merging one or more contiguous EAs which share common characteristics in accordance with a set of pre-defined rules. ”

SECTION 3: METHODOLOGY

3.1 An introduction to the domains and indicators

Domains

The NIMD was produced using the 2001 Namibian Population Census which was supplied by the Namibian Central Bureau of Statistics for the purposes of this project. Whilst the intention should always be concept-led rather than 'data-driven', the project team was restricted to selecting indicators from the range of questions included within the 2001 Census. The NIMD was produced at datazone level (and also at constituency level on a comparable basis). There are 233 datazones and 11 constituencies in Ohangwena region.

The NIMD contains five domains of deprivation:

- Material Deprivation¹
- Employment Deprivation
- Health Deprivation
- Education Deprivation
- Living Environment Deprivation

Each domain is presented as a separate domain index reflecting a particular aspect of deprivation. Each domain seeks to measure only one dimension of deprivation, avoiding overlaps between the domains and providing a direct measure of the deprivation in question. Individuals can however, experience more than one type of deprivation at any given time and it is therefore conceivable that the same person can be captured in more

than one domain. So, for example, if someone was unemployed, had no qualifications and had no access to basic material goods they would be captured in the Employment Deprivation, Education Deprivation and Material Deprivation domains. The indicators were chosen following an extensive consultation process with representatives of the Central Bureau of Statistics, Khomas Regional Council and UNDP².

“ The NIMD was produced using the 2001 Namibian Population Census which was supplied by the Namibian Central Bureau of Statistics for the purposes of this project ”

Indicators

Each domain index contains a number of indicators. There are 11 indicators in total in the NIMD. The aim for each domain was to include a parsimonious

¹ This refers to material goods, that is, assets or possessions.

² During the consultation process a number of other domains were discussed. These included: access to recreation facilities, level of participation in community activities, crime, food security, provision of emergency services, and availability of affordable transport. Unfortunately data relating to these issues were not available within the Census. These issues could be incorporated into further iterations of the NIMD if appropriate administrative or geographical data becomes available.

(i.e. economical in number) collection of indicators that comprehensively captured the deprivation for each domain, but within the constraints of the data available from the 2001 Census. When identifying indicators for the domains, it was important to ensure that they are direct measures of the domain of deprivation in question and specific to that domain.

In the construction of that index the indicators were discussed at length during the consultation process and every effort was made to ensure that they were appropriate for the Namibian context. The domains need to allow different geographical areas to be distinguished from one another; therefore it would be unhelpful to identify a deprivation which is experienced by most people in most areas as this would not enable the areas to be ranked relative to each other in terms of deprivation.

“ With the exception of changes to three indicators in the newly constituted Living Environment Deprivation Domain, the indicators are the same as those used in the previous constituency level index. ”

“ In any event, the 2001 Census did not have an income question and so an income poverty indicator, if included, would need to be modelled from a different data source such as the Namibian Household Income and Expenditure Survey ”

In the following sub-sections the domains and indicators which make up the NIMD 2001 are described.

3.2 Material Deprivation Domain

Purpose of the domain

This domain measures the proportion of the population experiencing material deprivation in an area by reference to the percentage of the population who are deprived of access to basic material possessions.

Background

In other indices that have followed this model (e.g. UK indices), an Income Deprivation Domain was created. However, there is an argument that such a domain is inappropriate within an Index of Multiple Deprivation, because - as explained above - deprivation can be regarded as the outcome of lack of income rather than the lack of income itself.

To follow Townsend, within a multiple deprivation measure, only the deprivations resulting from a low income would be included so low income itself would not be a component, but lack of material possessions would be included. In any event, the 2001 Census did not have an income question and so an income poverty indicator, if included, would need to be modelled from a different data source such as the Namibian Household Income and Expenditure Survey. Such modelling work is being undertaken separately for the Central Bureau of Statistics (now Namibia Statistics Agency) by Lux Development and will provide a complementary small area measure of income poverty. For these reasons, a material deprivation domain was produced. A lack of access to basic material goods can be understood as a proxy for low income. The 2001 Census included questions about access to material goods (e.g. television, radio, newspaper, telephone and computer) which are internationally accepted and widely used as measures of variations in living standards.

Of the possible material goods that could be included as indicators, access to a television/radio and telephone/cell phone were selected as they represent important modes of communication and a means of accessing information crucial to one's life and livelihood. The quality of the services provided however, were not be taken into account.

Indicators

- Number of people living in a household with no access to a television or a radio; or

- Number of people living in a household with no access to a telephone/cell phone.

Combining the indicators

A simple proportion of people living in households experiencing either one or both of the deprivations was calculated (i.e. the number of people living in a household with no access to a television/radio and/or with no access to a telephone/cell phone divided by the total population).

3.3 Employment Deprivation Domain

Purpose of the domain

This domain measures employment deprivation conceptualised as involuntary exclusion of the working age population from the world of work by reference to the percentage of the working age population who are unemployed.

Background

The 2001 Census recorded employment status in line with the International Labour Organisation (ILO) 'labour force framework' and the 'priority rules' which give precedence to employment over all other activities '*regardless of the amount of time devoted to it, which in extreme cases may be only one hour*' (Husmanns, 2007, p6). Therefore a person was considered to be employed if during the seven days prior to the Census night they worked for at least one hour for pay, profit or family gain. It follows that unemployment was defined as a situation of a total lack of work. The definition of

unemployment adopted by the 13th International Conference of Labour Statistics (ICLS) stipulates three criteria which must be simultaneously met for a person to be considered unemployed. According to this official definition, the unemployed are those persons within the economically active population (aged 15-65 inclusive) who during the reference period (for the 2001 Census this is the seven days prior to Census night) were:

1. Without work, i.e. in a situation of total lack of work; and
2. Currently available for work, i.e. not a student or homemaker or otherwise unavailable for work; and
3. Seeking work, i.e. taking steps to seek employment or self-employment.

Using the 2001 Census however, it was not possible to measure whether unemployed people were available for work and seeking work. Though other indices have also included people of working age who cannot work because of illness or disability, as they are involuntarily excluded from the world of work and internationally are regarded as the 'hidden unemployed' (Beatty et al., 2000), the consultation group wanted to limit this domain to the economically active population and therefore disabled or long-term sick people were not included. The age band was modified to 15-59 inclusive to reflect a concept of working age relevant to Namibia.

Indicator

- Number of people aged 15-59 inclusive who are unemployed.

Combining the indicators

The domain was calculated as those identified as unemployed and aged 15 to 59 inclusive divided by the number of people who are economically active in that age group.

3.4 Health Deprivation Domain

Purpose of the domain

This domain identifies areas with relatively high rates of people who die prematurely. The domain measures premature mortality but not aspects of behaviour or environment that may be predictive of *forthcoming* health deprivation.

Background

Although the consultation process raised the importance of measuring people's health status; and access to health facilities and healthcare, these issues could not be measured using the 2001 Census data. It was therefore not possible to include any measures of morbidity or access to health services. Instead a form of standardised mortality ratio known as Years of Potential Life Lost (YPLL) was used. An internationally recognised measure of poor health, the YPLL measure is the level of unexpected mortality weighted by the age of the individual who has died (for details about how this indicator was constructed see Blane and Drever, 1998). An area with a relatively high death rate in a young age group (including areas with high levels of infant mortality) will therefore *ceteris paribus*, have a higher overall YPLL score than an area with a similarly relatively high death rate for an older age group.

“ The YPLL measure is related to life expectancy in an area. Areas with low life expectancy will have high YPLL scores ”

The YPLL indicator is a directly age and gender standardised measure of premature death (i.e. death under the age of 75)³. The YPLL measure is related to life expectancy in an area. Areas with low life expectancy will have high YPLL scores. Equally high levels of infant mortality and perinatal mortality as well as high levels of serious illness such as HIV/AIDS and tuberculosis will all contribute to reduced life expectancy in an area and therefore high YPLL scores. Thus, although the YPLL is a mortality measure, it does, implicitly, reflect the extent of serious ill-health in an area. And although it would have been possible to use infant mortality, under-five mortality, and life expectancy as indicators, YPLL in effect combines all these issues into a single indicator and is therefore a broader and more useful overview of health deprivation in an area.

Indicator

- Years of potential life lost

3.5 Education Deprivation Domain

Purpose of the domain

This domain measures deprivation in educational attainment for people aged 15 to 59 inclusive.

Background

Elsewhere in the Southern Africa Development Community (SADC) region it has been shown that the level of educational attainment in the working age adult population is closely linked to an individual's employment status and future opportunities for those individuals and their dependants (Bhorat et al., 2004).

The 2001 Census includes a record of the level of education completed and a record of illiteracy. These two questions provide the best available measures of educational attainment and make up the indicators for this domain. The consultation process additionally raised the importance of affordable education and availability of tertiary education opportunities, but again, these could not be adequately captured using the 2001 Census.

Indicators

- Number of 15-59 year olds inclusive with no schooling completed at secondary level or above; or
- Number of 15-59 year olds inclusive who are illiterate.

Combining the indicators

A simple proportion of the working age population (aged 15 to 59 years old inclusive) who had not

³. Because the direct method of standardisation makes use of individual age/gender death rates it is often associated with small numbers. An empirical Bayes or 'shrinkage' technique is therefore used to smooth the individual age/gender death rates in order to reduce the impact of small number problems on the YPLL.

completed schooling at secondary level or who are illiterate was calculated (i.e. the number of people with no schooling completed at secondary level or above or who are illiterate divided by the population aged 15 to 59 inclusive).

3.6 Living Environment Deprivation Domain

Purpose of the domain

This domain measures both inadequacy in housing conditions and a lack of basic services to the home.

Background

The 2001 Census questionnaire provides indicators on households' access to basic amenities. These aspects of the immediate environment in which people live impact on the quality of their life and provide good measures of deprivation in terms of access to services.

Measuring access to electricity as a basic amenity is a useful indicator of living environment deprivation. Three Census indicators were considered: main source of energy for cooking, lighting and heating. Although cost, availability and effectiveness are factors in the consumption of all energy supplies, it has been argued that in certain instances, the choice of fuel for cooking may be influenced by cultural preference rather than availability alone, whereas the use of electricity for lighting would generally be the preferred choice, if available, and therefore provides a more valid measure of deprivation in terms of access to energy for lighting (Bhorat et al., 2004). This was the measure used in

the previous constituency level index. However, at datazone level, all individuals in a high proportion of datazones were found to lack electricity for lighting. These datazones would all be given the same overall score for this domain, and so it would not be possible to discriminate between datazones in terms of their level of deprivation. For this reason the indicator was altered slightly to include paraffin alongside electricity (and solar power) as the measure of access to energy for lighting. The inclusion of paraffin however, does not imply any judgement about its suitability for lighting purposes, but is rather a means of enabling datazones to be properly ranked on this domain.

Access to clean drinking water and sanitation facilities is essential for the good health of the population and thus an important indicator to include in this domain. An indicator of no access to piped water within the home or within 200 metres of the home was included. The threshold of 200

“ Access to clean drinking water and sanitation facilities is essential for the good health of the population and thus an important indicator to include in this domain ”

metres was regarded by the consultation group as preferable to a threshold of 400 metres (the MDG measure). Though in the previous (constituency) index people without flush toilets or ventilated pit latrines were regarded as deprived, investigation of this indicator at datazone level revealed that again, a high proportion of datazones scored 100 percent. Therefore, as with the access to energy indicator, an additional criterion was added: long drop pit latrines were included alongside flush toilets and ventilated pit latrines. Again, the inclusion of long drop pit latrines does not imply adequacy, but is included simply as a means of discriminating between datazones.

The quality of housing construction provides an important indicator for the quality of day-to-day life and vulnerability to shocks such as adverse weather conditions (Bhorat et al., 2004; Programme of Action Chapter 2 World Summit for Social Development Copenhagen 1995). There was much discussion during the consultation process about traditional dwellings and their adequacy. Though the 2001 Census contains fairly precise information about materials used in the construction process, there is no way of identifying whether the resultant buildings were of a high quality or not. It was therefore agreed that only shacks could be reliably identified as constituting inadequate housing.

The crowding indicator is calculated by dividing the number of people in the household by the number of rooms excluding bathrooms, toilets, kitchens, stoops and verandas. Different versions of the crowding indicator were considered. It was

felt that the most appropriate measure of crowding was to classify three or more people per room as a deprivation. Setting the capacity cut-off at two or more people per room was considered. However, it was felt that this lower capacity would capture too many non-deprived people, for example relatively well-off couples sharing a one room urban apartment.

Indicators

- Number of people living in a household without the use of electricity, paraffin or solar power for lighting; or
- Number of people living in a household without access to a flush toilet or pit latrine (ventilated or long drop); or
- Number of people living in a household without piped water/borehole/borehole with covered tank (but not open tank)/protected well inside their dwelling or yard or within 200 metres; or
- Number of people living in a household that is a shack; or
- Number of people living in a household with three or more people per room.

Combining the indicators

A simple proportion of people living in households experiencing one or more of the deprivations was calculated (i.e. the number of people living in a household without electricity, paraffin or solar power for lighting and/or without adequate toilet facilities and/or without adequate water provision and/or living in a shack and/or in overcrowded conditions divided by the total population).

3.7 Constructing the domain indices

In all domains apart from the Health Deprivation Domain, the overall score is a simple proportion of the relevant population, and so can be easily interpreted. As Censuses can be regarded as a sample from a super-population, it is important to consider and deal with large standard errors. A technique that takes standard errors into account but still enables one to then combine the domains into an overall index of multiple deprivation is called Bayesian shrinkage estimation. Specifically, the scores for datazones can be unreliable when the deprived population is small and so the shrinkage technique was applied to each of the domains. The 'shrunk' estimate is the weighted average of the original datazone level estimate and an appropriate larger spatial unit. The weight is based on the standard error of the original datazone estimate and the amount of variation within the constituency. For further details about this technique see Annex 2 of the 2001 NIMD National Report available at <http://www.undp.org.na/publications.aspx> and also Noble et al. (2006b).

3.8 Standardising and transforming the domain indices

Having obtained a set of domain indices, these needed to be combined into an overall Namibia Index of Multiple Deprivation and in order to combine domain indices which are each based on different metrics there needed to be some way to

“As Censuses can be regarded as a sample from a super-population, it is important to consider and deal with large standard errors. A technique that takes standard errors into account but still enables one to then combine the domains into an overall index of multiple deprivation is called Bayesian shrinkage estimation”

standardise the scores before any combination could take place. A form of standardisation and transformation is required that meets the following criteria. First it must ensure that each domain has a common distribution; second, it must not be scale dependent (i.e. conflate size with level of deprivation); third, it must have an appropriate

“A form of standardisation and transformation is required that meets the following criteria. First it must ensure that each domain has a common distribution; second, it must not be scale dependent (i.e. conflate size with level of deprivation); third, it must have an appropriate degree of cancellation built into it; and fourth, it must facilitate the identification of the most deprived datazones. The exponential transformation of the ranks best meets these criteria and was applied in the NIMD 2001. For further details see Annex 3 and Noble et al. (2006b)”

degree of cancellation built into it; and fourth, it must facilitate the identification of the most deprived datazones. The exponential transformation of the ranks best meets these criteria and was applied in the NIMD 2001. For further details about this technique see Annex 3 of the 2001 NIMD National Report available at <http://www.undp.org.na/publications.aspx> and also Noble et al. (2006b).

3.9 Weights for the domain indices when combining into an overall Index of Multiple Deprivation

Domains are conceived as independent dimensions of multiple deprivation, each with their own additive impact on multiple deprivation. The strength of this impact, though, may vary between domains depending on their relative importance. As a starting point, equal weights for the domains were recommended and this was supported by the consultation group. Each domain was therefore assigned a weight of 1. The NIMD was therefore constructed by adding the standardised and transformed domain indices with equal weights.

SECTION 4: DATAZONE LEVEL NAMIBIAN INDEX OF MULTIPLE DEPRIVATION 2001: OHANGWENA REGION

4.1 Multiple Deprivation

In this section a profile of multiple deprivation in Ohangwena region, at both constituency and datazone levels, is presented. Using the data from the NIMD it is possible to compare the 233 datazones and 11 constituencies within Ohangwena. Map 1

shows the datazones in Ohangwena in relation to the overall NIMD (i.e. the five separate domains of deprivation combined together). The lightest shading relates to the least deprived datazones. The map provides an easy to interpret picture of the pattern of multiple deprivation in the Ohangwena region.

Table 1 below shows some of the data underlying this map. The NIMD 2001 score, national rank (where 1=most deprived and 1,871=least deprived) and Ohangwena rank (where 1=most deprived and 233=least deprived) for the 20 most deprived datazones in Ohangwena are shown. Appendix 2 provides this information for all of the datazones in Ohangwena.

The most deprived datazone in Ohangwena is in

Omulonga constituency, and is therefore given a rank of 1 among the datazones in Ohangwena. If ranked alongside all datazones in Namibia, it ranks as the 5th most deprived. Fifty-six of the 233 datazones in Ohangwena are in the most deprived 10 percent of datazones in Namibia in terms of multiple deprivation (the cut-off for the 10 percent most deprived is a rank of 187). The least deprived datazone in Ohangwena is located in Engela and is ranked at 1,686 in Namibia as a whole.

Table 1: The 20 most deprived datazones in the Ohangwena Region

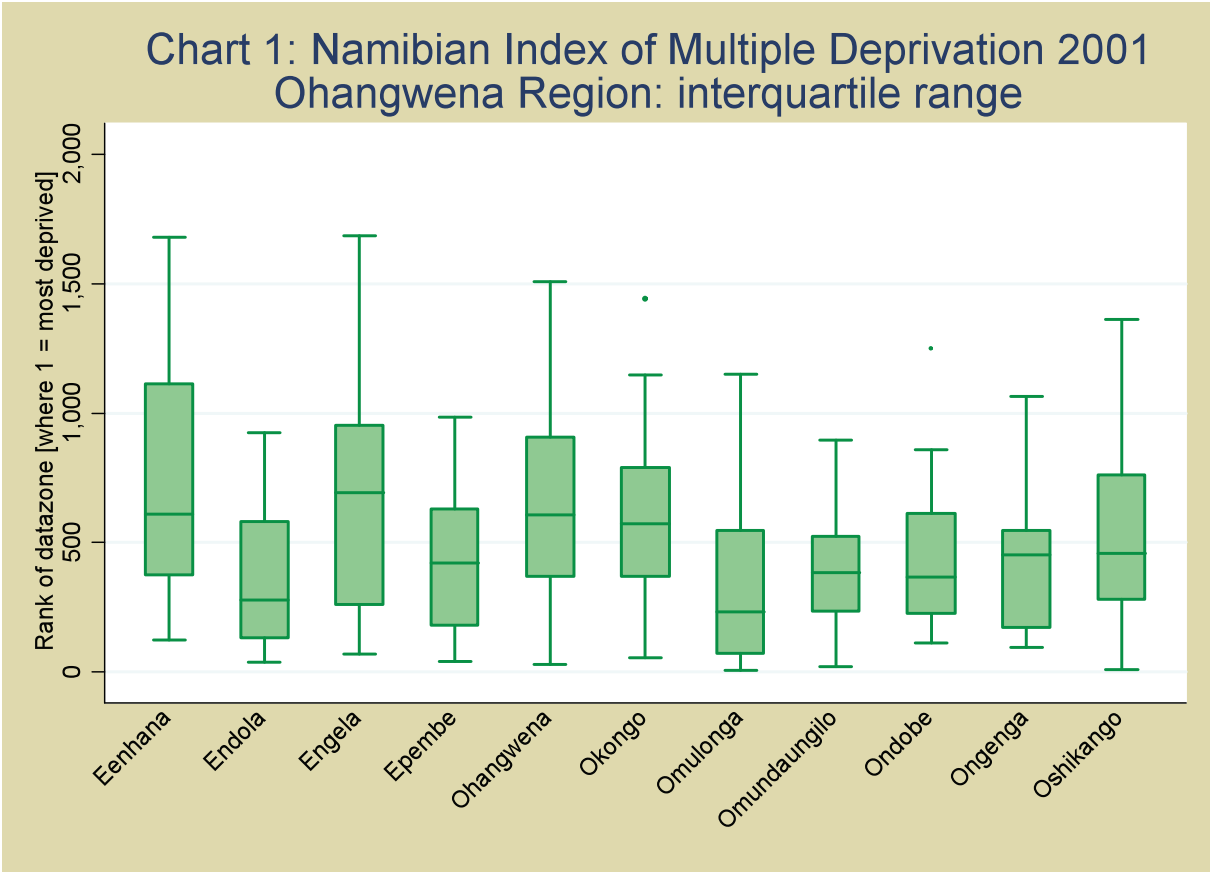
Datazone	Constituency	NIMD score	NIMD rank - national	NIMD rank - within Ohangwena
1085	Omulonga	358.4	5	1
1093	Omulonga	349.9	7	2
1080	Omulonga	348.6	8	3
1053	Oshikango	346.5	9	4
1002	Omundaungilo	334.1	20	5
1094	Omulonga	330.8	21	6
1069	Oshikango	325.1	26	7
962	Ohangwena	321.3	29	8
1107	Omulonga	320.5	32	9
902	Endola	317.4	37	10
942	Epembe	310.1	42	11
1091	Omulonga	309.2	45	12
907	Endola	307.5	49	13
1102	Omulonga	305.5	52	14
954	Epembe	304.1	53	15
993	Okongo	303.0	54	16
976	Okongo	301.4	59	17
1087	Omulonga	299.6	67	18
1072	Oshikango	299.6	68	19
934	Engela	299.2	69	20

The eleven constituencies in Ohangwena vary in terms of the range of deprivation of their datazones. Chart 1 shows the minimum, maximum and median rank of datazones in each constituency and

the interquartile range for the overall NIMD. This is based on the *national* ranks (i.e. where the most deprived datazone in Namibia is ranked 1, and the least deprived datazone is ranked 1,871).

Interpreting the Charts: For details on how to interpret the chart please see the 'How to interpret

interquartile range charts' description in section 4.1 of the national report available at <http://www.undp.org.na/publications.aspx>



The vertical green line for each constituency shows the range of the ranks of the datazones in that constituency (including the dots which appear at either end of the line for some constituencies). Several of the constituencies, particularly Ohangwena, Eenhana and Engela, have a large range of deprivation.

The green box for each constituency shows the range of the NIMD ranks of the middle 50 percent of datazones in the constituency (the interquartile range). The horizontal line within the box for each

constituency represents the rank of the median datazone within that constituency. The median rank in Endola and Omulonga is lower (more deprived) than in the other constituencies. If the box is relatively short this indicates that datazones are ranked in a narrow range, with similar NIMD ranks (and therefore more or less similar levels of multiple deprivation). Most of the constituencies, with the exception of Eenhana and Engela have a relatively narrow range for the middle 50 percent. If this box sits towards the bottom of the chart it tells us that datazones in the constituency

are concentrated in the most deprived part of the national distribution of the NIMD. If the box sits towards the top of the chart it tells us that datazones in the constituency are concentrated in the least deprived part of the national distribution. For Ohangwena region, datazones in all of the constituencies are concentrated towards the most deprived end of the distribution. This is particularly the case for datazones in Endola, Epembe, Omulonga, Omundaungilo, Ondobe and Ongenga constituencies.

Further analysis shows that eight of the eleven constituencies in Ohangwena have datazones in the most deprived 10 percent of datazones on the overall NIMD. The eight constituencies and the number of datazones that are in the most deprived 10 percent of datazones on the overall NIMD within Ohangwena are as follows: Endola (3 of 24), Engela (1 of 22), Epembe (3 of 17), Ohangwena (1 of 19), Okongo (2 of 26), Omulonga (9 of 34), Omundaungilo (1 of 9) and Oshikango (3 of 23).

4.2 Domains of Deprivation

Although it is not possible to calculate multiple deprivation rates as such, each of the individual domains of deprivation can be presented at constituency and datazone levels, and for all domains except health the domain scores can be compared.

Table 2 provides the domain scores for each constituency in Ohangwena, excluding health as the health score is not calculated as a rate. The other four domains are in the form of simple deprivation

rates. So for example, 85.8 percent of the population in Engela constituency experienced material deprivation in 2001. The within Ohangwena ranks are shown as well as the domain scores, for each constituency in Ohangwena (where 1=most deprived).

In terms of material deprivation, the most deprived constituencies in Ohangwena are Epembe, Omundaungilo and Okongo with a very high 99 percent, 99 percent and 98 percent of the population, respectively, experiencing material deprivation in these constituencies.

In relation to employment deprivation, the most deprived constituency is Endola (with 78 percent of the relevant population being employment deprived in 2001), followed by Ongenga (72 percent). Epembe and Okongo have comparatively low proportions of the relevant population experiencing employment deprivation at 8 percent and 4 percent, respectively. In all of the constituencies in Ohangwena over 60 percent of the relevant population was education deprived in 2001. The most deprived constituency however was Epembe with 69 percent of the relevant population being education deprived.

In terms of living environment deprivation, in all of the constituencies a very high proportion (over 90 percent) of the population experience living environment deprivation. The most deprived constituency is Epembe (with almost 100 percent of the total population experiencing living environment deprivation in 2001) and the least deprived constituency is Engela (with 94

percent of the total population experiencing living environment deprivation in 2001).

The domain scores and ranks for each of the datazones in Ohangwena are presented in Appendix 2. As in Table 2, four of the five domains are expressed as rates. Health deprivation is expressed as the years of potential life lost in that datazone.

A datazone with a relatively high death rate in a young age group (including areas with high levels of infant mortality) will have a higher score than a datazone with a similarly relatively high death rate for an older age group, all else being equal. The measure is related to life expectancy in an area, so datazones with low life expectancy will have high scores on this domain.

Table 2: Domain scores and ranks for each constituency in the Ohangwena Region

Constituency	Material deprivation rate (%)	Material deprivation rank (within Ohangwena)	Employment deprivation rate (%)	Employment deprivation rank (within Ohangwena)	Education deprivation rate (%)	Education deprivation rank (within Ohangwena)	Living environment deprivation rate (%)	Living environment deprivation rank (within Ohangwena)
Eenhana	88.6	6	26.2	8	62.9	11	95.9	9
Endola	89.4	5	78.1	1	63.0	9	96.1	8
Engela	85.8	7	30.0	7	66.2	5	94.4	11
Epembe	98.9	1	8.2	10	68.5	1	99.8	1
Ohangwena	79.5	10	38.9	6	64.2	8	95.7	10
Okongo	98.3	3	3.6	11	66.1	6	99.4	2
Omulonga	82.4	8	63.7	3	67.5	2	98.8	5
Omundaungilo	98.6	2	19.4	9	67.3	3	99.2	3
Ondobe	65.3	11	39.5	5	66.9	4	99.0	4
Ongenga	93.7	4	72.2	2	62.9	10	96.2	6
Oshikango	79.7	9	43.9	4	65.2	7	96.1	7

Table 3 shows the percentage of each constituency's datazones that are in the most deprived 10 percent of datazones *nationally* for each domain. All of the constituencies in Ohangwena feature amongst the most deprived 10 percent of datazones in Namibia on two or more of the domains. Omulonga is the only constituency to have datazones in the most deprived 10 percent nationally for all five of the domains as it is the only constituency in Ohangwena

to have datazones in the most deprived 10 percent in terms of education deprivation. Over 70 percent of the datazones in Epembe and Okongo are in the most deprived 10 percent of datazones nationally in terms of material deprivation. Almost 90 percent of Endola's datazones are in the most deprived 10 percent nationally in terms of employment deprivation, and Ongenga has a similarly high percentage of datazones (84 percent) in the most deprived 10 percent.

Table 3: Percentage of datazones in most deprived 10 percent of datazones in Namibia

Constituency	Number of datazones	Material deprivation	Employment deprivation	Health deprivation	Education deprivation	Living env. deprivation
Eenhana	19	21.1	10.5	10.5	0.0	26.3
Endola	24	0.0	87.5	16.7	0.0	0.0
Engela	22	0.0	18.2	27.3	0.0	0.0
Epembe	17	70.6	0.0	11.8	0.0	47.1
Ohangwena	19	5.3	10.5	36.8	0.0	5.3
Okongo	26	76.9	0.0	11.5	0.0	26.9
Omulonga	34	11.8	52.9	32.4	2.9	23.5
Omundaungilo	9	44.4	0.0	33.3	0.0	33.3
Ondobe	21	9.5	9.5	23.8	0.0	52.4
Ongenga	19	0.0	84.2	31.6	0.0	0.0
Oshikango	23	8.7	17.4	39.1	0.0	17.4

Table 4 shows the percentage of each constituency's datazones that are in the most deprived 10 percent of datazones *within Ohangwena* for each domain. Again Omulonga is the only constituency that has at least one datazone in the most deprived 10 percent of datazones for each domain. Epembe, Ohangwena

and Okongo have datazones in the most deprived 10 percent for four of the five domains. The 10 percent most deprived datazones in terms of health can be found in all constituencies; this is not the case for any other domain.

Table 4: Percentage of datazones in most deprived 10% of datazones in the Ohangwena Region

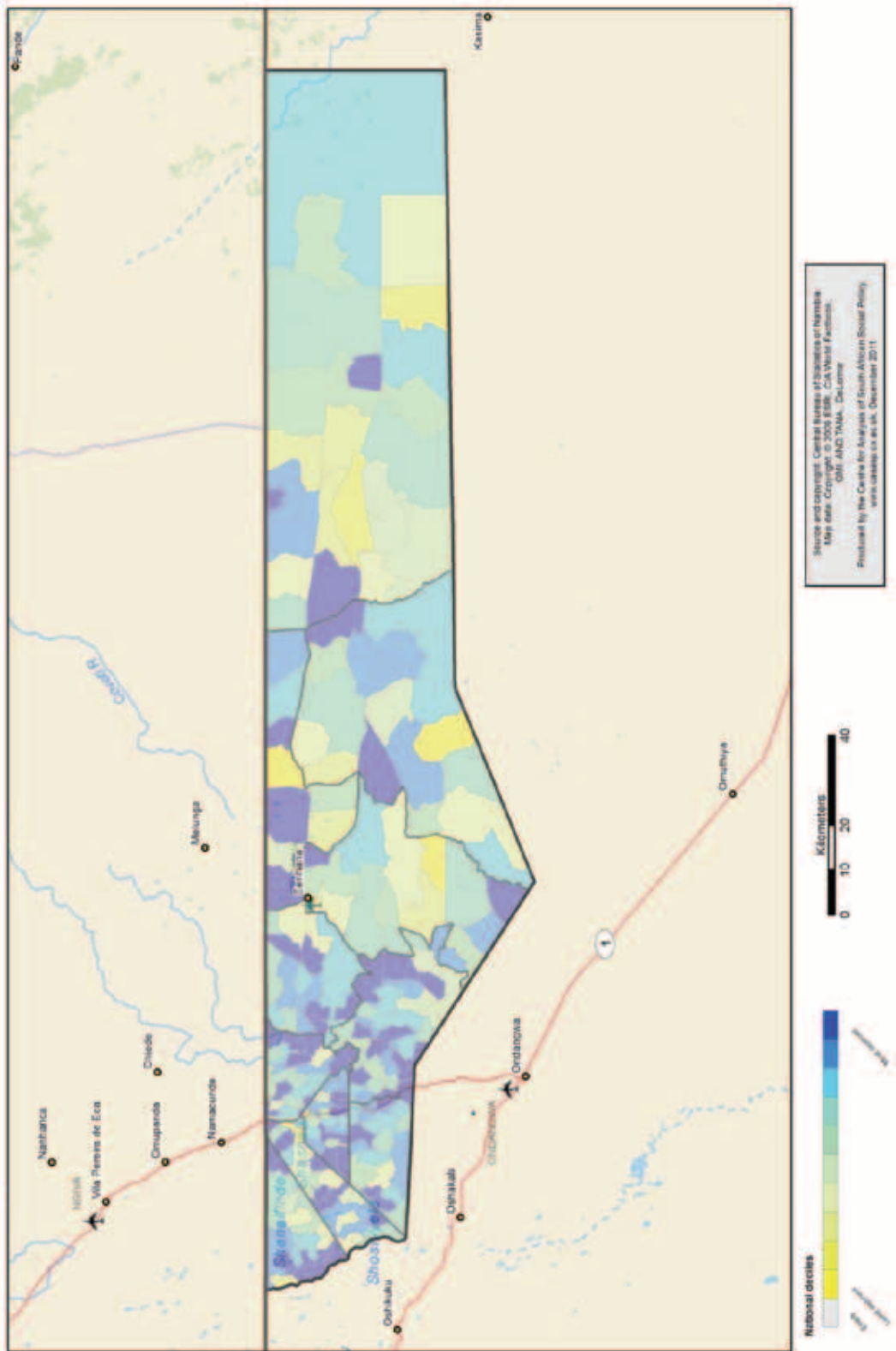
Constituency	Number of datazones	Material deprivation	Employment deprivation	Health deprivation	Education deprivation	Living env. deprivation
Eenhana	19	0.0	0.0	10.5	0.0	15.8
Endola	24	0.0	37.5	4.2	0.0	0.0
Engela	22	0.0	4.5	13.6	0.0	0.0
Epembe	17	35.3	0.0	5.9	5.9	5.9
Ohangwena	19	5.3	5.3	26.3	10.5	0.0
Okongo	26	46.2	0.0	3.8	26.9	15.4
Omulonga	34	2.9	26.5	8.8	17.6	5.9
Omundaungilo	9	33.3	0.0	22.2	0.0	22.2
Ondobe	21	0.0	0.0	14.3	33.3	33.3
Ongenga	19	0.0	10.5	5.3	0.0	0.0
Oshikango	23	0.0	4.3	4.3	0.0	17.4

The following maps present each of the five domains at datazone level for Ohangwena region. As with Map 1, the lightest shading relates to the

least deprived datazones. It is intended that these maps should provide accessible profiles of the domains of deprivation in the Ohangwena Region.

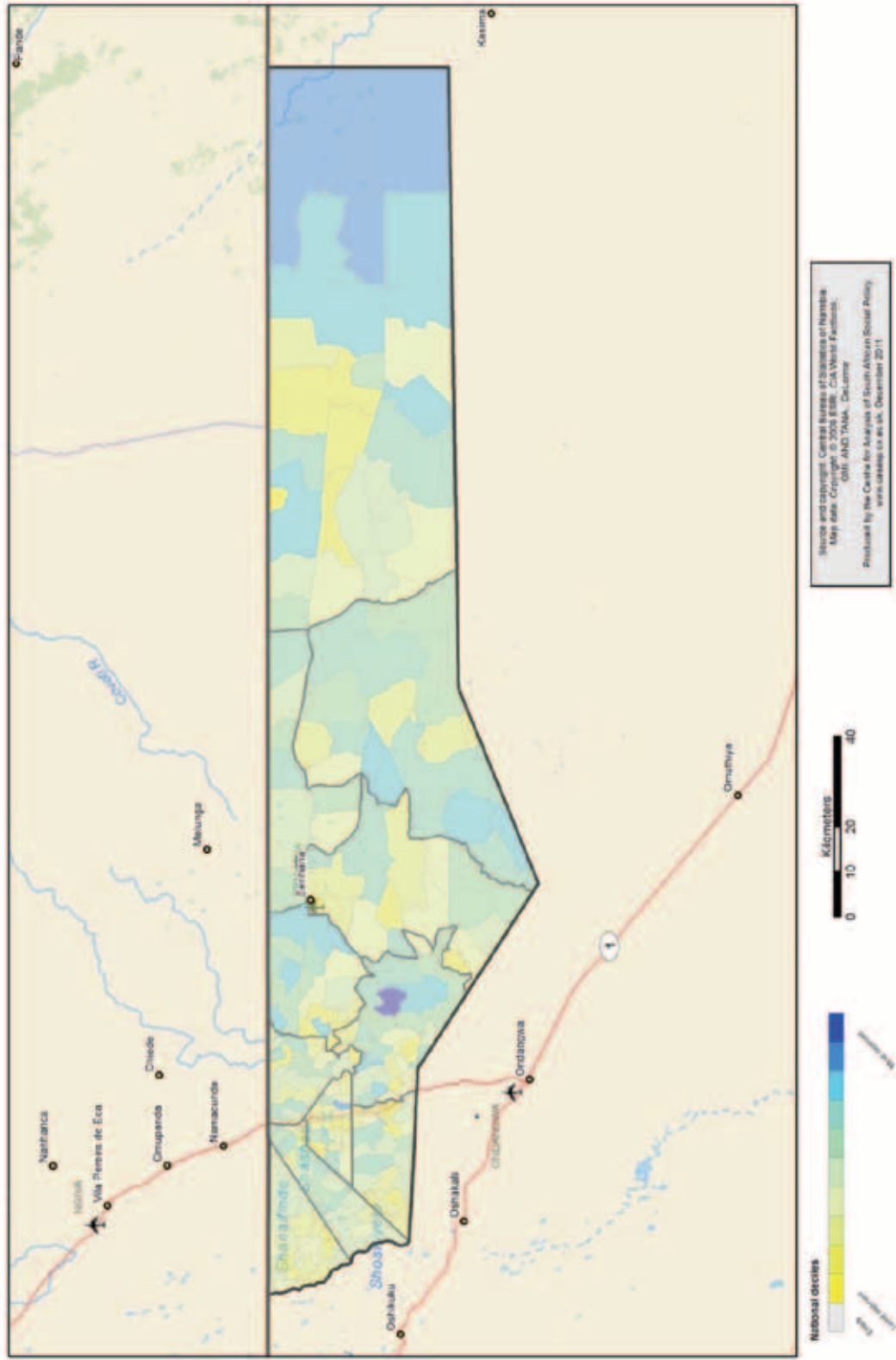
Map 4

**Namibian Index of Multiple Deprivation 2001 - Health Deprivation Domain
Ohangwena Region**



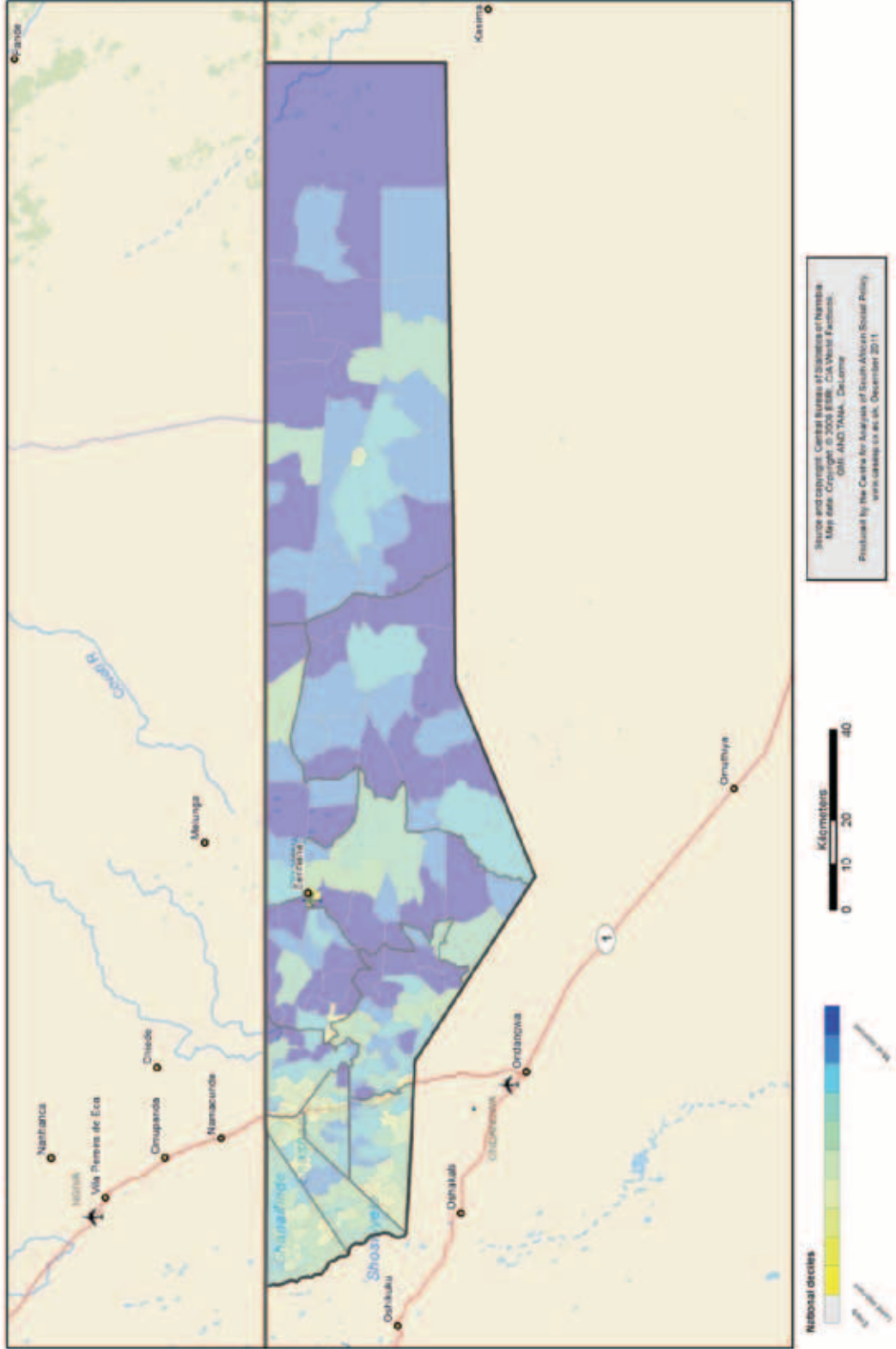
Map 5

**Namibian Index of Multiple Deprivation 2001 - Education Deprivation Domain
Ohangwena Region**



Map 6

Namibian Index of Multiple Deprivation 2001 - Living Environment Deprivation Domain
 Ohangwena Region



SECTION 5: CONCLUSIONS AND SOME POLICY RECOMMENDATIONS



The analysis presented in this report has identified particular areas – both datazones and constituencies – where deprivation is high relative to other areas in Ohangwena region. This analysis can support pro-poor policy formulation processes and programmatic interventions in many ways.

By providing reliable and objective information on, and profiling the distribution of, multiple deprivation and the distribution of the individual domains of deprivation across the region, the analysis presented in this report can provide planners; policy and decision makers at the regional level with the evidence base on which to plan and make decisions regarding resource allocation and the geographic areas (constituencies and datazones) and sectors in which to prioritise public investments, government support and service delivery. Specifically, the analysis can be useful in the following ways:

Temporal analysis of nature, scope and effects of poverty reduction programmes: By describing the geographical distribution and extent of individual dimensions of deprivation and overall multiple deprivation at constituency and datazone levels, this report provides a baseline map of deprivation against which progress in poverty reduction in these areas can be measured over time, that is between successive censuses (2001 and 2011 censuses). The NIMD is based on data relating to 2001 time- line and significant changes may have taken place since then. It will thus be necessary to conduct further analyses using the 2011 Census data and information in order to shed light on the extent to which changes have occurred in the region and possible reasons for any noted changes.

“By providing reliable and objective information on, and profiling the distribution of multiple deprivation and the individual domains of deprivation across the country, the NIMD can provide policy and decision makers with the evidence base on which to make decisions regarding resource allocation and the geographic areas and sectors in which to prioritise public investments, government support and service delivery relating to the various domains of deprivation”

Interrogating the causes of inequality: The report could be used by the regional authorities to initiate the process of interrogating the causal factors of such wide inter- and intra-constituency (datazone level) variations with respect to specific domains and the overall combined and weighted index of deprivation.

Better planning and targeting of development resources: Regional Councils have two distinct sources of development revenue – transfers from central government and locally generated resources. The NIMD allows for better planning for and targeting of such resources on the basis of relative deprivation to the datazone level. Priorities can then be identified at the constituency and datazone levels that could be addressed through integrated development approaches. Importantly, funds could be targeted to and ring-fenced for those sectors/domains in which specific constituencies and datazones are particularly deprived or to the most deprived constituencies and datazones within a constituency. It is also conceivable that

constituencies and datazones characterised by severe multiple deprivation could be targeted for integrated development projects and programmes. The most deprived areas vary by domain, and not all areas show a uniform degree of deprivation across the domains. This should be taken into account when selecting a measure of deprivation to use as it is important to choose the most appropriate measure for the particular policy purpose.

It should be noted however, that the NIMD, as presented in this report, provides a profile of *relative* deprivation in Ohangwena region and even the least deprived areas, such as Eenhana constituency, contain pockets of deprivation. They are simply less deprived than other areas with higher levels of deprivation such as Omulonga constituency. As such, spatially targeted policy initiatives should be regarded as a complement to, rather than a substitution for, mainstream pro-poor policies and strategies that the Regional Council and National Government are already implementing in Ohangwena region.

ANNEX 1: INDICATORS INCLUDED IN THE NIMD 2001

Material Deprivation Domain

Numerator

- Number of people living in a household with no access to a television or a radio; or
- Number of people living in a household with no access to a telephone/cell phone

Denominator

Total population

Employment Deprivation Domain

Numerator

- Number of people aged 15-59 who are unemployed

Denominator

Total economically active population aged 15-59 inclusive

Health Deprivation Domain

Numerator

- Years of potential life lost

Education Deprivation Domain

Numerator

- Number of 15-59 year olds (inclusive) with no schooling completed at secondary level or above; or

- Number of 15-59 year olds (inclusive) who are illiterate

Denominator

Population aged 15-59 (inclusive)

Living Environment Deprivation Domain

Numerator

- Number of people living in a household without the use of electricity, paraffin or solar power for lighting; or
- Number of people living in a household without access to a flush toilet or pit latrine (ventilated or long drop); or
- Number of people living in a household without piped water/borehole/borehole with covered tank (but not open tank)/protected well inside their dwelling or yard or within 200 metres; or
- Number of people living in a household that is a shack; or
- Number of people living in a household with three or more people per room

Denominator

Total population

ANNEX 2: DOMAIN AND OVERALL NIMD SCORES AND RANKS

This table presents the scores and ranks for every datazone in Ohangwena for the five domains and the overall NIMD. For all domains except health the score is calculated as a rate. So for example, 61.4% of the population in datazone 875 in Eenhana constituency experienced material deprivation in 2001. Health is expressed as the years of potential life lost (a measure of premature mortality) in that datazone, and a higher score indicates greater health deprivation. The within Ohangwena ranks are shown for each datazone (where 1=most deprived).

Datazone	Constituency	Material deprivation score	Material deprivation rank	Employment deprivation score	Employment deprivation rank	Health deprivation score	Health deprivation rank	Education deprivation score	Education deprivation rank	Living environment deprivation score	Living environment deprivation rank	NIMD score	NIMD rank
875	Eenhana	61.4	210	4.2	203	733.9	132	61.4	184	87.0	222	98.3	227
876	Eenhana	91.9	139	19.2	161	521.3	178	59.6	202	96.8	180	132.2	218
877	Eenhana	97.2	77	26.0	146	744.0	129	69.1	64	98.7	134	206.7	152
878	Eenhana	93.5	127	70.9	56	359.5	200	59.5	203	98.7	138	200.2	164
879	Eenhana	96.4	88	45.0	110	586.0	167	55.1	227	99.9	62	211.5	143
880	Eenhana	95.7	103	30.3	137	229.4	221	64.4	152	99.9	12	200.6	163
881	Eenhana	97.8	66	55.0	92	71.9	232	64.2	154	99.8	81	206.6	153
882	Eenhana	98.6	46	17.2	164	644.1	154	67.4	90	99.9	46	229.5	111
883	Eenhana	86.0	170	6.8	194	1707.6	19	71.5	26	99.9	53	247.4	77
884	Eenhana	98.6	43	18.8	162	1685.7	22	67.9	83	99.9	52	280.5	37
885	Eenhana	72.1	194	69.2	63	1178.5	65	65.3	139	98.4	144	235.4	95
886	Eenhana	94.9	114	16.2	167	506.9	181	62.3	174	98.0	152	145.6	214
887	Eenhana	95.3	107	31.7	134	1013.0	87	55.8	221	97.8	156	186.2	188
888	Eenhana	96.0	95	45.0	111	683.4	144	71.0	34	99.9	36	262.4	58
889	Eenhana	95.0	112	21.4	156	323.5	209	59.2	206	99.9	7	188.1	187
890	Eenhana	99.3	27	37.1	126	701.4	139	64.4	151	99.9	1	278.6	38
891	Eenhana	98.9	34	42.3	117	614.8	161	70.4	38	97.2	175	230.2	110
892	Eenhana	47.5	220	17.0	165	431.1	190	65.6	128	81.6	230	90.2	229
893	Eenhana	43.6	223	26.6	145	229.9	220	44.5	233	49.0	233	56.6	232
894	Endola	94.5	119	61.0	81	295.8	214	60.6	191	93.4	205	168.7	204
895	Endola	97.4	74	85.0	15	480.4	182	69.9	53	99.8	91	281.2	36
896	Endola	77.6	189	72.8	52	972.7	90	65.4	133	99.8	89	250.4	72
897	Endola	93.9	123	89.5	4	807.2	114	69.6	54	99.8	95	289.9	23
898	Endola	97.9	61	90.3	2	1081.1	78	67.9	85	93.6	204	285.0	33

899	Endola	92.0	137	74.3	47	716.0	135	62.5	172	94.9	198	211.9	142
900	Endola	90.6	148	84.7	17	701.7	138	66.5	107	98.5	141	246.3	79
901	Endola	92.6	136	72.3	54	704.8	137	58.7	209	95.1	197	204.9	155
902	Endola	96.3	92	84.8	16	1238.7	57	70.3	41	99.5	104	317.4	10
903	Endola	96.7	82	88.3	8	792.8	119	69.4	60	99.0	123	286.6	30
904	Endola	81.0	182	75.0	42	809.0	113	49.2	230	88.9	216	188.7	183
905	Endola	87.4	165	87.7	9	945.0	92	56.6	218	98.0	150	237.9	88
906	Endola	94.7	117	89.5	5	905.3	99	65.3	137	99.2	111	274.4	44
907	Endola	95.8	101	77.1	37	2277.3	7	66.7	103	98.7	136	307.5	13
908	Endola	86.2	169	56.9	88	758.6	125	58.4	211	92.9	208	175.0	198
909	Endola	91.1	147	69.9	59	1177.1	66	62.1	175	99.0	126	252.6	68
910	Endola	96.0	96	79.1	32	837.2	106	61.6	181	99.8	86	268.8	52
911	Endola	82.2	176	67.9	68	1122.0	75	60.4	195	96.1	186	216.1	131
912	Endola	81.4	179	63.2	78	1302.8	51	55.8	223	85.2	225	203.1	159
913	Endola	60.1	211	71.5	55	1301.5	52	60.3	198	88.6	217	207.0	149
914	Endola	96.4	89	70.9	57	1152.2	69	54.4	228	87.1	221	230.4	109
915	Endola	97.7	67	85.8	11	571.7	170	65.4	132	98.7	135	260.5	60
916	Endola	71.0	196	81.5	26	996.3	88	65.3	135	96.9	177	231.5	105
917	Endola	92.9	131	80.7	29	1166.6	68	65.4	131	98.0	151	266.9	55
918	Engela	80.3	184	66.5	70	316.6	212	67.5	89	95.3	195	177.3	196
919	Engela	98.3	57	19.9	160	3042.0	4	69.4	58	99.3	107	270.9	50
920	Engela	92.7	135	28.1	141	2019.4	10	67.2	95	99.8	92	250.7	71
921	Engela	23.0	229	20.9	159	110.0	230	64.1	155	78.2	231	59.5	231
922	Engela	98.3	54	68.1	66	557.8	173	68.7	71	99.9	73	277.6	39
923	Engela	88.1	161	52.1	100	317.0	211	66.2	112	99.9	64	203.0	160
924	Engela	95.2	108	55.1	91	1398.1	43	69.5	56	97.2	172	261.5	59
925	Engela	94.1	122	40.9	121	1149.8	71	64.9	145	97.6	166	214.4	136
926	Engela	94.7	116	1.7	220	371.5	196	65.3	134	96.4	182	125.6	221
927	Engela	80.5	183	16.7	166	756.3	126	61.8	179	93.3	206	127.1	220
928	Engela	97.6	72	6.9	193	935.4	94	60.6	190	95.5	192	165.7	206
929	Engela	60.0	213	2.4	212	351.0	201	65.8	125	91.1	214	85.7	230

930	Engela	95.4	106	49.0	105	299.8	213	66.6	106	98.8	133	190.9	180
931	Engela	96.6	84	21.4	158	1144.8	73	64.7	148	96.9	178	196.3	173
932	Engela	69.0	200	5.9	198	165.2	227	56.7	217	69.3	232	55.4	233
933	Engela	91.3	145	32.1	132	738.9	131	65.8	123	97.7	162	175.3	197
934	Engela	93.6	125	74.1	49	1770.7	18	65.0	143	99.8	94	299.2	20
935	Engela	78.1	188	29.2	140	1489.8	37	71.5	28	92.2	212	204.1	157
936	Engela	95.1	111	95.3	1	618.2	158	68.1	80	95.7	190	247.0	78
937	Engela	84.0	174	3.2	206	1649.1	24	71.5	27	94.9	199	195.4	175
938	Engela	93.6	126	79.6	30	922.7	97	61.6	180	99.2	110	256.0	64
939	Engela	96.1	94	44.1	113	427.4	191	66.7	104	88.2	219	170.2	202
940	Epembe	98.5	50	1.0	224	764.2	123	68.8	69	99.9	40	229.1	112
941	Epembe	99.8	19	0.6	231	410.8	193	61.0	187	99.9	56	198.1	169
942	Epembe	99.7	22	4.6	199	2009.5	11	71.6	24	99.9	35	310.1	11
943	Epembe	98.1	58	6.4	196	86.8	231	59.8	201	99.9	48	161.7	209
944	Epembe	99.9	7	3.0	208	1223.5	60	70.1	45	99.9	30	293.7	22
945	Epembe	99.9	3	2.0	218	700.0	142	70.3	39	99.9	11	272.6	49
946	Epembe	96.9	78	55.7	90	647.5	153	70.3	40	99.9	58	266.8	56
947	Epembe	98.6	42	15.5	170	325.8	207	72.9	10	99.2	109	203.2	158
948	Epembe	99.8	20	7.3	191	472.0	184	70.1	43	99.9	61	230.7	107
949	Epembe	99.0	31	7.5	189	809.3	112	71.5	29	99.5	105	230.7	108
950	Epembe	99.8	12	0.5	233	220.0	222	62.8	167	99.9	43	196.6	171
951	Epembe	99.4	26	9.2	182	672.2	148	67.4	91	99.9	75	224.8	119
952	Epembe	98.9	35	2.2	213	479.7	183	69.5	57	99.9	39	220.4	124
953	Epembe	96.5	87	4.2	202	1058.2	82	69.5	55	99.7	98	216.9	129
954	Epembe	98.5	49	31.1	135	1588.3	31	69.9	51	99.9	32	304.1	15
955	Epembe	98.3	55	0.6	232	350.1	202	60.5	193	99.9	60	169.3	203
956	Epembe	98.7	40	2.2	215	754.0	127	68.4	74	99.9	24	240.7	85
957	Ohangwena	87.7	164	29.7	139	1069.7	79	60.7	189	99.9	67	206.7	151
958	Ohangwena	85.6	171	85.3	14	821.4	109	55.8	222	96.1	187	217.8	128
959	Ohangwena	71.7	195	24.7	150	511.0	179	59.9	200	86.7	224	104.0	225
960	Ohangwena	65.4	205	8.9	184	537.0	176	68.1	78	82.6	228	106.6	224

961	Ohangwena	65.5	204	10.4	179	1802.2	15	63.5	164	93.8	202	163.4	207
962	Ohangwena	95.5	105	58.5	84	1781.5	17	76.9	3	99.1	116	321.3	8
963	Ohangwena	51.8	218	48.3	106	1189.7	64	60.0	199	92.9	209	171.6	201
964	Ohangwena	89.3	158	60.6	82	400.0	195	67.8	86	97.8	158	195.4	176
965	Ohangwena	99.6	23	23.4	154	1838.5	14	62.8	168	97.2	173	248.6	75
966	Ohangwena	58.1	215	41.3	119	1041.8	85	58.9	208	99.9	29	214.9	134
967	Ohangwena	81.1	181	39.3	123	991.8	89	63.0	166	98.6	139	188.6	184
968	Ohangwena	90.2	150	64.8	75	1200.2	63	57.3	215	98.7	137	236.1	93
969	Ohangwena	90.6	149	8.7	185	1863.7	13	69.3	61	97.7	163	213.2	141
970	Ohangwena	86.6	167	53.5	97	793.8	118	67.0	97	96.4	183	199.8	166
971	Ohangwena	75.4	191	33.9	131	1255.5	55	71.7	22	97.7	160	214.5	135
972	Ohangwena	87.9	162	10.2	181	2391.8	6	71.0	35	99.8	79	248.7	74
973	Ohangwena	89.4	156	38.9	124	539.0	175	60.8	188	99.8	78	183.6	192
974	Ohangwena	63.9	206	25.9	147	246.1	218	64.3	153	81.7	229	90.4	228
975	Ohangwena	94.6	118	79.2	31	1324.9	50	62.6	171	99.7	97	288.4	26
976	Okongo	99.9	1	3.2	207	1083.2	77	72.0	19	99.9	19	301.4	17
977	Okongo	97.6	71	2.0	217	234.3	219	70.1	47	98.8	132	160.7	210
978	Okongo	95.5	104	4.4	200	217.3	223	57.8	213	99.9	69	142.5	216
979	Okongo	84.7	173	12.1	174	168.5	226	66.0	119	94.4	200	101.8	226
980	Okongo	96.6	86	4.4	201	365.7	198	65.0	142	99.0	124	148.3	213
981	Okongo	99.9	9	0.7	227	614.4	162	69.4	59	99.9	63	236.2	91
982	Okongo	99.8	16	1.8	219	597.3	165	70.1	44	99.4	106	219.1	127
983	Okongo	99.8	17	2.4	211	4547.3	2	64.8	146	99.8	84	275.0	43
984	Okongo	98.6	47	2.2	214	531.6	177	71.6	23	99.8	87	210.7	144
985	Okongo	98.5	48	14.2	171	1460.9	39	67.2	93	97.8	157	232.3	103
986	Okongo	98.6	45	2.1	216	509.9	180	48.6	231	99.9	9	201.1	162
987	Okongo	99.9	5	8.7	186	617.8	159	61.9	176	99.9	42	230.9	106
988	Okongo	99.0	29	0.7	228	674.1	147	72.6	13	99.9	44	244.7	81
989	Okongo	99.9	8	6.6	195	922.5	98	62.3	173	98.0	147	210.6	145
990	Okongo	99.0	30	0.6	230	158.0	228	72.9	11	99.8	80	199.4	167
991	Okongo	96.3	91	0.9	225	343.5	205	72.4	14	99.9	74	188.5	185

992	Okongo	97.3	75	1.6	221	294.8	216	65.9	121	99.9	77	165.9	205
993	Okongo	99.9	4	0.7	226	868.7	101	78.6	2	99.9	37	303.0	16
994	Okongo	98.8	36	3.6	205	558.2	172	71.9	20	99.9	59	228.1	115
995	Okongo	99.3	28	1.4	222	608.1	163	67.6	88	99.9	21	236.1	92
996	Okongo	99.9	2	2.5	210	440.5	187	64.6	149	99.9	22	232.7	102
997	Okongo	99.8	15	6.1	197	406.9	194	66.3	108	99.8	82	207.6	148
998	Okongo	99.8	13	3.8	204	135.9	229	65.5	130	99.1	120	173.4	199
999	Okongo	99.9	11	0.6	229	262.8	217	58.3	212	99.9	71	184.1	191
1000	Okongo	98.7	41	1.0	223	317.9	210	66.3	109	99.9	70	184.3	190
1001	Okongo	99.9	10	7.2	192	1631.4	26	46.8	232	99.9	68	258.7	61
1002	Omundaungilo	99.8	21	43.5	114	1690.2	21	66.1	117	99.9	20	334.1	5
1003	Omundaungilo	97.6	69	2.8	209	191.3	225	63.5	163	99.9	34	173.2	200
1004	Omundaungilo	99.8	18	11.2	177	572.6	168	66.9	99	99.9	72	227.5	117
1005	Omundaungilo	99.8	14	16.1	168	0.0	233	70.1	46	99.9	55	215.8	132
1006	Omundaungilo	97.4	73	24.6	152	2090.6	8	67.0	98	95.9	188	235.2	96
1007	Omundaungilo	98.8	37	9.0	183	923.1	96	65.3	136	97.4	170	196.3	174
1008	Omundaungilo	97.6	70	11.9	175	1120.8	76	71.1	33	99.9	10	274.0	46
1009	Omundaungilo	98.0	59	51.9	101	369.6	197	66.1	116	99.9	65	233.8	99
1010	Omundaungilo	98.3	56	23.3	155	1367.5	49	68.8	68	99.6	103	254.8	67
1011	Ondobe	62.7	208	65.9	71	625.1	157	68.4	73	99.9	6	256.2	63
1012	Ondobe	50.5	219	50.4	104	1227.0	59	73.2	8	97.7	159	228.1	116
1013	Ondobe	12.0	232	65.6	72	763.0	124	67.9	84	98.5	140	192.0	179
1014	Ondobe	74.4	192	74.5	46	865.9	102	66.0	120	99.9	3	281.9	35
1015	Ondobe	62.3	209	69.6	61	1426.1	40	60.4	196	99.9	27	276.5	40
1016	Ondobe	43.1	224	47.0	108	748.3	128	50.0	229	89.6	215	129.9	219
1017	Ondobe	95.8	99	21.4	157	1662.8	23	55.1	226	99.9	13	256.8	62
1018	Ondobe	99.0	32	15.9	169	4561.7	1	72.2	16	98.9	130	284.3	34
1019	Ondobe	96.8	80	13.6	173	1136.5	74	63.9	158	99.9	28	240.1	86
1020	Ondobe	69.5	199	53.4	98	1218.9	61	68.9	67	98.4	142	228.1	114
1021	Ondobe	32.4	227	27.9	143	295.4	215	74.0	6	99.9	2	196.5	172
1022	Ondobe	42.3	225	38.5	125	838.3	105	74.3	4	99.9	4	249.5	73

1023	Ondobe	43.9	222	10.7	178	653.4	150	67.9	82	99.9	16	177.7	194
1024	Ondobe	94.8	115	65.5	73	1050.2	83	55.3	225	98.9	128	239.0	87
1025	Ondobe	90.2	151	7.6	188	649.9	151	73.9	7	99.9	33	219.9	125
1026	Ondobe	93.6	124	40.9	120	343.7	204	73.1	9	99.1	121	204.6	156
1027	Ondobe	91.4	144	26.7	144	851.0	103	71.8	21	99.9	51	236.0	94
1028	Ondobe	98.6	44	45.7	109	791.3	120	63.7	160	99.9	15	274.3	45
1029	Ondobe	20.8	230	30.3	136	1247.2	56	71.1	31	99.9	66	214.0	137
1030	Ondobe	79.5	185	24.6	151	2622.5	5	69.0	65	99.9	50	255.8	65
1031	Ondobe	14.7	231	42.5	116	739.9	130	70.6	37	99.9	41	206.0	154
1032	Ongenga	95.1	110	40.4	122	936.6	93	65.8	124	99.1	115	219.4	126
1033	Ongenga	96.3	90	81.1	27	215.2	224	64.1	156	98.0	153	213.6	140
1034	Ongenga	97.3	76	74.2	48	1521.1	35	60.3	197	97.7	161	275.4	42
1035	Ongenga	96.9	79	78.9	33	872.8	100	64.5	150	96.3	184	251.3	70
1036	Ongenga	93.2	129	74.7	44	804.0	116	64.8	147	94.4	201	224.9	118
1037	Ongenga	93.4	128	68.1	67	1044.2	84	59.5	205	95.5	194	224.4	120
1038	Ongenga	89.8	153	74.6	45	541.2	174	59.5	204	97.1	176	198.5	168
1039	Ongenga	96.8	81	68.4	65	347.5	203	61.6	182	93.1	207	190.5	181
1040	Ongenga	91.3	146	83.6	20	436.9	188	65.3	138	96.3	185	213.9	139
1041	Ongenga	97.9	63	80.9	28	603.7	164	66.2	113	99.8	96	273.0	48
1042	Ongenga	92.9	133	65.2	74	616.8	160	65.5	129	98.1	146	216.2	130
1043	Ongenga	89.2	159	76.2	41	1278.4	53	60.6	192	95.6	191	241.3	83
1044	Ongenga	94.3	120	54.0	95	327.6	206	58.6	210	86.8	223	151.6	211
1045	Ongenga	94.9	113	82.3	25	1367.6	48	61.4	183	95.5	193	262.9	57
1046	Ongenga	96.6	85	72.6	53	2026.4	9	66.8	100	95.8	189	289.0	25
1047	Ongenga	95.7	102	89.0	7	720.6	134	66.2	111	99.1	122	267.1	54
1048	Ongenga	97.7	68	68.8	64	1061.7	81	62.6	170	99.1	119	267.7	53
1049	Ongenga	94.2	121	76.7	39	1604.6	28	66.7	105	98.0	148	286.2	31
1050	Ongenga	76.9	190	69.4	62	1640.5	25	56.4	219	91.8	213	223.4	122
1051	Oshikango	60.1	212	63.8	76	1263.5	54	61.9	178	92.9	210	202.3	161
1052	Oshikango	89.8	154	60.0	83	442.8	186	71.5	25	99.1	114	224.2	121
1053	Oshikango	98.8	39	67.8	69	1393.1	44	71.1	32	99.9	49	346.5	4

1054	Oshikango	68.8	201	33.9	130	640.8	155	60.5	194	82.6	227	119.7	222
1055	Oshikango	86.4	168	17.6	163	772.9	122	68.2	75	92.7	211	151.5	212
1056	Oshikango	53.1	216	8.3	187	831.7	107	64.9	144	88.5	218	113.6	223
1057	Oshikango	79.1	187	10.2	180	1521.3	34	69.3	62	99.9	17	245.5	80
1058	Oshikango	44.7	221	63.3	77	666.2	149	69.2	63	95.3	196	185.0	189
1059	Oshikango	91.6	142	54.6	94	1598.6	29	66.2	115	83.6	226	228.6	113
1060	Oshikango	96.7	83	47.5	107	846.5	104	59.1	207	93.6	203	193.2	178
1061	Oshikango	70.7	198	51.7	102	681.3	145	66.0	118	99.6	101	197.0	170
1062	Oshikango	87.3	166	7.4	190	1595.3	30	68.2	76	99.9	8	252.1	69
1063	Oshikango	96.2	93	41.6	118	798.7	117	55.6	224	97.6	165	188.4	186
1064	Oshikango	89.0	160	11.4	176	1382.4	47	61.1	186	99.2	112	189.5	182
1065	Oshikango	89.4	155	43.1	115	324.3	208	63.9	159	99.9	14	208.0	147
1066	Oshikango	63.3	207	58.1	85	1167.1	67	68.1	79	99.1	113	233.1	101
1067	Oshikango	89.3	157	77.7	35	805.9	115	65.1	140	98.4	143	237.8	89
1068	Oshikango	98.4	51	24.8	149	1613.7	27	65.9	122	98.9	129	248.2	76
1069	Oshikango	98.8	38	74.8	43	3832.6	3	57.1	216	99.8	93	325.1	7
1070	Oshikango	91.6	141	84.6	18	698.1	143	69.9	49	97.9	154	255.2	66
1071	Oshikango	92.9	132	34.7	129	1150.9	70	66.7	102	99.8	83	235.1	97
1072	Oshikango	87.7	163	56.8	89	1497.8	36	65.7	126	99.9	5	299.6	19
1073	Oshikango	71.0	197	31.7	133	568.1	171	65.7	127	97.7	164	144.5	215
1074	Omulonga	35.6	226	76.8	38	1554.6	33	63.6	161	88.0	220	215.8	133
1075	Omulonga	95.1	109	86.6	10	727.7	133	57.4	214	98.8	131	244.6	82
1076	Omulonga	99.0	33	62.9	79	700.0	141	72.7	12	98.0	149	276.3	41
1077	Omulonga	89.8	152	54.7	93	1038.4	86	70.1	42	99.9	26	287.0	29
1078	Omulonga	81.1	180	25.5	148	415.2	192	68.5	72	96.9	179	142.0	217
1079	Omulonga	98.3	53	83.1	22	812.1	111	66.3	110	99.8	85	298.3	21
1080	Omulonga	99.9	6	89.2	6	1414.9	41	66.2	114	99.1	118	348.6	3
1081	Omulonga	93.0	130	57.1	87	572.6	169	66.8	101	98.9	127	213.9	138
1082	Omulonga	95.9	97	78.3	34	1146.2	72	61.9	177	99.8	88	285.3	32
1083	Omulonga	81.8	177	85.5	12	1786.7	16	64.0	157	99.3	108	287.5	28
1084	Omulonga	97.9	60	84.1	19	791.0	121	56.0	220	99.9	47	289.8	24

1085	Omulonga	99.5	25	89.7	3	1414.2	42	69.9	52	99.7	99	358.4	1
1086	Omulonga	91.7	140	69.9	60	631.6	156	65.1	141	99.6	100	234.1	98
1087	Omulonga	28.5	228	73.4	50	1386.4	45	71.2	30	99.9	18	299.6	18
1088	Omulonga	52.6	217	73.0	51	1209.6	62	74.0	5	99.0	125	270.3	51
1089	Omulonga	73.2	193	44.9	112	457.9	185	72.1	17	97.5	168	180.3	193
1090	Omulonga	81.8	178	27.9	142	926.3	95	68.0	81	97.4	169	177.4	195
1091	Omulonga	97.8	65	82.5	24	1480.0	38	62.7	169	99.6	102	309.2	12
1092	Omulonga	82.9	175	77.1	36	827.3	108	68.8	70	99.9	57	273.9	47
1093	Omulonga	92.8	134	83.2	21	812.7	110	78.9	1	99.9	23	349.9	2
1094	Omulonga	98.3	52	53.7	96	1385.4	46	72.1	18	99.9	38	330.8	6
1095	Omulonga	2.3	233	70.4	58	680.6	146	67.1	96	99.9	76	210.0	146
1096	Omulonga	79.3	186	51.4	103	956.4	91	68.2	77	97.2	174	207.0	150
1097	Omulonga	85.5	172	36.0	127	1565.3	32	70.0	48	98.3	145	231.9	104
1098	Omulonga	66.4	202	76.3	40	700.6	140	61.3	185	96.5	181	194.1	177
1099	Omulonga	99.5	24	34.9	128	589.4	166	68.9	66	97.3	171	221.8	123
1100	Omulonga	91.5	143	52.4	99	365.6	199	67.2	94	99.9	25	233.5	100
1101	Omulonga	95.8	100	23.9	153	714.8	136	72.4	15	97.5	167	199.9	165
1102	Omulonga	92.0	138	57.8	86	1704.1	20	69.9	50	99.9	54	305.5	14
1103	Omulonga	66.2	203	13.6	172	434.9	189	67.7	87	99.9	45	163.1	208
1104	Omulonga	58.2	214	83.0	23	1068.1	80	67.3	92	97.9	155	241.1	84
1105	Omulonga	95.9	98	62.4	80	648.0	152	63.4	165	99.8	90	237.0	90
1106	Omulonga	97.8	64	29.8	138	1231.9	58	70.6	36	99.9	31	287.8	27
1107	Omulonga	97.9	62	85.4	13	1941.4	12	63.6	162	99.1	117	320.5	9
1042	Ongenga	92.9	133	65.2	74	616.8	160	61.4	184	98.1	146	98.3	227
1043	Ongenga	89.2	159	76.2	41	1278.4	53	59.6	202	95.6	191	132.2	218
1044	Ongenga	94.3	120	54.0	95	327.6	206	69.1	64	86.8	223	206.7	152
1045	Ongenga	94.9	113	82.3	25	1367.6	48	59.5	203	95.5	193	200.2	164
1046	Ongenga	96.6	85	72.6	53	2026.4	9	55.1	227	95.8	189	211.5	143
1047	Ongenga	95.7	102	89.0	7	720.6	134	64.4	152	99.1	122	200.6	163
1048	Ongenga	97.7	68	68.8	64	1061.7	81	64.2	154	99.1	119	206.6	153
1049	Ongenga	94.2	121	76.7	39	1604.6	28	67.4	90	98.0	148	229.5	111

1050	Ongenga	76.9	190	69.4	62	1640.5	25	71.5	26	91.8	213	247.4	77
1051	Oshikango	60.1	212	63.8	76	1263.5	54	67.9	83	92.9	210	280.5	37
1052	Oshikango	89.8	154	60.0	83	442.8	186	65.3	139	99.1	114	235.4	95
1053	Oshikango	98.8	39	67.8	69	1393.1	44	62.3	174	99.9	49	145.6	214
1054	Oshikango	68.8	201	33.9	130	640.8	155	55.8	221	82.6	227	186.2	188
1055	Oshikango	86.4	168	17.6	163	772.9	122	71.0	34	92.7	211	262.4	58
1056	Oshikango	53.1	216	8.3	187	831.7	107	59.2	206	88.5	218	188.1	187
1057	Oshikango	79.1	187	10.2	180	1521.3	34	64.4	151	99.9	17	278.6	38
1058	Oshikango	44.7	221	63.3	77	666.2	149	70.4	38	95.3	196	230.2	110
1059	Oshikango	91.6	142	54.6	94	1598.6	29	65.6	128	83.6	226	90.2	229
1060	Oshikango	96.7	83	47.5	107	846.5	104	44.5	233	93.6	203	56.6	232
1061	Oshikango	70.7	198	51.7	102	681.3	145	60.6	191	99.6	101	168.7	204
1062	Oshikango	87.3	166	7.4	190	1595.3	30	69.9	53	99.9	8	281.2	36
1063	Oshikango	96.2	93	41.6	118	798.7	117	65.4	133	97.6	165	250.4	72
1064	Oshikango	89.0	160	11.4	176	1382.4	47	69.6	54	99.2	112	289.9	23
1065	Oshikango	89.4	155	43.1	115	324.3	208	67.9	85	99.9	14	285.0	33
1066	Oshikango	63.3	207	58.1	85	1167.1	67	62.5	172	99.1	113	211.9	142
1067	Oshikango	89.3	157	77.7	35	805.9	115	66.5	107	98.4	143	246.3	79
1068	Oshikango	98.4	51	24.8	149	1613.7	27	58.7	209	98.9	129	204.9	155
1069	Oshikango	98.8	38	74.8	43	3832.6	3	70.3	41	99.8	93	317.4	10
1070	Oshikango	91.6	141	84.6	18	698.1	143	69.4	60	97.9	154	286.6	30
1071	Oshikango	92.9	132	34.7	129	1150.9	70	49.2	230	99.8	83	188.7	183
1072	Oshikango	87.7	163	56.8	89	1497.8	36	56.6	218	99.9	5	237.9	88
1073	Oshikango	71.0	197	31.7	133	568.1	171	65.3	137	97.7	164	274.4	44
1074	Omulonga	35.6	226	76.8	38	1554.6	33	66.7	103	88.0	220	307.5	13
1075	Omulonga	95.1	109	86.6	10	727.7	133	58.4	211	98.8	131	175.0	198
1076	Omulonga	99.0	33	62.9	79	700.0	141	62.1	175	98.0	149	252.6	68
1077	Omulonga	89.8	152	54.7	93	1038.4	86	61.6	181	99.9	26	268.8	52
1078	Omulonga	81.1	180	25.5	148	415.2	192	60.4	195	96.9	179	216.1	131
1079	Omulonga	98.3	53	83.1	22	812.1	111	55.8	223	99.8	85	203.1	159
1080	Omulonga	99.9	6	89.2	6	1414.9	41	60.3	198	99.1	118	207.0	149

1081	Omulonga	93.0	130	57.1	87	572.6	169	54.4	228	98.9	127	230.4	109
1082	Omulonga	95.9	97	78.3	34	1146.2	72	65.4	132	99.8	88	260.5	60
1083	Omulonga	81.8	177	85.5	12	1786.7	16	65.3	135	99.3	108	231.5	105
1084	Omulonga	97.9	60	84.1	19	791.0	121	65.4	131	99.9	47	266.9	55
1085	Omulonga	99.5	25	89.7	3	1414.2	42	67.5	89	99.7	99	177.3	196
1086	Omulonga	91.7	140	69.9	60	631.6	156	69.4	58	99.6	100	270.9	50
1087	Omulonga	28.5	228	73.4	50	1386.4	45	67.2	95	99.9	18	250.7	71
1088	Omulonga	52.6	217	73.0	51	1209.6	62	64.1	155	99.0	125	59.5	231
1089	Omulonga	73.2	193	44.9	112	457.9	185	68.7	71	97.5	168	277.6	39
1090	Omulonga	81.8	178	27.9	142	926.3	95	66.2	112	97.4	169	203.0	160
1091	Omulonga	97.8	65	82.5	24	1480.0	38	69.5	56	99.6	102	261.5	59
1092	Omulonga	82.9	175	77.1	36	827.3	108	64.9	145	99.9	57	214.4	136
1093	Omulonga	92.8	134	83.2	21	812.7	110	65.3	134	99.9	23	125.6	221
1094	Omulonga	98.3	52	53.7	96	1385.4	46	61.8	179	99.9	38	127.1	220
1095	Omulonga	2.3	233	70.4	58	680.6	146	60.6	190	99.9	76	165.7	206
1096	Omulonga	79.3	186	51.4	103	956.4	91	65.8	125	97.2	174	85.7	230
1097	Omulonga	85.5	172	36.0	127	1565.3	32	66.6	106	98.3	145	190.9	180
1098	Omulonga	66.4	202	76.3	40	700.6	140	64.7	148	96.5	181	196.3	173
1099	Omulonga	99.5	24	34.9	128	589.4	166	56.7	217	97.3	171	55.4	233
1100	Omulonga	91.5	143	52.4	99	365.6	199	65.8	123	99.9	25	175.3	197
1101	Omulonga	95.8	100	23.9	153	714.8	136	65.0	143	97.5	167	299.2	20
1102	Omulonga	92.0	138	57.8	86	1704.1	20	71.5	28	99.9	54	204.1	157
1103	Omulonga	66.2	203	13.6	172	434.9	189	68.1	80	99.9	45	247.0	78
1104	Omulonga	58.2	214	83.0	23	1068.1	80	71.5	27	97.9	155	195.4	175
1105	Omulonga	95.9	98	62.4	80	648.0	152	61.6	180	99.8	90	256.0	64
1106	Omulonga	97.8	64	29.8	138	1231.9	58	66.7	104	99.9	31	170.2	202
1107	Omulonga	97.9	62	85.4	13	1941.4	12	68.8	69	99.1	117	229.1	112
1042	Ongenga	92.9	133	65.2	74	616.8	160	61.0	187	98.1	146	198.1	169
1043	Ongenga	89.2	159	76.2	41	1278.4	53	71.6	24	95.6	191	310.1	11
1044	Ongenga	94.3	120	54.0	95	327.6	206	59.8	201	86.8	223	161.7	209
1045	Ongenga	94.9	113	82.3	25	1367.6	48	70.1	45	95.5	193	293.7	22

1046	Ongenga	96.6	85	72.6	53	2026.4	9	70.3	39	95.8	189	272.6	49
1047	Ongenga	95.7	102	89.0	7	720.6	134	70.3	40	99.1	122	266.8	56
1048	Ongenga	97.7	68	68.8	64	1061.7	81	72.9	10	99.1	119	203.2	158
1049	Ongenga	94.2	121	76.7	39	1604.6	28	70.1	43	98.0	148	230.7	107
1050	Ongenga	76.9	190	69.4	62	1640.5	25	71.5	29	91.8	213	230.7	108
1051	Oshikango	60.1	212	63.8	76	1263.5	54	62.8	167	92.9	210	196.6	171
1052	Oshikango	89.8	154	60.0	83	442.8	186	67.4	91	99.1	114	224.8	119
1053	Oshikango	98.8	39	67.8	69	1393.1	44	69.5	57	99.9	49	220.4	124
1054	Oshikango	68.8	201	33.9	130	640.8	155	69.5	55	82.6	227	216.9	129
1055	Oshikango	86.4	168	17.6	163	772.9	122	69.9	51	92.7	211	304.1	15
1056	Oshikango	53.1	216	8.3	187	831.7	107	60.5	193	88.5	218	169.3	203
1057	Oshikango	79.1	187	10.2	180	1521.3	34	68.4	74	99.9	17	240.7	85
1058	Oshikango	44.7	221	63.3	77	666.2	149	60.7	189	95.3	196	206.7	151
1059	Oshikango	91.6	142	54.6	94	1598.6	29	55.8	222	83.6	226	217.8	128
1060	Oshikango	96.7	83	47.5	107	846.5	104	59.9	200	93.6	203	104.0	225
1061	Oshikango	70.7	198	51.7	102	681.3	145	68.1	78	99.6	101	106.6	224
1062	Oshikango	87.3	166	7.4	190	1595.3	30	63.5	164	99.9	8	163.4	207
1063	Oshikango	96.2	93	41.6	118	798.7	117	76.9	3	97.6	165	321.3	8
1064	Oshikango	89.0	160	11.4	176	1382.4	47	60.0	199	99.2	112	171.6	201
1065	Oshikango	89.4	155	43.1	115	324.3	208	67.8	86	99.9	14	195.4	176
1066	Oshikango	63.3	207	58.1	85	1167.1	67	62.8	168	99.1	113	248.6	75
1067	Oshikango	89.3	157	77.7	35	805.9	115	58.9	208	98.4	143	214.9	134
1068	Oshikango	98.4	51	24.8	149	1613.7	27	63.0	166	98.9	129	188.6	184
1069	Oshikango	98.8	38	74.8	43	3832.6	3	57.3	215	99.8	93	236.1	93
1070	Oshikango	91.6	141	84.6	18	698.1	143	69.3	61	97.9	154	213.2	141
1071	Oshikango	92.9	132	34.7	129	1150.9	70	67.0	97	99.8	83	199.8	166
1072	Oshikango	87.7	163	56.8	89	1497.8	36	71.7	22	99.9	5	214.5	135
1073	Oshikango	71.0	197	31.7	133	568.1	171	71.0	35	97.7	164	248.7	74
1074	Omulonga	35.6	226	76.8	38	1554.6	33	60.8	188	88.0	220	183.6	192
1075	Omulonga	95.1	109	86.6	10	727.7	133	64.3	153	98.8	131	90.4	228
1076	Omulonga	99.0	33	62.9	79	700.0	141	62.6	171	98.0	149	288.4	26

1077	Omulonga	89.8	152	54.7	93	1038.4	86	72.0	19	99.9	26	301.4	17
1078	Omulonga	81.1	180	25.5	148	415.2	192	70.1	47	96.9	179	160.7	210
1079	Omulonga	98.3	53	83.1	22	812.1	111	57.8	213	99.8	85	142.5	216
1080	Omulonga	99.9	6	89.2	6	1414.9	41	66.0	119	99.1	118	101.8	226
1081	Omulonga	93.0	130	57.1	87	572.6	169	65.0	142	98.9	127	148.3	213
1082	Omulonga	95.9	97	78.3	34	1146.2	72	69.4	59	99.8	88	236.2	91
1083	Omulonga	81.8	177	85.5	12	1786.7	16	70.1	44	99.3	108	219.1	127
1084	Omulonga	97.9	60	84.1	19	791.0	121	64.8	146	99.9	47	275.0	43
1085	Omulonga	99.5	25	89.7	3	1414.2	42	71.6	23	99.7	99	210.7	144
1086	Omulonga	91.7	140	69.9	60	631.6	156	67.2	93	99.6	100	232.3	103
1087	Omulonga	28.5	228	73.4	50	1386.4	45	48.6	231	99.9	18	201.1	162
1088	Omulonga	52.6	217	73.0	51	1209.6	62	61.9	176	99.0	125	230.9	106
1089	Omulonga	73.2	193	44.9	112	457.9	185	72.6	13	97.5	168	244.7	81
1090	Omulonga	81.8	178	27.9	142	926.3	95	62.3	173	97.4	169	210.6	145
1091	Omulonga	97.8	65	82.5	24	1480.0	38	72.9	11	99.6	102	199.4	167
1092	Omulonga	82.9	175	77.1	36	827.3	108	72.4	14	99.9	57	188.5	185
1093	Omulonga	92.8	134	83.2	21	812.7	110	65.9	121	99.9	23	165.9	205
1094	Omulonga	98.3	52	53.7	96	1385.4	46	78.6	2	99.9	38	303.0	16
1095	Omulonga	2.3	233	70.4	58	680.6	146	71.9	20	99.9	76	228.1	115
1096	Omulonga	79.3	186	51.4	103	956.4	91	67.6	88	97.2	174	236.1	92
1097	Omulonga	85.5	172	36.0	127	1565.3	32	64.6	149	98.3	145	232.7	102
1098	Omulonga	66.4	202	76.3	40	700.6	140	66.3	108	96.5	181	207.6	148
1099	Omulonga	99.5	24	34.9	128	589.4	166	65.5	130	97.3	171	173.4	199
1100	Omulonga	91.5	143	52.4	99	365.6	199	58.3	212	99.9	25	184.1	191
1101	Omulonga	95.8	100	23.9	153	714.8	136	66.3	109	97.5	167	184.3	190
1102	Omulonga	92.0	138	57.8	86	1704.1	20	46.8	232	99.9	54	258.7	61
1103	Omulonga	66.2	203	13.6	172	434.9	189	66.1	117	99.9	45	334.1	5
1104	Omulonga	58.2	214	83.0	23	1068.1	80	63.5	163	97.9	155	173.2	200
1105	Omulonga	95.9	98	62.4	80	648.0	152	66.9	99	99.8	90	227.5	117
1106	Omulonga	97.8	64	29.8	138	1231.9	58	70.1	46	99.9	31	215.8	132
1107	Omulonga	97.9	62	85.4	13	1941.4	12	67.0	98	99.1	117	235.2	96

REFERENCES

- Avenell, D., Noble, M. and Wright, G. (2009) 'South African datazones: A technical report about the development of a new statistical geography for the analysis of deprivation in South Africa at a small area level', CASASP Working Paper No. 8, Oxford: Centre for the Analysis of South African Social Policy, University of Oxford.
- Barnes, H., Noble, M., Wright, G. and Dawes, A. (2009) 'A geographical profile of child deprivation in South Africa', *Child Indicators Research*, 2(2): 181-199.
- Barnes, H., Wright, G., Noble, M. and Dawes, A. (2007) *The South African Index of Multiple Deprivation for Children 2001*, Cape Town: Human Sciences Research Council Press.
- Beatty, C., Fothergill, S. and Macmillan, R. (2000) 'A theory of employment, unemployment and sickness', *Regional Studies* 34(7), 617-630.
- Bhorat, H., Poswell, L. and Naidoo, P. (2004) *Dimensions of Poverty in Post-Apartheid South Africa*, Cape Town: Development Policy Research Unit, University of Cape Town.
- Blane, D. and Drever, F. (1998) 'Inequality among men in standardised years of potential life lost, 1970-93', *British Medical Journal*, 317: 255-256
- Central Bureau of Statistics (2008) *A Review of Poverty and Inequality in Namibia*, Windhoek: Central Bureau of Statistics, National Planning Commission.
- Hussmanns, R. (2007) *Measurement of Employment, Unemployment and Underemployment – Current International Standards and Issues in their Application*, International Labour Organisation, United Nations.
- Martin, D., Nolan, A. and Tranmer, N. (2001) 'The application of zone-design methodology in the 2001 UK Census', *Environment and Planning*, 33: 1949-1962.
- McLennan, D., Barnes, H., Noble, M., Davies, J., Garratt, E. and Dibben, C. (2011) *The English Indices of Deprivation 2010*, London: Department for Communities and Local Government.
- Noble, M., Babita, M., Barnes, H., Dibben, C., Magasela, W., Noble, S., Ntshongwana, P., Phillips, H., Rama, S., Roberts, B., Wright, G. and Zungu, S. (2006a) *The Provincial Indices of Multiple Deprivation for South Africa 2001*, Oxford: University of Oxford, UK.
- Noble, M., Barnes, H., Wright, G., McLennan, D., Avenell, D., Whitworth, A. and Roberts, B. (2009a) *The South African Index of Multiple Deprivation 2001 at Datazone Level*, Pretoria: Department of Social Development.
- Noble, M., Barnes, H., Wright, G. and Roberts, B. (2009b) 'Small area indices of multiple deprivation in South Africa', *Social Indicators Research*, 95(2): 281-297.

- Noble, M., McLennan, D., Wilkinson, K., Whitworth, A., Barnes, H. and Dibben, C. (2008) *The English Indices of Deprivation 2007*, London: Department for Communities and Local Government.
- Noble, M., Smith, G.A.N., Wright, G., Dibben, C. and Lloyd, M. (2001) *The Northern Ireland Multiple Deprivation Measure 2001*, Occasional Paper No 18, Belfast: Northern Ireland Statistics and Research Agency.
- Noble, M., Smith, G.A.N., Wright, G., Dibben, C., Lloyd, M. and Penhale, B. (2000) *Welsh Index of Multiple Deprivation 2000*, National Assembly for Wales.
- Noble, M., Whitworth, A., Allen, J., Wright, G. and Roberts, B. (2007) *Developing Small Area Indices of Multiple Deprivation in Southern Africa: A Scoping Study*. Report for the Southern Africa Trust.
- Noble, M., Wright, G., Lloyd, M., Dibben, C., Smith, G.A.N. and Ratcliffe, A. (2003) *Scottish Indices of Deprivation 2003*, Edinburgh: Scottish Executive.
- Noble, M., Wright, G., Smith, G.A.N. and Dibben, C. (2006b) 'Measuring multiple deprivation at the small-area level', *Environment and Planning A*, 38(1): 169-185.
- Nolan, B. and Whelan, C.T. (1996) *Resources, Deprivation, and Poverty*, Oxford: Oxford University Press.
- Townsend, P. (1987) 'Deprivation', *Journal of Social Policy*, 16: 125-145.
- Townsend, P. (1979) *Poverty in the United Kingdom: A Survey of Household Resources and Standards of Living*, Harmondsworth, Middlesex: Allen Lane and Penguin Books.
- United Nations Development Programme (2009) *Human Development Report 2009 - Overcoming Barriers: Human Mobility and Development*, New York: Palgrave Macmillan.
- United Nations Development Programme Namibia (2007) *UNDP Namibia Economic Review 2007*, Windhoek: UNDP Namibia.
- Wright, G., Barnes, H., Noble, M. and Dawes, A. (2009a) *The South African Index of Multiple Deprivation for Children 2001 at Datazone Level*, Pretoria: Department of Social Development.
- Wright, G. and Noble, M. (2009) *The South African Index of Multiple Deprivation 2007 at Municipality Level*, Pretoria: Department of Social Development.
- Wright, G., Noble, M., Barnes, H. and Noble, S. (2009b) *The South African Index of Multiple Deprivation for Children 2007 at Municipality Level*, Pretoria: Department of Social Development.

