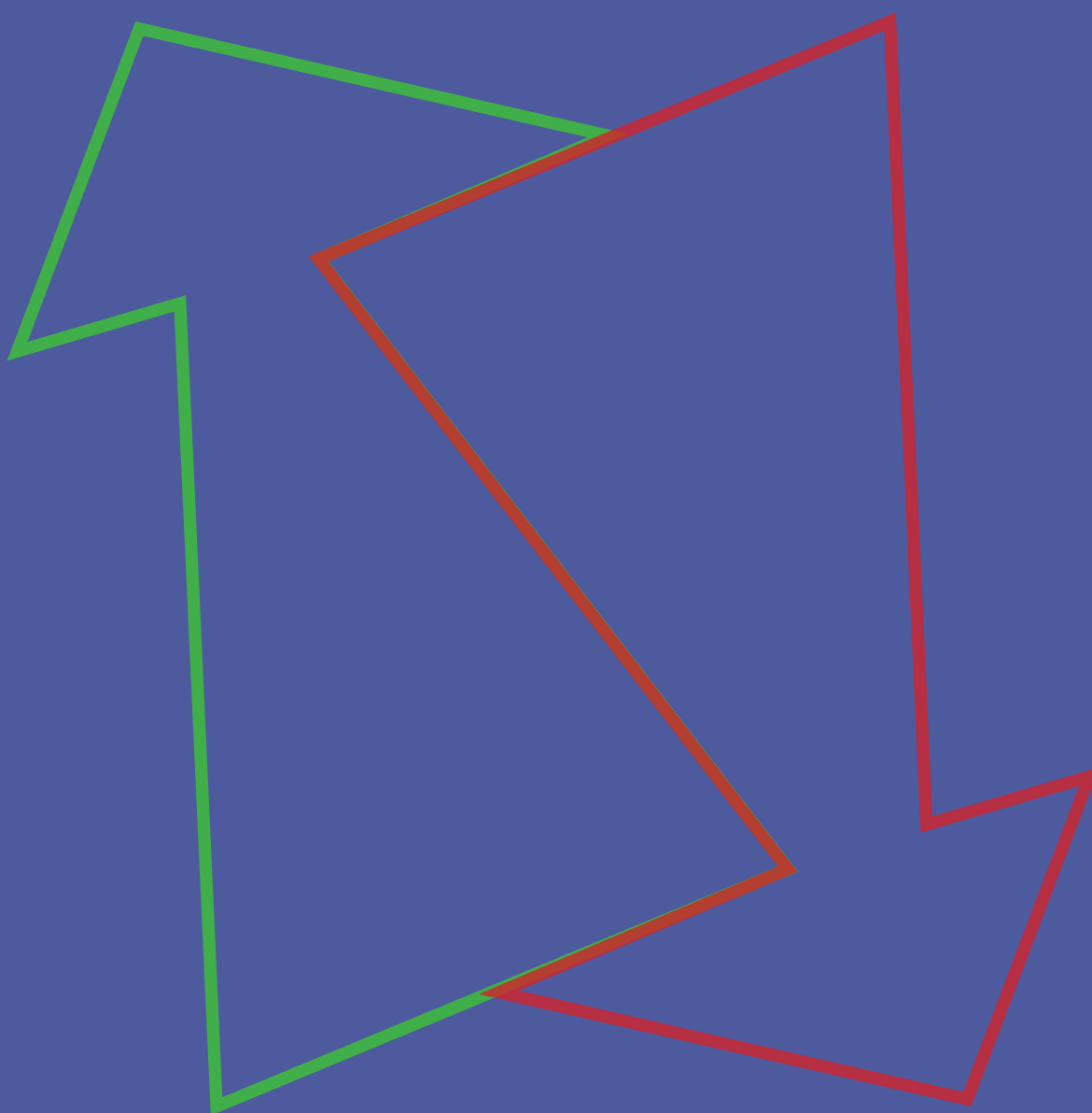


Trends in Human Development and Human Poverty in Namibia

Background paper to the Namibia Human Development Report

OCTOBER 2007



United Nations Development Programme

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Summary

This paper uses a capability approach to analyse current levels and recent trends in socio-economic development and poverty in Namibia. Based on official national data sources—some specially adjusted for this analysis by the Central Bureau of Statistics—the Human Development Index (HDI) and Human Poverty Index (HPI) for Namibia are computed and analysed. A central finding is that contrary to the objectives of Vision 2030, human development in Namibia appears to be on a long-term decline. The HDI is being pulled down by a fall in life expectancy that is only partially offset by improvements in household income and educational attainment; the other two dimensions of human development included in the index. The principal reason for the reduction in life expectancy is the increased mortality caused by the HIV/AIDS epidemic. The analysis also reveals great inequalities in human development between different administrative regions of Namibia and between the country's main language groups. Similarly, by broadening the definition of poverty to focus on deprivation in a range of essential capabilities, the level of human poverty in Namibia is found to be slightly higher than what is suggested by official income poverty measures. Moreover, income poverty appears to be decreasing while human poverty is increasing over time. Again it is the HIV/AIDS epidemic, through its negative impact on survival, which is propelling a long-term deterioration in human poverty. Additional analysis suggests that when using population size and HDI as allocation criteria the administrative regions with the greatest needs are under-prioritised in the development budget.

Author details: Sebastian Levine. UNDP Namibia, 154 Independence Avenue, Windhoek, Namibia.
Phone: +264 (61) 204 6111. E-mail: sebastian.levine@undp.org.

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Views expressed in this paper are those of the author and do not necessarily represent UNDP or UNDP policy.

Vision 2030 is expected to reduce inequalities and move the nation significantly up the scale of human development, to be ranked high among the developed countries in the world.

Office of the President (2004: 10)

1. Introduction

Human development is about people and about the choices people have to lead their lives in ways that they have reason to value. Following the pioneering work of Amartya Sen, enlarging these choices is fundamental to building human capabilities to achieve the range of things that people can do or be in life (Sen 1985, 1997, 1999). The most basic capabilities of human development allow people to lead long and healthy lives, to be knowledgeable, to have access to the resources needed for a decent standard of living and to be able to participate in the life of the community. Without these, many choices are simply not available and many of life's opportunities remain out of reach. It follows that if people are at the centre, and if expanding the capabilities of individuals is the ultimate end of development, then human poverty must be defined and measured to reflect the deprivation of capabilities. Therefore assessing progress towards human development and human poverty, using a capability approach, requires a broader set of measures than what is offered through the traditional focus solely on economic aggregates such as GDP and average incomes.

A key objective of this paper is to present the standard methodology established by UNDP for measuring human development and human poverty (see for instance Anand and Sen 1994; Ul Haq 1995; UNDP 1990, 1997, 2006) on global, regional and national levels. Moreover, through the use of a range of national data sources—specially adjusted for this analysis—the two main composite indices, the Human Development Index (HDI) and the Human Poverty Index (HPI) are computed and analysed.

There are at least three broad purposes for this type of analysis:

- 1) To capture the attention of policy makers, media and civil society organisations in general, and in particular those stakeholders involved in implementing Vision 2030 and preparing the next National Development Plan. National strategies typically include human development in their overarching objectives and the HDI and HPI can help quantify targets and measure progress.
- 2) To highlight differences in capabilities and deprivations within Namibia between regions and communities, across gender, ethnicity, and other socioeconomic groupings, in order to facilitate the targeting of policies and interventions to achieve the greatest possible impact.
- 3) To facilitate international comparisons and the exploration of why human development and poverty in some countries, including Namibia, is deteriorating while other countries are making progress. Such analysis should stimulate debate on government policies in a range of areas and galvanise action at all levels of society.

It should be noted that human development is much broader and more complex than what can possibly be captured in an index such as the HDI, or any other of the single measure for that matter. The index, for example, does not reflect important capabilities related to

political participation, citizenship and individual agency, which are considered both considered intrinsic to and instrumental in contributing to human development (Ul Haq 1995; Sen 1999). Moreover, many other indicators, not included in the composite indices explored in this paper, could and should be drawn upon to complement the description and analysis of the capabilities and deprivations of Namibians. A much fuller analysis is thus provided in the Namibia Human Development Report (NHDR) to which this paper serves as an analytical contribution. It is also in the NHDR where a comprehensive set of policy recommendations will be made whereas the focus of this paper is more narrowly on the quantification and measurement of human development and human poverty.

The paper is organised as follows. In Sections 2 and 3 the methodology for computing the HDI and the HPI, respectively, are presented along with the data required for the analysis. In Section 4 and 5 the results of each index are discussed, with a particular emphasis on the impact of the HIV/AIDS epidemic, and comparisons are made over time to explore trends in human development and human poverty. Moreover, the indices are disaggregated to highlight differences between the different geographical regions of Namibia, between male and female headed households, and the different linguistic groups in the country. In Section 6 the HDI is used to analyse the relationship between the needs in the 13 administrative regions of Namibia and allocations in the national development budget. In Section 7, key issues around the data sources are discussed before Section 8 concludes.

2. The Human Development Index

The HDI was born during the preparation of the first global Human Development Report nearly two decades ago. The basic idea was to measure at least a few more choices besides income, which had been the traditional yardstick of development, and to reflect them in a methodologically sound composite index. Also, the index was to include only a limited number of variables to keep it simple and manageable (Ul Haq 1995). The HDI and HPI are updated every year in the global Human Development Reports. National indices are computed separately in most developing countries including Namibia since the first Namibia Human Development Report in 1996 (UNDP 1996).¹

Table 1: Dimensions of the HDI

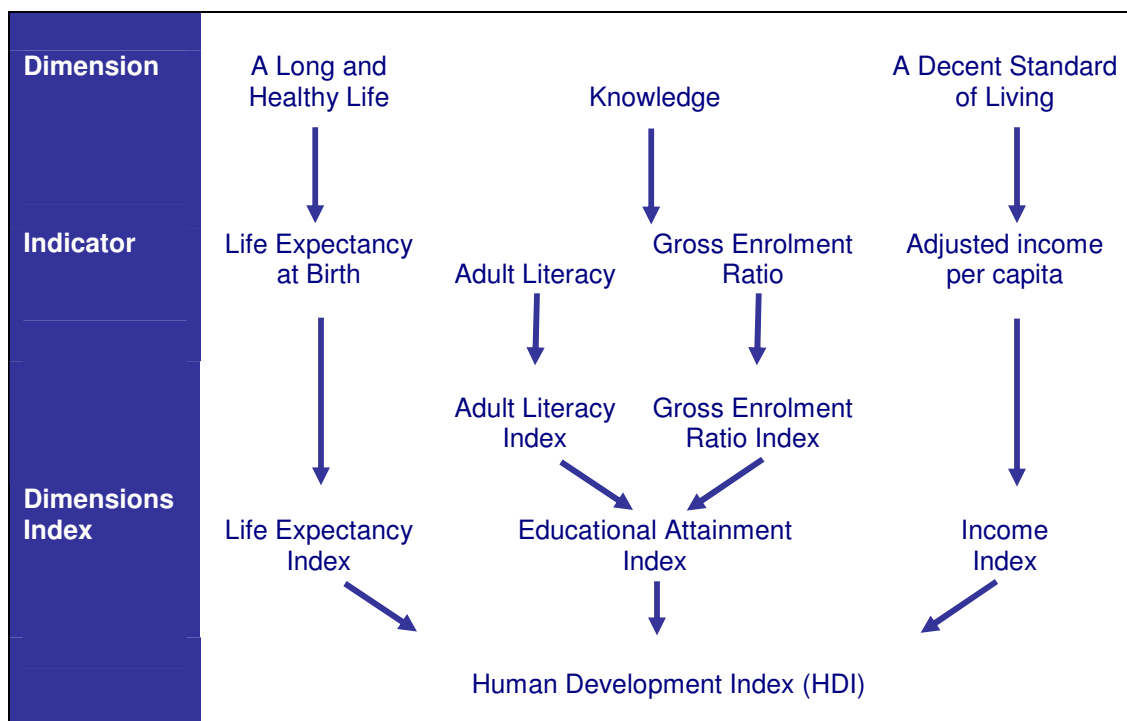
	Human Development Dimension	Quantitative Indicator	Corresponding Index
1.	A long and healthy life	Life expectancy at birth (years)	Life Expectancy Index
2.	To be knowledgeable	Weighted average of the literacy rate (adults over 15 years) and gross enrolment ratio (6-24 years) (percentages)	Educational Attainment Index
3.	Decent standard of living	Adjusted per capita income (N\$)	Income Index

¹ For more on measuring human development on country level see: hdr.undp.org/workshop/primer.cfm

The HDI seeks to provide a quantitative representation of three main dimensions of human development: a long and healthy life, knowledge and a decent standard of living. The fourth dimension—to be able to participate in the life of the community—is left out of the computation simply because it has proved overly difficult to quantify. However, it should be included in a supplementary analysis as is done in the forthcoming NHDR. Following global practices in measuring human development and basing the calculations to the greatest extent possible on information from the national statistical system in Namibia; each of these dimensions has been assigned corresponding quantitative indicators as outlined in Table 1.

The HDI is then the simple average of the three indices. The equal weighting of the three dimensions in the HDI reflects a fundamental belief that each is equally important. The steps followed to get to the HDI are illustrated in Figure 1.

Figure 1: Steps to derive the HDI



Before the HDI itself is calculated, however, an index is created for each of the three dimensions. This procedure converts different unit values (years, percentage and N\$) into one common one. In order to calculate these indices, first minimum and maximum values (goalposts) need to be selected for each of the underlying indicator in order to reflect the range of development outcomes that are relevant to the national set of circumstances.

For the purposes of this analysis, life expectancy is set to range from 35 to 69 years. These values represent the ‘worst case’ scenario and the desired long-term target, respectively as per Vision 2030 (Office of the President 2004). The educational attainment indicators are set to range from 0 to 100, again as per the goals of Vision 2030. Finally, the adjusted per capita income are set to range from N\$1400, which is the approximate annual value in 2004 prices of a food poverty line (Van Rooy et al 2006), and N\$ 90000, which is the level recorded in

2003/2004 for the wealthiest sub-group, German-speaking households (CBS 2006b). An overview of the goalposts used for the indicators in the Namibia HDI is provided in Table 2.

Table 2: Goal posts for the Namibia HDI

Indicator	Minimum Value (<i>MinF</i>)	Maximum Value (<i>MaxF</i>)
Life expectancy	35 years	69 years
Adult literacy	0%	100%
Gross Enrolment	0%	100%
Adjusted income per capita	N\$1,400	N\$90,000

Performance in each dimension is then expressed as a value that ranges between 0 and 1 by applying the following general formula:

$$HDI = (1/k) \sum_{j=1}^k ((X_j \div MinF_j) / (MaxF_j \div MinF_j))$$

Here X represents the indicator for the human development dimension of which there are k number of and $MinF$ and $MaxF$ represent the goal posts.

Values for the indicators needed to calculate the HDI for Namibia are provided in Table 3. The table shows that between the two broad periods of time from 1991-1994 to 2001-2004 there the real average incomes of Namibians have improved from N\$5448 to N\$10358 (the former adjusted for inflation). Moreover, the adult literacy rate has increased from 76 percent to 84 percent while the gross enrolment ratio has remained more or less unchanged. However, when it comes to average life expectancy there has been a marked decrease over the period from 61 to 49 years.

The disaggregated data reveals significant differences in both levels and trends between the different regions of Namibia and between females and males. For instance, Caprivi and Ohangwena have the lowest level of life expectancy and only in two regions, Omaheke and Otjozondjupa, is life expectancy not falling. In the Kunene region adult literacy has improved but is still more than one third less than the level in the Khomas region. The average annual income for male-headed households is almost 50 percent higher than for female-headed households.

Section 7 below discusses timeliness, quality and availability of socio-economic data in Namibia, as well as issues related to the specific data sources.

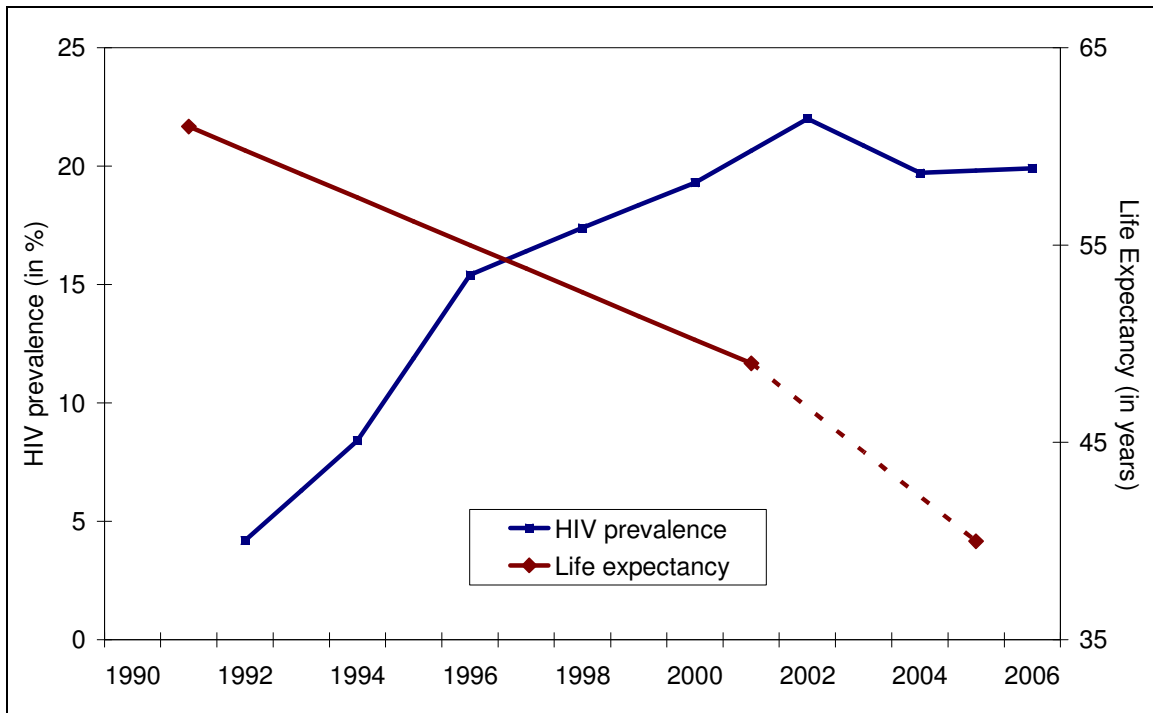
Table 3: HDI indicators for Namibia

	Life expectancy at birth (years)		Literacy rate, +15 years (%)		Gross enrolment ratio, 6-24 years (%)		Annual average adjusted per capita income (N\$)	
	2001	1991	2001	1991	2001	1991	2003/2004	1993/1994
Namibia	49	61	84	76	66	68	10,358	5,448
Urban	54	64	94	90	60	63	17,898	11,553
Rural	46	60	78	69	68	70	6,139	2,831
Caprivi	41	53	80	66	60	66	6,411	2,413
Erongo	59	65	94	85	58	63	16,819	8,189
Hardap	50	60	86	79	60	63	12,092	8,977
Karas	57	60	92	88	58	59	12,706	10,049
Kavango	44	57	72	62	63	66	4,427	2,662
Khomas	58	68	96	91	59	57	25,427	17,152
Kunene	55	63	59	51	45	50	7,240	3,327
Ohangwena	41	63	80	71	72	74	4,304	1,616
Omaheke	60	59	67	57	56	51	12,232	5,955
Omusati	45	65	84	78	77	84	5,466	2,193
Oshana	46	62	91	86	75	77	9,963	2,902
Oshikoto	46	61	84	78	71	71	5,895	2,537
Otjozondjupa	61	61	75	66	56	52	9,457	5,525
Male	47	59	85	78	65	67	12,248	6,726
Female	51	63	82	74	66	67	7,528	3,304

Note: Data sources are presented and discussed in full in Section 7.

Figure 2 shows the rapid spread of HIV in Namibia since the early 1990's with sero-prevalence rates persistently hovering around 20 percent in recent years. The increased mortality associated with AIDS has made it the leading cause of death in the country since 1996 (United Nations 2004). Accordingly, life expectancy has fallen sharply. Following one early set of projections by MOHSS (2001), life expectancy would be just over 40 years in 2005, which is nearly 25 years less than what it would have been without the epidemic. Newer estimates by CBS (2006c) suggest that mortality in Namibia has now peaked; however life expectancy is not projected to reclaim the level of 1991 until after 2021. United Nations (2007) is less optimistic. Its base-line scenario sees life expectancy in Namibia reach the levels of the 1990's only after 2045. How fast mortality rates will recover will depend to a great extent on the effectiveness of programmes to treat those with AIDS and to prevent new HIV infections.

Figure 2: Trends in HIV Prevalence and Life Expectancy



Source: CBS (2003), MOHSS (2001, 2007).

Note: Punctured line represents a projection.

The HDI for Namibia using the most recent data as a whole can then be calculated as illustrated through the following steps:

Step 1. **Calculate the Life Expectancy Index**, which is simply:

$$(49 \div 35) / (69 \div 35) = 0.413$$

Step 2. **Calculate the Educational Attainment Index**, which uses a composite of the adult literacy and the gross enrolment indices with a two-third weight given to literacy as given by:

$$(2/3) * ((84 \div 0) / (100 \div 0)) + (1/3) * ((66 \div 0) / (100 \div 0)) = 0.777$$

Step 3. **Calculate the Income Index**, by assuming that incomes have a greater impact at lower values because achieving a respectable level of human development does not require unlimited income. Therefore the logarithm of income is used:

$$(\log(10258) \div \log(1400)) / (\log(90000) \div \log(1400)) = 0.481$$

The corresponding values for each of the three sub-indices are presented in Table 4.

Table 4: Indices for Life Expectancy, Educational Attainment and Income

	Life Expectancy Index		Educational Attainment Index		Income Index	
	2001	1991	2001	1991	2003/2004	1993/1994
Namibia	0.413	0.763	0.777	0.732	0.481	0.326
Urban	0.546	0.841	0.825	0.810	0.612	0.507
Rural	0.322	0.728	0.743	0.693	0.355	0.169
Caprivi	0.165	0.528	0.731	0.663	0.365	0.131
Erongo	0.696	0.871	0.823	0.776	0.597	0.424
Hardap	0.426	0.726	0.771	0.738	0.518	0.446
Karas	0.653	0.741	0.809	0.785	0.530	0.473
Kavango	0.262	0.654	0.691	0.632	0.277	0.154
Khomas	0.665	0.956	0.835	0.795	0.696	0.602
Kunene	0.575	0.812	0.541	0.508	0.395	0.208
Ohangwena	0.166	0.816	0.774	0.722	0.270	0.034
Omaheke	0.725	0.691	0.636	0.546	0.521	0.348
Omusati	0.287	0.881	0.815	0.797	0.327	0.108
Oshana	0.315	0.799	0.858	0.833	0.471	0.175
Oshikoto	0.325	0.769	0.799	0.753	0.345	0.143
Otjozondjupa	0.771	0.759	0.685	0.613	0.459	0.330
Male	0.365	0.709	0.783	0.743	0.521	0.377
Female	0.462	0.818	0.769	0.717	0.404	0.206

Step 4. **Calculate the HDI**, which is done by taking a simple average of the three indices.

$$(0.413 + 0.777 + 0.481) / 3 = 0.557$$

Under this final step, the HDI is calculated for the periods of 2001-2004 and 1991-1994, as reflected in the available data, and disaggregated by region and for male and female headed households, as presented in Table 5. These results will be discussed in full in Section 4 but first the methodology behind the Human Poverty Index is presented.

Table 5: HDI for Namibia 2001-2004 and 1991-1994

Human Development Index		
	2001-2004	1991-1994
Namibia	0.557	0.607
Urban	0.661	0.719
Rural	0.473	0.530
Caprivi	0.421	0.441
Erongo	0.705	0.690
Hardap	0.572	0.637
Karas	0.664	0.666
Kavango	0.410	0.480
Khomas	0.732	0.784
Kunene	0.504	0.509
Ohangwena	0.403	0.524
Omaheke	0.627	0.528
Omusati	0.476	0.595
Oshana	0.548	0.602
Oshikoto	0.490	0.555
Otjozondjupa	0.638	0.567
Male	0.556	0.609
Female	0.545	0.580

3. The Human Poverty Index

Like the HDI, the HPI concentrates on three essential dimensions of human life; longevity, knowledge, and a decent standard of living. However, whereas the HDI sought to provide a measure for the *capabilities* of individuals, the HPI focuses on the flip side, namely the *deprivation* in the same three dimensions. This way, the first deprivation relates to survival or vulnerability to death at a relatively early age. The second relates to knowledge or being excluded from the world of reading and communication. The third relates to a decent living standard in terms of overall economic provisioning or poverty as measured by income.

In constructing the HPI, the deprivation in longevity is represented by the percentage of people not expected to survive to the age 40 (P_1), and the deprivation in knowledge is represented by percentage of adults who are illiterate (P_2). The deprivation in living standards is represented by the share of the population that live in households which fall below the national poverty line (P_3). The three dimensions of human poverty and the associated quantitative indicators are summarised in Table 6.

Table 6: Dimensions of the HPI

	Human Poverty Dimension	Quantitative Indicator
1.	Deprivation of longevity; survival	P ₁ : Probability of not surviving to the age of 40 (in %)
2.	Deprivation of knowledge	P ₂ : Illiteracy rate for adults over 15 years (in %)
3.	Deprivation of standard of living	P ₃ : Share of population living in households below national poverty line (in %)

Table 7: Some Basic Poverty Definitions

Income Poverty	Human Poverty
<i>Extreme poverty:</i> Lack of income necessary to satisfy basic food needs, usually defined on the basis of minimum calorie requirements.	<i>Lack of basic human capabilities:</i> Illiteracy, malnutrition, abbreviated life span, poor maternal health, illness from diseases.
<i>Overall poverty:</i> Lack of income necessary to satisfy essential non-food needs – such as for clothing, energy and shelter – as well as food.	Human poverty was introduced in the 1997 Human Development Report of UNDP. The report argued that if income is not the sum total of wellbeing, lack of income cannot be the total sum of poverty.
In Namibia, two official measures of income poverty are in use. Both are defined using a food share ratio whereby households are considered “poor” when more than 60 percent of their total consumption expenditure is devoted to food. Households with a food share over 80 percent are considered “severely poor”.	Human poverty focuses on the deprivation in the most essential capabilities of life, including leading a long and healthy life, being knowledgeable, having adequate economic provisioning and participating fully in the life of the community.

Source: CBS (2006b), UNDP (2000).

This way, the HPI for Namibia incorporates the traditional income poverty measure in the measurement of human poverty but broadens the definition to include deprivation in other dimensions. Some basic characteristics of and differences between income poverty and human poverty are presented in Table 7. Since all the relevant quantitative indicators are expressed in the same way—in percentage of total population—the composite variable of the HPI can be constructed by taking an average of the three variables P₁, P₂, and P₃.

This can be expressed as:

$$HPI = \left((1/k) \sum_{j=1}^k P_j^\alpha \right)^{\frac{1}{\alpha}}$$

Where *P* represents the *k* number dimensions of human poverty, of which 3 are included in the case of the Namibia HPI, and *a* provides a measure of the substitutionality between the dimensions. In the analysis *a* = 3 which gives an elasticity of substitution between the poverty dimensions of 1/2 and thus a greater weight is placed on dimensions with larger deprivation.

Table 8: Indices for Survival, Illiteracy and Income Poverty

	Probability at birth of not surviving to age 40 (%)		Adult illiteracy rate (%)		Share of population in households that spend more than 60% of total income on food (%)	
	2001	1991	2001	1991	2003/2004	1993/1994
Namibia	42	18	16	24	32	38
Urban	32	15	6	10	6	17
Rural	49	19	23	31	45	47
Caprivi	55	28	20	34	40	46
Erongo	25	14	6	15	5	27
Hardap	39	20	14	21	25	19
Karas	28	19	8	12	18	25
Kavango	50	23	28	38	50	71
Khomas	27	10	4	9	3	8
Kunene	33	16	41	49	39	39
Ohangwena	57	16	20	29	27	40
Omaheke	27	22	33	43	40	53
Omusati	52	13	16	22	50	39
Oshana	49	16	9	14	33	47
Oshikoto	49	16	16	22	53	36
Otjozondjupa	24	18	25	34	20	43
Male	43	19	15	22	30	37
Female	42	17	18	26	33	41

Note: Data sources are presented and discussed in full in Section 7.

Values for the indicators needed to calculate the HPI for Namibia are provided in Table 8. These indicators are mirror images of the indicators used in the HDI. Because of the drop in life expectancy already discussed, the probability at birth of not surviving to the age of 40 has increased from 18 to 42 percent as a national average. In Kavango, Omusati, Caprivi and Ohangwena the probability is 50 percent or higher. In other words, out of 100 babies born today in these regions, based on current patterns, on average at least half will die before they reach their 40th birthday.

The adult illiteracy rate is calculated simply as the difference between 100 and the level of literacy used for the HDI. Therefore the improvement in this indicator is directly reflected directly in the HPI. While the levels of illiteracy have improved in all regions, the differences are striking. For instance, in Khomas 4 percent of the population is considered illiterate compared to a share 10 times as large in Kunene. Levels of income poverty, the third and final component of the HPI, appear to have fallen somewhat from 38 percent of the population in 1993/1994 to 32 percent in 2003/2004. It is important to emphasise that this figure relates to the share of the *population* that live in poverty, not the share of *households*, which is reported in the official reports of the Namibia Household Income and Expenditure Survey or NHIES (more discussion on the poverty measure can be found below). This paper

is the first to present population based poverty figures, using the official poverty line, based on the 2003/2004 NHIES.

Table 9: HPI for Namibia 2001-2004 and 1991-1994

Human Poverty Index (%)		
	2001-2004	1991-1994
Namibia	33	29
Urban	23	14
Rural	42	36
Caprivi	43	38
Erongo	18	20
Hardap	30	20
Karas	21	20
Kavango	45	52
Khomas	19	9
Kunene	38	39
Ohangwena	42	31
Omaheke	34	43
Omusati	45	29
Oshana	37	33
Oshikoto	45	27
Otjozondjupa	23	35
Male	33	28
Female	34	31

The differences between urban and rural areas are particularly striking when it comes to income poverty levels. A total of 6 percent of the population in urban areas are poor by the national income definition compared to 45 percent in the rural areas. Moreover, the improvements in income poverty levels are much more pronounced in urban areas. In rural areas the levels of income poverty are more or less unchanged. Fifty percent or more of the population in Kavango, Omusati and Oshikoto are considered poor by the national standard, compared to just 3 and 5 percent in Khomas and Erongo, respectively. Erongo has seen the greatest fall in income poverty levels between the two surveys whereas income poverty levels are higher in Hardap, Omusati and Oshikoto. There are some important issues related to the data and the official definition of income poverty that are further discussed below.

By way of example constructing the HPI for the most recent year for which data is available for Namibia then becomes:

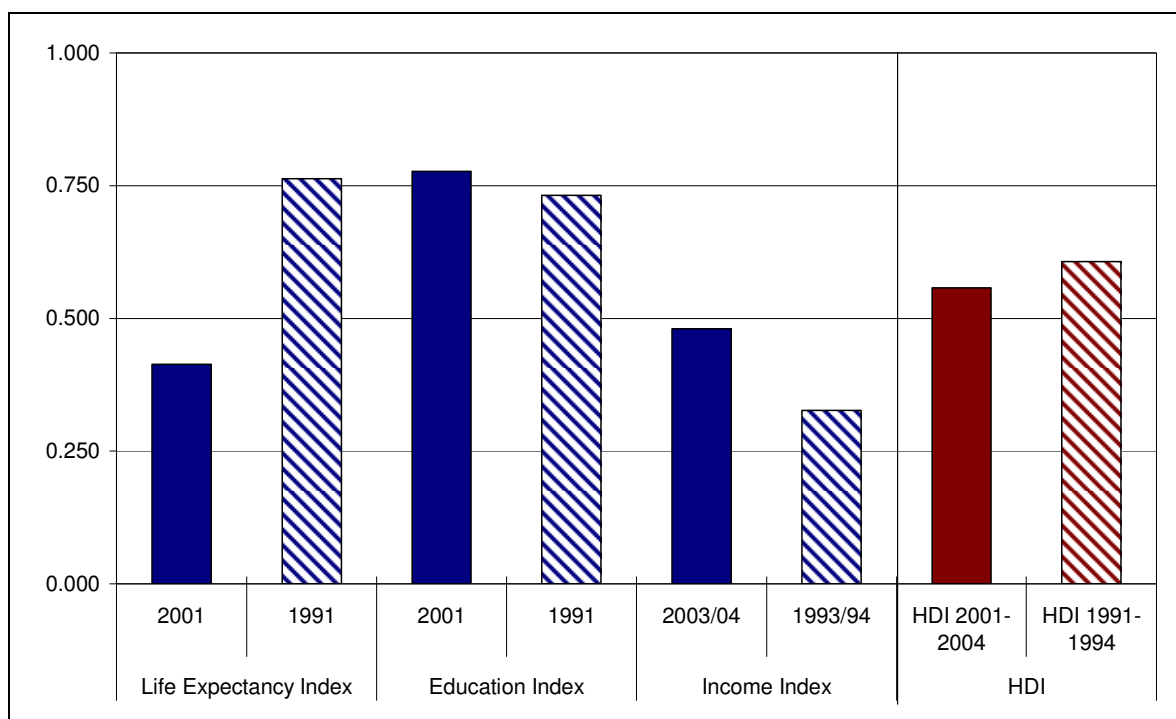
$$HPI = ((1/3) * (42^3 + 16^3 + 32^3))^{1/3} = 33$$

Using this formula, the HPI is calculated for the periods 2001-2004 and 1991-1994, as these are the periods for which comparable national data is available. Like the HDI, the HPI is disaggregated by region and for male and female headed households, and presented in Table 9. The results will be discussed in the subsequent sections.

4. Human Development in Namibia

This section describes the trends in human development over time and compares the HDI according to regional and gender differences. It also makes an international comparison of Namibia's human development performance.

Figure 3: Trends in HDI in Namibia

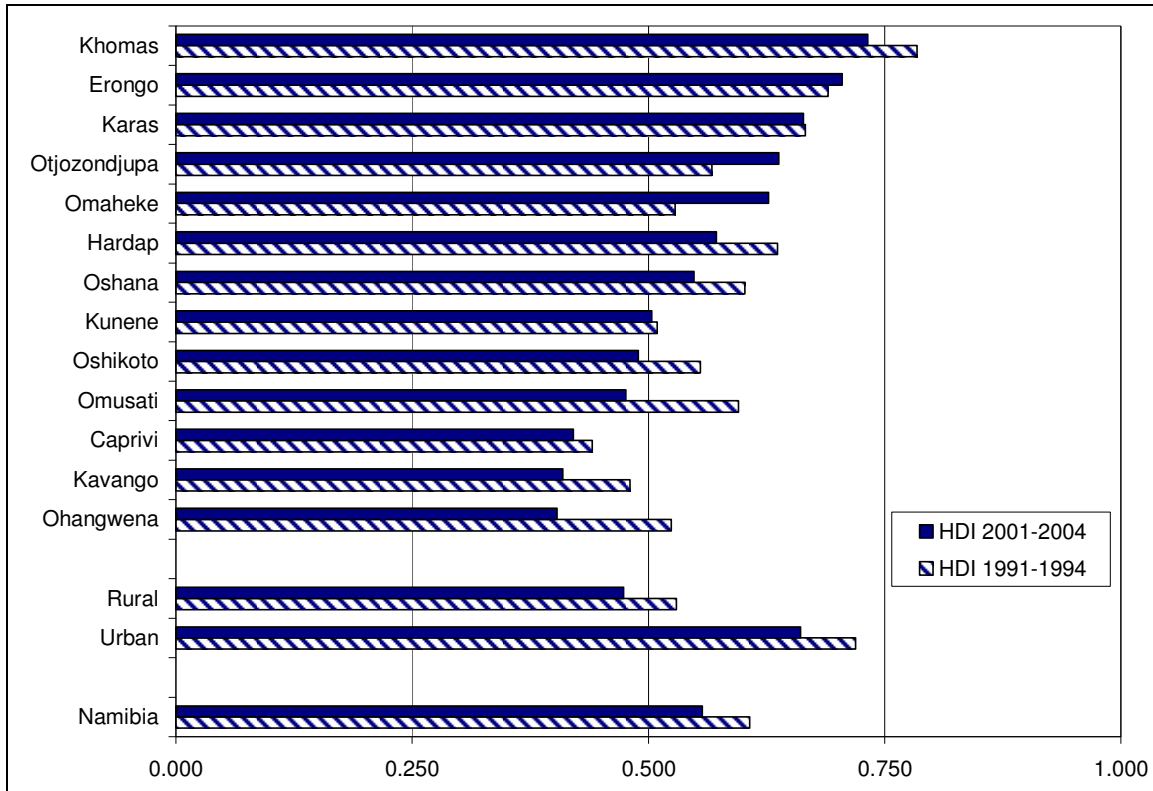


Trends in human development

Figure 3 shows the broad trends in the HDI for Namibia between the periods of 1991-1994 and 2001-2004. Both the income and the educational attainment components of the HDI have improved, reflecting increases in the household incomes and adult literacy rates that were noted earlier. However, the fall in life expectancy is responsible for the value of that index almost halving, and the net result is that the overall value of the HDI declined over the period from 0.607 to 0.557. In other words, the negative impact of the HIV/AIDS epidemic

(the primary driver of falling life expectancy) is so strong that it more than offsets the positive effects of improvements in other dimensions of human development. What appears to be a small change in the overall value of the HDI thus covers significant changes in the composition of the HDI. In the years after Independence longevity was the strongest contributor to the HDI, in recent years it has become the weakest. To further illustrate the impact of mortality on the HDI we have calculated that if life expectancy was 54 years instead of 49 the HDI would have been unchanged compared to the level of the early 1990's. Moreover, had life expectancy stayed constant at 61 years the HDI would have risen from 0.607 to 0.674.

Figure 4: Regional differences and changes in the HDI



Geographical differences in HDI

Figure 4 reveals the geographical differences in the HDI with Khomas and Erongo ranked highest among Namibia's 13 administrative regions, and Ohangwena and Kavango ranked the lowest. Rural areas generally perform worse than urban areas on all three dimensions of human development and thus the HDI is significantly lower there. The HDI has increased over time in five regions. These regions are Erongo, Karas, Otjozondjupa, Omaheke and Kunene, which are also the regions that have seen the lowest fall in life expectancy (in Omaheke life expectancy has actually increased by 1 year). In the remaining regions; the HDI is falling and the fall is particularly steep in Ohangwena, Omusati, Oshikoto and Kavango.

In the volume of the second National Development Plan (NDP2) on Regional Development Perspectives both the HDI and HPI were included to assist in monitoring performance under the Plan, and particularly in terms of quantifying and monitoring the targeted

reduction in regional disparities (NPC undated). Over the Plan-period (2001/2002-2005/2006) the targets were to reduce the difference in the values of the HDI and HPI between the three regions ranked highest on each index and those ranked lowest. Unfortunately, it is not possible to compare the values of the indices at the beginning and end of the plan period as the needed data was not collected specifically in those years. However, it is possible to see whether the desired convergence has taken place over the period of time for which data is available.

Table 10: Highest and lowest HDI ranked regions

HDI		
	2001-2004	1991-1994
<i>3 highest ranked</i>		
Karas	0.664	0.666
Erongo	0.705	0.690
Khomas	0.732	0.784
Average (high)	0.700	0.714
<i>3 lowest ranked</i>		
Ohangwena	0.403	0.524
Kavango	0.410	0.480
Caprivi	0.421	0.441
Average (low)	0.411	0.482
Average (high) minus by Average (low)	0.289	0.232

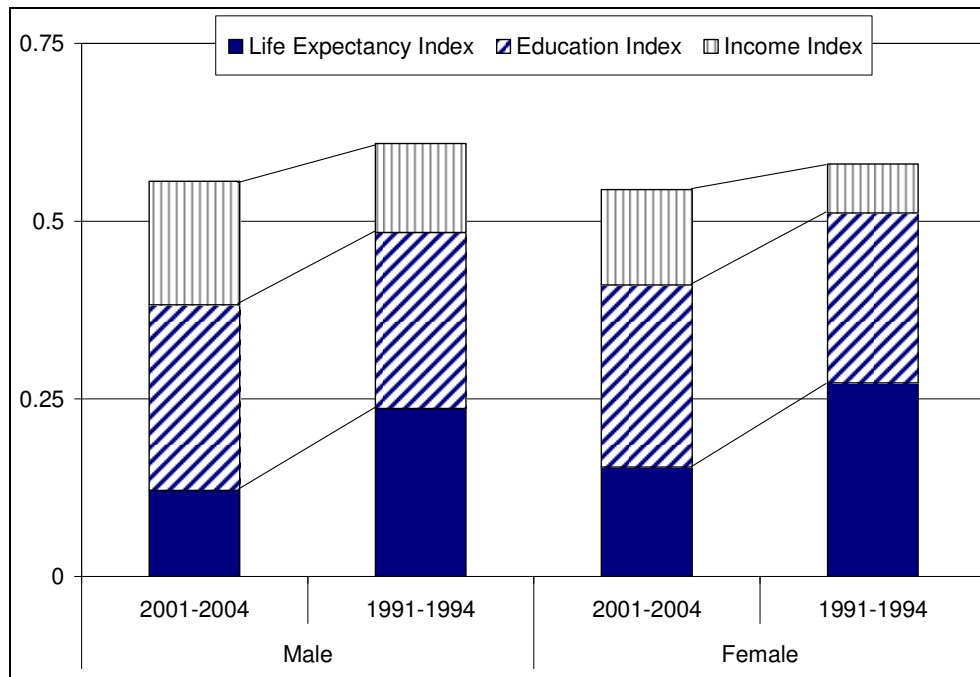
The three regions that ranked highest on the HDI for both periods of time were Khomas, Erongo and Karas. The three lowest ranked regions were also the same in the two time periods, namely Ohangwena, Kavango and Caprivi. In Table 10 the HDI values for these regions are presented and the average values for the two groups are compared. It is clear that the difference in the averages have increased over time. This is an indication of divergence in regional HDI performance, which is contrary to NDP2 objectives, even if measured over an extended time period.

Gender related differences in HDI

Figure 5 presents the HDI disaggregated by the sex of the head of household. The figure illustrates that the HDI remains higher for males. However, in spite of differences in the underlying indices, the values of the composite HDI for male and female headed households are quite close; 0.556 and 0.545, respectively. The main reason is that while male headed households generally performed better on the income index, and males have higher educational attainment, life expectancy remains slightly higher among females. In the calculation of the HDI, these opposing forces almost cancel each other out. It should be noted that the income indicator is disaggregated by the sex of the *head of household*, which

masks intra-household differences and is thus only a rough proxy for the actual incomes that men and women as individuals have command over.

Figure 5: Gender related differences in the HDI



HDI by language groups

The Central Bureau of Statistics includes in its surveys and census a background variable on the main language spoken in the household, which can be used to tabulate the human development indicators to reflect differences between the country’s different ethnic groups. As reflected in Table 11 these differences are sizeable. For instance, life expectancy at birth varies from 43 years among those who live in households where the main language spoken in Rukavango or Caprivian languages, to 79 years among those who live in households where the main language spoken is German. Moreover, among Khoisan-speakers the education indicators are almost half the national averages, and the difference in household income between Khoisan and German speaking households is a factor of 1:27.

Figure 6 presents the HDI disaggregated by the language groups and shows the contribution from each human development dimension to the overall index. The German and English speaking groups rank the highest on HDI and Rukavango and Khoisan rank lowest.

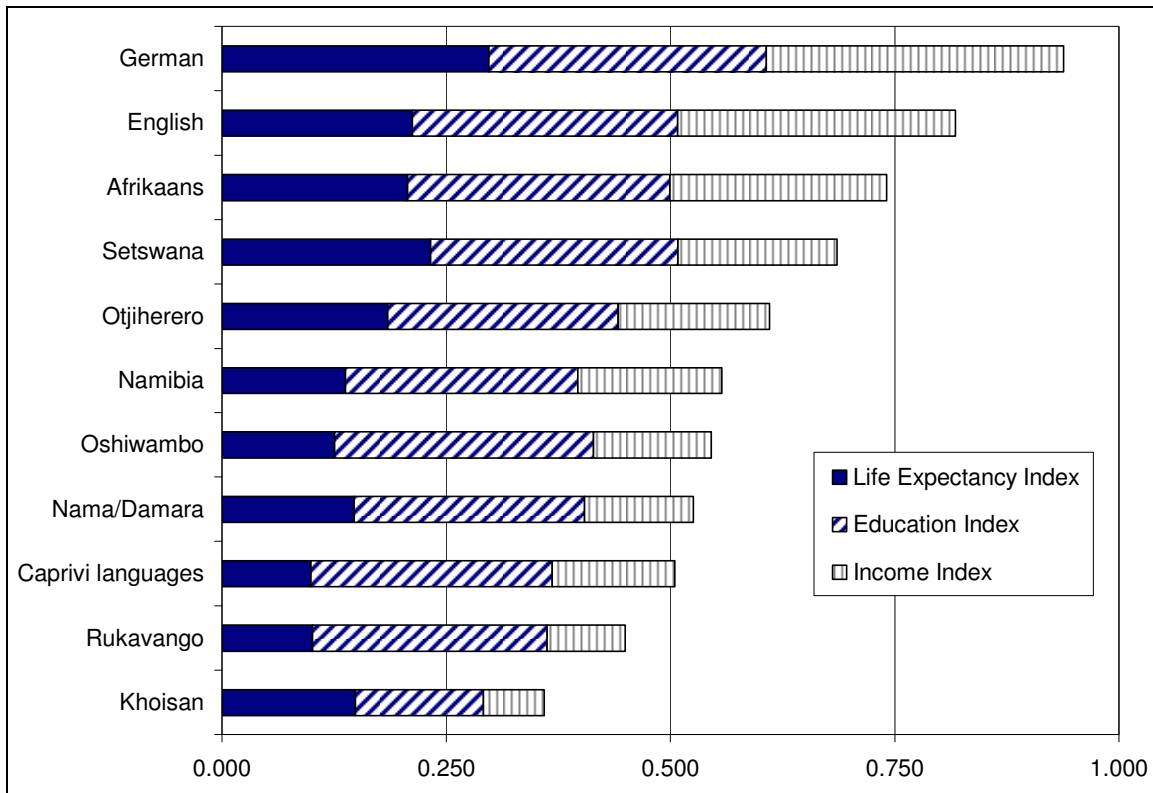
Table 11: Human Development Indicators by main language groups

	Life expectancy at birth (years)	Literacy rate, +15 years (%)	Gross enrolment ratio, 6-24 years (%)	Annual average adjusted per capita income (N\$)
	2001	2001	2001	2003/2004
Namibia	49	84	66	10,358
Khoisan	52	47	34	3,263
Rukavango	43	87	61	4,137
Caprivan languages	43	91	60	7,728
Nama/Damara	52	87	57	6,366
Oshiwambo	48	94	71	7,218
Otjiherero	58	86	59	11,478
Setswana	67	92	65	12,793
Afrikaans	62	99	66	28,684
English	63	100	67	66,898
German	79	100	79	87,649

Table 12: Human Development sub-indices by main language groups

	Life Expectancy Index	Educational Attainment Index	Income Index	HDI
	2001	2001	2003/2004	2001-2004
Namibia	0.413	0.777	0.481	0.557
Khoisan	0.447	0.429	0.203	0.359
Rukavango	0.304	0.785	0.260	0.449
Caprivi languages	0.297	0.807	0.410	0.505
Nama/Damara	0.442	0.772	0.364	0.526
Oshiwambo	0.377	0.866	0.394	0.546
Otjiherero	0.554	0.772	0.505	0.610
Setswana	0.698	0.827	0.531	0.686
Afrikaans	0.620	0.878	0.725	0.741
English	0.636	0.888	0.929	0.818
German	0.893	0.927	0.994	0.938

Figure 6: HDI by main language groups



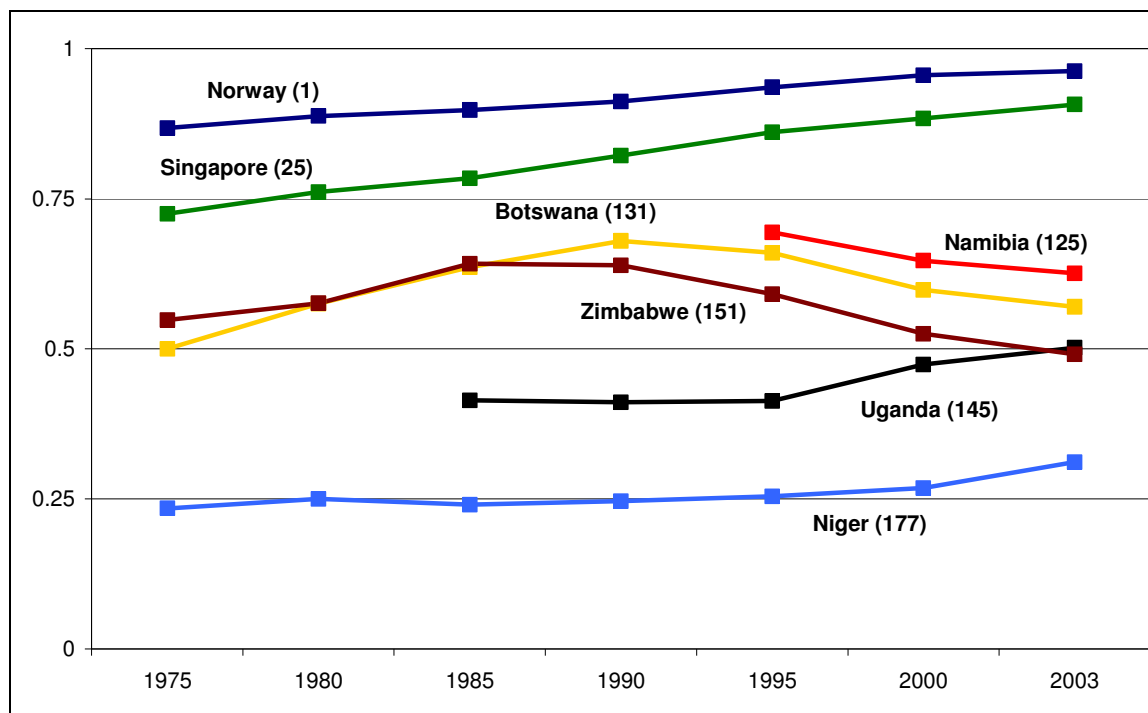
International comparisons of HDI

The HDI is calculated annually for most countries in the world and published in the global version of the Human Development Report by UNDP. The computation of the global index broadly follows the methodology above. However, the data sources for the indicators that make up the various dimensions are international organisations such as the UN Population Division, World Bank and UNESCO. While these sources, in turn, base their estimates on the inputs from national statistical agencies, substantial adjustments are often made notably in order to ensure comparability between countries. Therefore the HDI calculated and presented for Namibia in this paper cannot be directly compared to the one published in the global reports. Moreover, the use of different indicators also matters. For instance, in quantifying the standard of living dimension the global HDI uses production data (i.e. GDP) from the national accounts whereas the Namibia HDI, as seen above, makes use of the income data recorded through surveys at household level. In principle, this latter approach should be much more reflective of individual welfare than aggregate production.

Figure 7 depicts the trends in the HDI at five-year intervals as reported by the global Human Development Report (UNDP, 2006) for a select group of countries out of the total of 177 countries which had their HDI computed. Norway has been ranked as number 1 on the HDI in recent reports with steady progress since 1975. Singapore, currently ranked 25, is included as an illustration of a previously developing country that is catching up and making fast progress in human development. The lowest ranked among all countries is Niger, which

only recently is beginning to see its human development record improve, albeit from an extremely low base.

Figure 7: Trends in HDI for selected countries



Source: UNDP (2006).

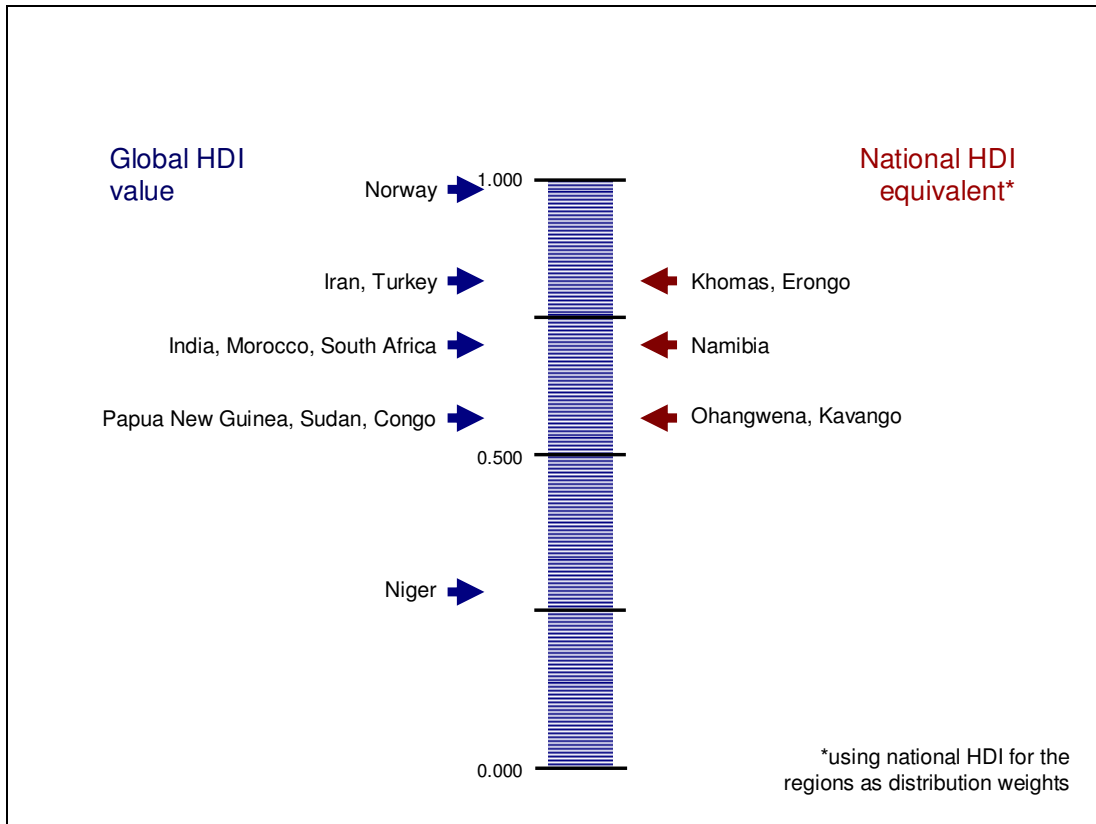
Note: The HDI values are calculated as part of the global human development report and thus the values for Namibia are not directly comparable to the values presented elsewhere in this paper which are based on national data sources. Figures in brackets indicate the rank of the country out of a total of 177 countries included in the 2006 edition of the global Human Development Report.

Even if the degree of progress differs widely, and in some it may temporarily be disrupted through to natural or man-made calamities, most countries in the world are seeing long-term improvements in human development with one major exception; countries in southern Africa—most of which are in deep decline. In the graph, the trends for Namibia, Botswana and Zimbabwe are included. For the two latter, which have data going well back in time, the HDI is now back at the levels last seen in the mid-1970s. The decline in human development, revealed by the national HDI presented for Namibia above, is also evident in the global data even if the time series only covers the period after Independence in 1990.

Other countries in the region (e.g. South Africa, Lesotho, Zambia and Swaziland) are seeing the same pattern of long-term decline, where the main driver is the fall in life expectancy that is primarily attributable to the HIV/AIDS epidemic. In Zimbabwe, which was once well established in the “medium human development” category (HDI between 0.5 and 0.8), the combination of the HIV/AIDS epidemic and the economic decline now means that the country has been relegated to the group of “low human development” countries. Uganda is also included in the graph to illustrate how an African country determined to overcome the HIV/AIDS epidemic, promote economic growth and expand knowledge can make solid gains in human development.

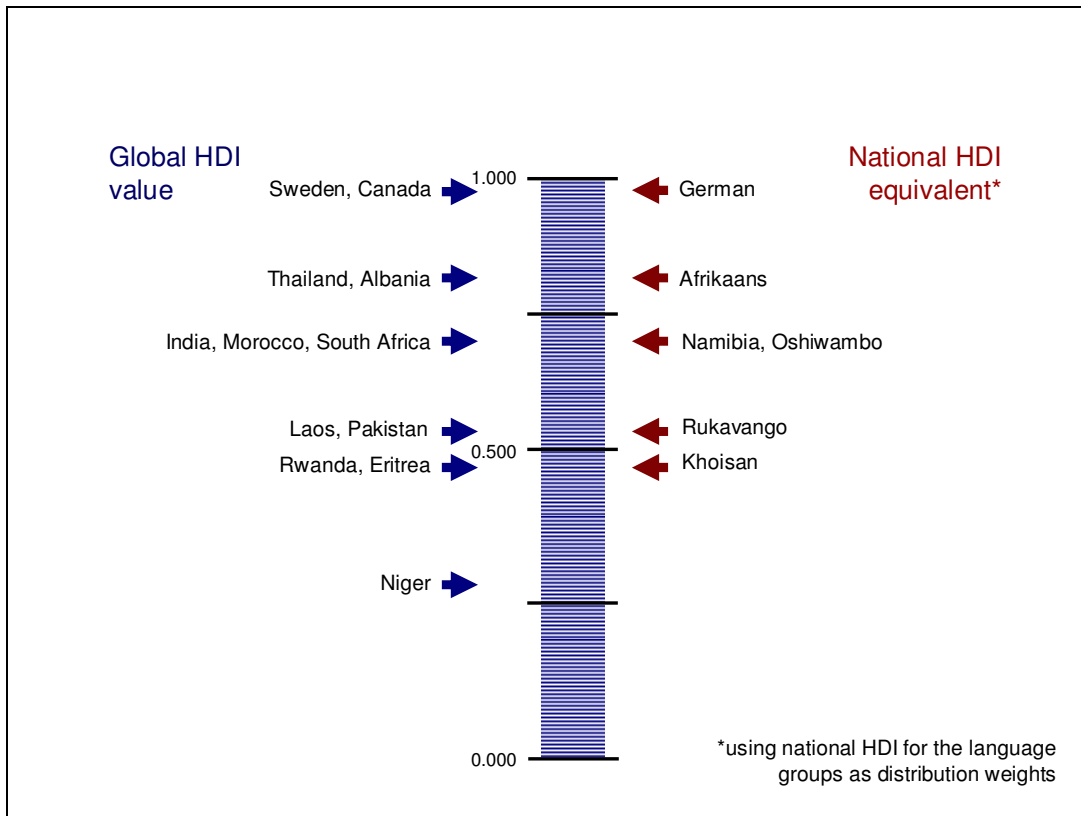
Given the similarity of the global HDI indicators and those used in the Namibia HDI it is possible to use the disaggregated information in the latter as weights on the global data to create national HDI equivalents that can be used as a basis for taking the international comparison one step further. This way the HDI can be re-calculated and compared directly with the HDI for individual countries. As illustrated on Figure 8 the regions that have the highest HDI rank, Khomas and Erongo, have a level of human development equal to that found in countries such as Iran and Turkey. At the other end of the scale the lowest ranked regions, Ohangwena and Kavango, have an HDI level comparable to Papua New Guinea, Sudan and Congo.

Figure 8: International HDI comparisons with Namibian regions



The differences are even more pronounced when the international comparison is made with Namibian language groups as illustrated in Figure 9. The language group with the highest HDI is German-speakers who have an HDI level that is comparable to the average in Sweden and Canada, countries that are ranked 5 and 6 in the 2006 global ranking (UNDP 2006). Interestingly, German-speakers in Namibia have a higher level of measured human development than does Germany. At the other extreme the Khoisan speakers have an HDI level that is comparable to countries such as Eritrea and Rwanda, countries that are among the 20 lowest ranked countries globally.

Figure 9: International HDI comparisons with Namibian language groups



5. Human Poverty in Namibia

This section describes the trends in human poverty over time and compares the HDI according to regional and gender differences. As noted earlier while human development focuses on the capabilities of individuals, human poverty is concerned with the deprivation of those capabilities.

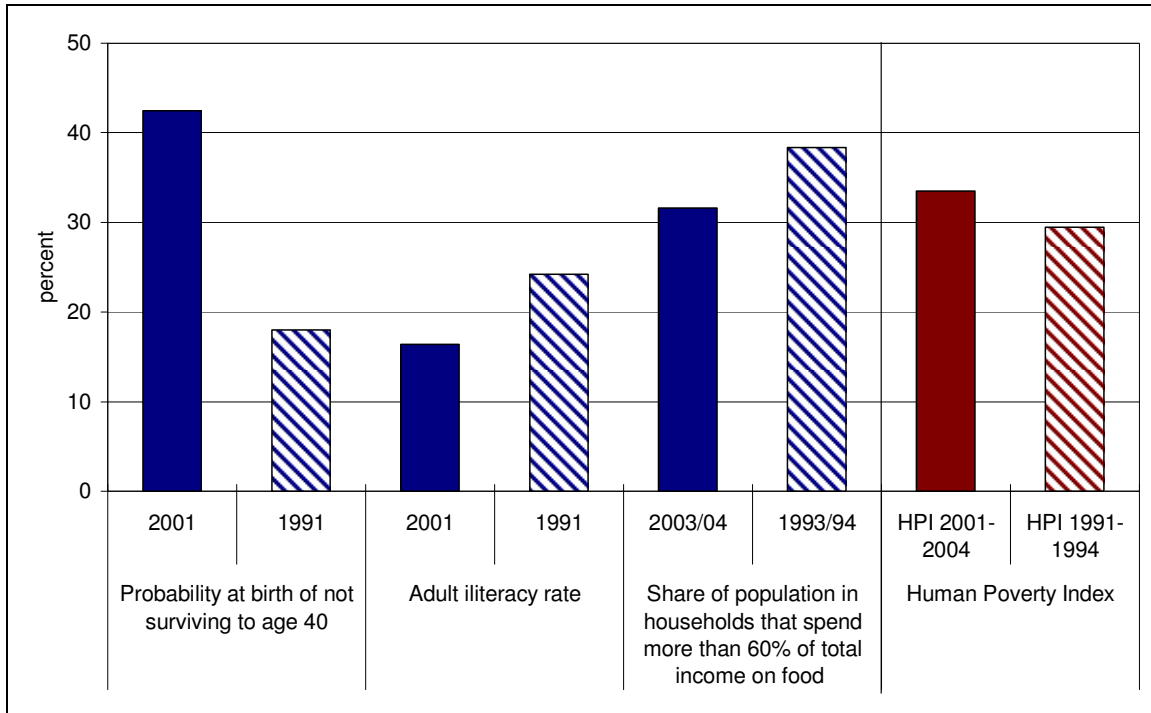
Trends in human poverty

The developments over time in human poverty mirror those in the worsening of human development explored above. The components of the HPI that relate to deprivation of a decent standard of living and educational attainment show improvements while deprivation in the measure of longevity or survival is deteriorating as illustrated on Figure 10. While the subcomponents of income poverty and adult illiteracy are improving over time, these improvements are not strong enough to offset the deterioration in survival. As a result, Namibia finds itself in a situation with falling levels of income poverty, from 38 to 32 percent, but increasing levels of human poverty, from 29 to 33 percent.² Note also how the level of human poverty in Namibia is slightly higher than the official income poverty measure. Therefore while the country may be making progress towards the first of the

² While expressed in percent the HPI should not be interpreted as a head count index since it is an average, albeit in the order of α , of the three sub-indices.

Millennium Development Goals, to eradicate extreme poverty, this depends on a narrow poverty definition that includes only income. A central result of this analysis is that when the poverty definition is expanded to include other measures of essential human capabilities, national poverty levels are in fact increasing.

Figure 10: Trends in HPI for Namibia



Geographical differences in HPI

Figure 11 illustrates the geographical differences in the HPI to show that Erongo and Khomas are ranked highest (i.e. with the lowest levels of human poverty) among Namibia's 13 administrative regions. The human poverty levels for these regions are less than 20 percent, compared to Oshikoto, Omusati and Kavango, which are ranked the lowest with levels of human poverty approaching 50 percent. Rural areas generally perform worse than urban areas on all three dimensions of human deprivation and thus the levels of human poverty, as expressed through the HPI, are significantly higher in rural areas. The HPI has fallen in five regions. These are Erongo, Otjozondjupa, Omaheke, Kunene and Kavango. In the remaining regions the HPI is increasing and this increase is particularly strong in Ohangwena, Omusati, Oshikoto and Kavango.

As noted above, NDP2 targets a decrease in the divergence of regional poverty levels as measured in a reduction in the difference in HPI values between the three highest ranked and the three lowest ranked regions. As shown in Table 13 the average HPI for the highest ranked region was 16 percent in the early period and 19 percent most recently. The corresponding HPI values for the three lowest ranked regions were unchanged at 45 percent. The difference in the averages thus fell from 29 percentage points to 26, which indicates that regional differences are narrowing. However, it should be emphasised that the while slight convergence in human poverty levels between the highest and lowest ranked regions was the result of an improvement in the poorest region of Kavango, an even greater contribution was the sharp deterioration in Khomas, formerly region with the lowest level of human

poverty, where levels of human poverty more than doubled. This is hardly a desired outcome even if it helped bring divergence down.

Figure 11: Regional differences and changes in HPI

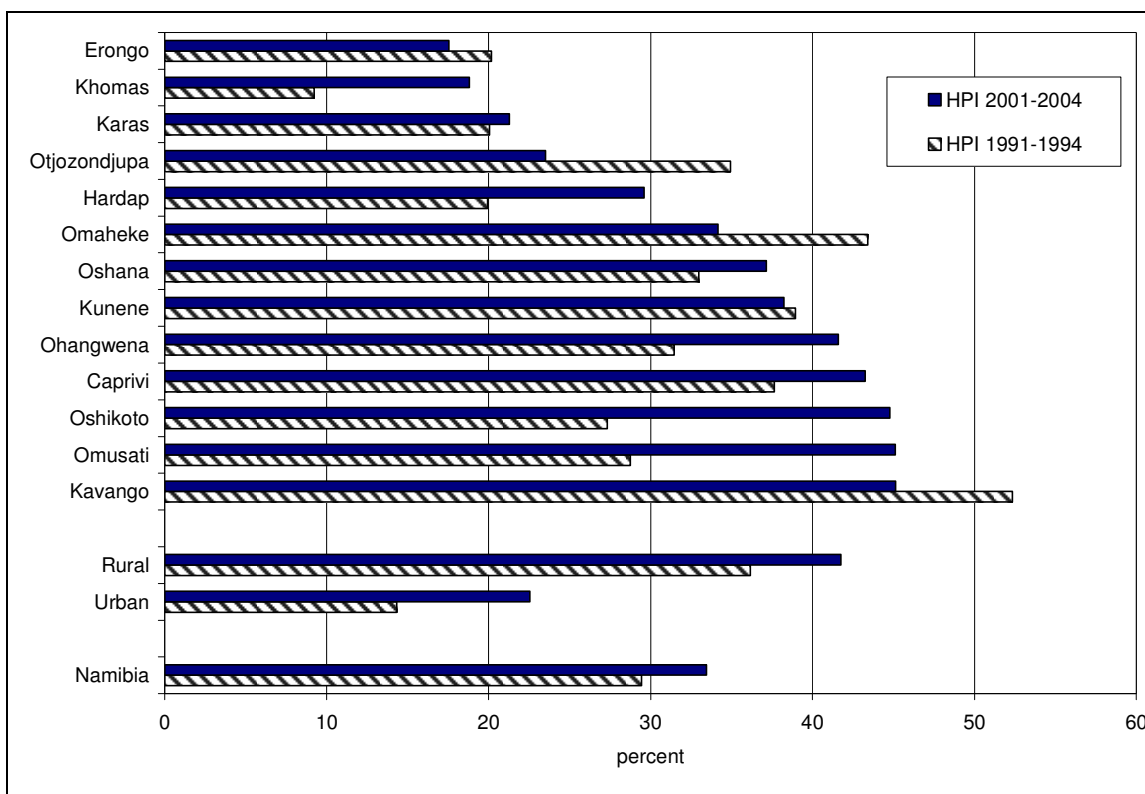


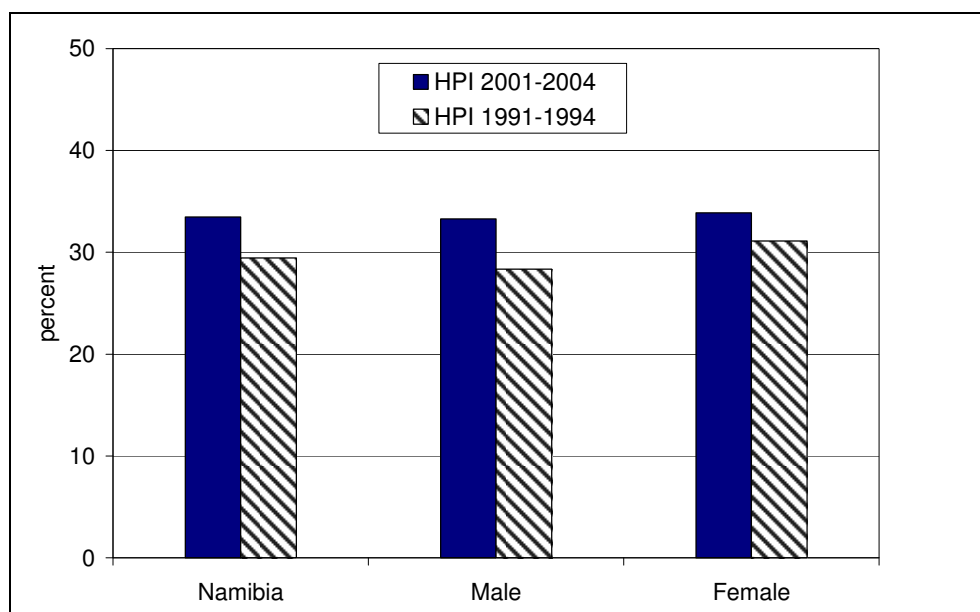
Table 13: Highest and lowest HPI ranked regions

HPI		
	2001-2004	1991-1994
<i>3 highest ranked (%)</i>		
Khomas	19	9
Karas	21	20
Erongo	18	20
Average (high)	19	16
<i>3 lowest ranked (%)</i>		
Oshikoto	45	-
Kavango	45	52
Omusati	45	-
Omaheke	-	43
Kunene	-	39
Average (low)	45	45
Average (low) minus by Average (high)	26	29

Gender related differences in HPI

Figure 12 presents the HPI disaggregated by the sex of the head of household. Just like for the HDI, the figure illustrates how, in spite of differences in the underlying indices, the composite HPI for male and female headed households are quite similar. In line with the trend for the overall population, the HPI has increased for both sexes. The most recent value of the HPI is 33 percent for males compared to 34 for females. While human poverty, as measured by the HPI, is slightly higher for females than for males, the gap has narrowed (from 3 percentage points to 1). Again, the income poverty measure, although expressed in percent of the population, is derived from household level data and may thus obscure important differences in intra-household incomes.

Figure 12: Gender related differences in HPI



6. HDI and regional development budgets

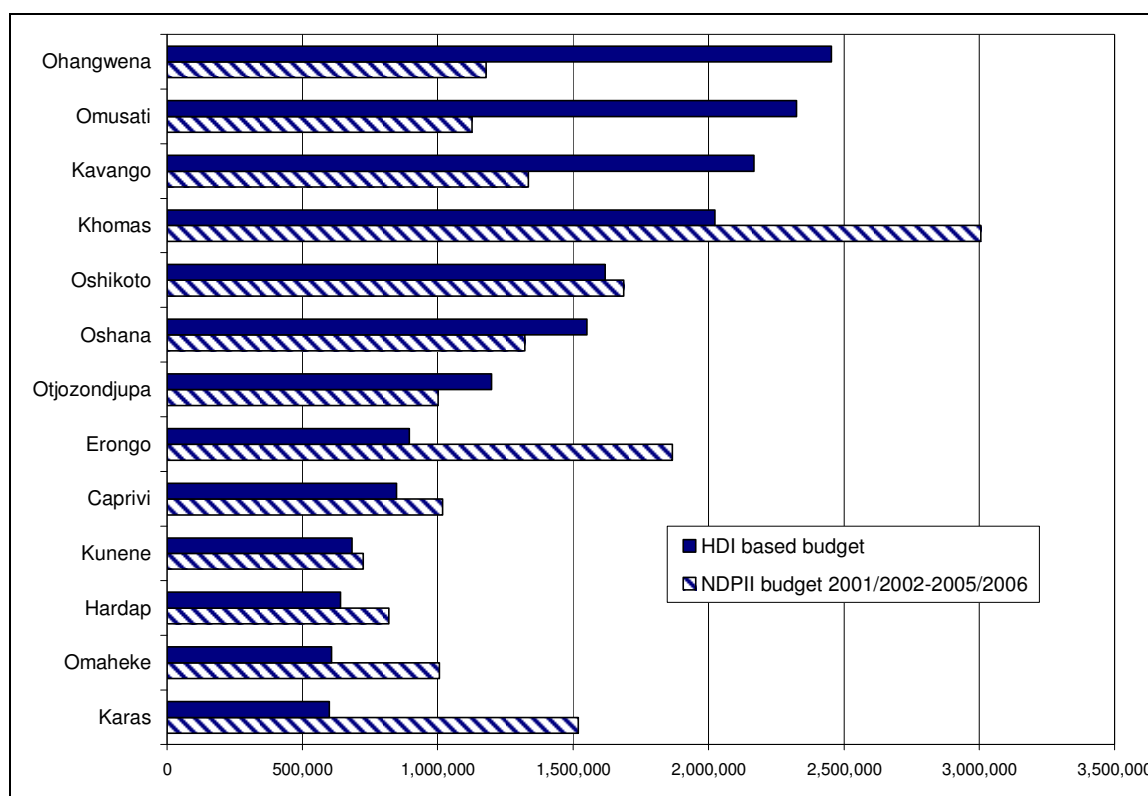
According to the volume on Regional Development Perspectives of NDP2: *“Improving the regional distribution of resources will necessitate the progressive decentralisation of resources and devolving planning, budget formulation and spending powers”* (NPC, undated: 10). The following analysis seeks to determine the relationship between needs, as defined by a shortfall in the HDI and the size of the population, in the administrative regions and past allocations to the regions from the national development budget. The first step in this analysis is to convert the HDI into a weight that can be applied to adjust the population in the 13 regions. For this purpose we normalise the HDI so that the all regional HDI values are expressed in relation to the best performing region (Khomas) by subtracting the HDI value of all regions from 1 and adding the HDI value of Khomas (0.732). This HDI weight is then used to adjust the population figures for each region using the data from the 2001 Census (CBS 2003). The results are reported in Table 14. Using the HDI as weights leads to some important adjustments in the regional population data. For instance the share of the HDI weighted population in Ohangwena, Omusati and Kavango is higher than the unweighted population

shares because of the relatively lower HDI performance in those regions. Conversely, HDI-weighted shares in Khomas, Erongo and Karas are lower.

Table 14: HDI weighted population

Region	HDI weight	Population 2001	Share of unweighted population (%)	Population weighted using HDI	Share of weighted population (%)
Caprivi	1.311	79,826	4.4	104,692	4.8
Erongo	1.027	107,663	5.9	110,556	5.1
Hardap	1.160	68,249	3.7	79,176	3.6
Karas	1.068	69,329	3.8	74,042	3.4
Kavango	1.322	202,694	11.1	268,032	12.3
Khomas	1.000	250,262	13.7	250,262	11.5
Kunene	1.228	68,735	3.8	84,429	3.9
Ohangwena	1.329	228,384	12.5	303,452	13.9
Omaheke	1.105	68,039	3.7	75,169	3.5
Omusati	1.256	228,842	12.5	287,380	13.2
Oshana	1.184	161,916	8.8	191,705	8.8
Oshikoto	1.242	161,007	8.8	200,026	9.2
Otjozondjupa	1.094	135,384	7.4	148,106	6.8

Figure 13: HDI-based budget vs. NDP2 budget (N\$ 1000)

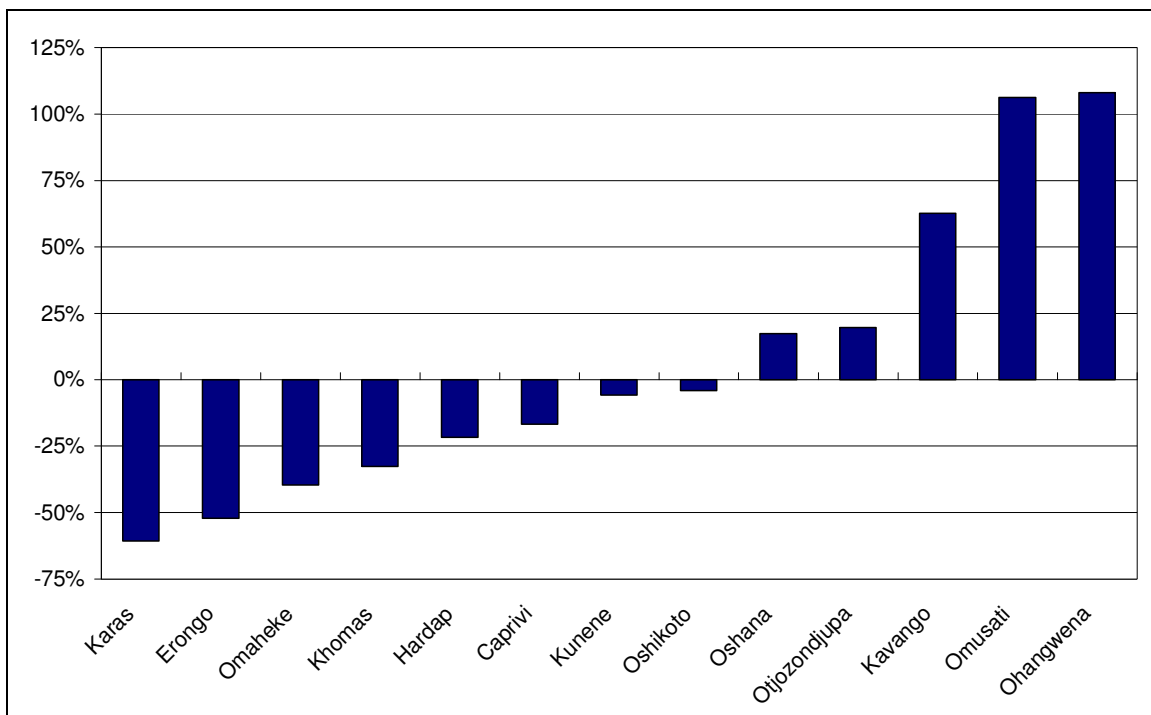


Note: NDP budget figures are from NPC (undated) and the HDI-based budget is calculated based on allocations according to the HDI weighted population.

Figure 13 illustrates the allocation of the N\$17.6 bn development budget proposed in NDP2 among the 13 administrative regions and makes a comparison with an allocation based on the needs in the regions as determined by the HDI-weighted population. There are clearly great discrepancies between the allocations in the NDP2 budget and the allocations that would follow from a HDI-based budget approach. Budget shares in all the regions would change. Given the lower HDI performance and higher population shares in regions such as Ohangwena and Omusati the budgets there would be more than twice as high under an HDI-based budget than what was proposed in NDP2. In Karas and Erongo the budgets would be halved under an HDI-based approach. The magnitude of the required reallocation between regions under an HDI-based budget approach is further illustrated in Figure 14.

Decentralisation continues to be high on the national policy agenda and the process is invariably shaped by a range of complex political economy factors linked to population dynamics, local economic conditions, geo-physical features, and institutional and human capacities. Naturally, these and many other factors must be taken into account when allocating the development budget among the regions. However, as the above analysis suggests a greater concern with budgeting according to actual needs in the regions seems warranted especially given the observed divergence in regional HDI performance.

Figure 14: Change in allocation under HDI-based budget



7. Notes on the Data Sources for Computing HDI/HPI

The indicators on which the HDI and HPI are based are predominantly from data obtained through national survey instruments or the Census. In fact, the major criteria for selecting the indicators have been whether there was a credible official data source that is updated regularly and with a historical reference; whether the indicator could be seen to represent a

good proxy for the human development dimension; and, whether the indicator could be disaggregated. However, like in most other developing countries, and even in many developed ones, the statistical system in Namibia faces a host of challenges in the production of statistics. These issues have invariably affected the preparation of the NHDR, which is heavily reliant on quantitative data for its analysis, and particularly in the computation of the HDI and HPI. Three sets of challenges in particular have affected the analysis.

The first set of challenges relate to *timing and timeliness*. As will be noted from the presentation above in calculating the HDI and HPI, a mix of data sources has been used which cover a range of years (2001-2004 and 1991-1994) because the computation has relied on surveys carried out in different years. Ideally, the indices should be based on data compiled in the same year but that was not possible given the differences in timing between the Census (carried out in 1991 and 2001) and the Namibia Household Income and Expenditure Survey or NHIES (carried out in 1993/1994 and 2003/2004). Moreover, an index based in part on 2001 data might be considered outdated for an analysis carried out in 2007 and so a more regular churning out of data, especially on areas of national priority, is something to strive for in Namibia. In order to achieve greater timeliness in the production of data, there is also a need for a more integrated approach to the household survey programme, and to reduce the time span between data collection and release. Moreover, some data should be the subject of regular projections of annual estimates as is customary in many countries with e.g. life expectancy. This in turn requires a profound strengthening of the technical and managerial capacities at the Central Bureau of Statistics. Nevertheless, since the indicators underlying the HDI/HPI are ‘outcome’ and ‘impact’ indicators they are to some extent “slow-moving” and therefore the results are unlikely to change dramatically from one year to the next.

The second set of challenges relates to the *quality* of the data, which like the issues of timing and timeliness, have affected the work on the NHDR, and which is affecting the long term credibility of the Central Bureau of Statistics and all the stakeholders in the national statistical system. Some quality issues emerge as a result of desired changes e.g. as new technologies such as scanning improve data capturing or as field workers gain experience over time. In this light, earlier surveys may appear deficient and hard to compare with better quality newer surveys. The NHIES is a case in point where improvements were made to the questionnaire, used in the most recent round, to more adequately capture non-food expenditure of households. As a result of this and other changes, the Central Bureau of Statistics urges data users: “...to treat observed changes over time between the two surveys as more indicative of direction rather than as precise estimates” (CBS 2006b:12). But the quality of a given survey will also be affected by issues related to management, incentive structures, resource availability, capacities and a whole range of other issues that to a more or lesser extent has invariably impacted all the surveys and censuses used in this analysis.³

The final set of challenges that have affected the work on the NHDR and HDI/HPI relates to *availability* of the data beyond the mere reference to hard copy reports. While staff at the Central Bureau of Statistics has been extremely helpful in providing the information used in this analysis, even they struggled at times to access and retrieve data from their own data bases. Ensuring proper data storage and archiving of documentation must be made a priority in order to avoid corrosion in the nation’s databank. There are examples of older datasets

³ Kiregyera (2004) provides an extensive overview of the challenges related to data quality in Namibia.

that have now become unrecoverable and watchful eyes will be able to detect small differences between certain indicators reported in this paper, which are mostly the result of special tabulations directly from the data bases, and the values of the same indicators in the official publications. In the future it would also be advisable to reverse the unfortunate tradition that has been established in Namibia where data sets are not made available directly to researchers for analysis. Technical issues related to the protection of respondent anonymity and creating restricted space (e.g. “sterile chambers”) for data access should not pose major challenges, but the progress needs to be complemented by broad efforts to strengthen capacities and rebuilding the trust among the stakeholders.

Some issues related to specific indicators are detailed in the following:

- *Life expectancy at birth (years)*: For both years this has been obtained directly from the Population and Housing Census of 1991 and 2001 (CBS 1993, 2003). The disaggregation by language groups was done by CBS using MortPak software combining household and individual files of the Census.
- *Literacy rate, +15 years (%)*: For both years, this indicator has been calculated through special tabulations by the CBS on the Population and Housing Census of 1991 and 2001 (CBS 1993, 2003). In the Census all Namibians are asked: “*Can you read and write in any language with understanding?*” Individuals that answer yes to that question are considered literate. However, this method is likely to overestimate the levels of literacy among the adult population. For instance, when actually *testing* the learners on their abilities to read and write, instead of just *asking* whether they can, much lower levels of literacy are obtained. Unfortunately, representative literacy tests have not yet been administered beyond certain younger age groups.
- *Gross enrolment ratio, 6-24 years (%)*: For both years this indicator, which measures the share of the population aged 6-24 years that are currently enrolled in primary, secondary or tertiary education, has been calculated through special tabulations by the CBS on the Population and Housing Census of 1991 and 2001 (CBS 1993, 2003). This indicator is also problematic notably as gross enrolment may rise and/or be higher in certain regions, solely due to increased repetition by learners, and the indicator is affected over time by administrative changes such as the introduction of automatic promotion. In the calculation of the Education Index this indicator is weighted by one-third and the literacy rate by two-thirds.
- *Annual average adjusted per capita income (N\$)*: This indicator is from the two NHIES (CBS 1996; 2006a), where it is adjusted for household composition (although not for economies of scale) by using a simple adult equivalence scale whereby household members over 16 years are assigned a weight of 1, those 6-15 years a weight of 0.75 and those under 6 years a weight of 0.5. It should be emphasised that data on income in the NHIES is actually derived from observed consumption expenditure and not income as such. In Table 3 the data from the 1993/1994 NHIES was further adjusted by the overall rate of the Consumer Price Index (in the absence of detailed price data from the two surveys) for the period 1995-2004 (CBS 2006b) to make it directly comparable to the 2003/2004 NHIES data. There is some concern related to comparability between the two surveys especially since the measurement of non-food expenditure has been strengthened in the most recent survey round (CBS

2006a). The implication is that the improvement, though not the level, of income recorded in 2003/2004 may be exaggerated. This suggests that the income dimension index of 1993/1994 could be higher, which in turn would imply that the actual decline in the HDI might be even sharper than what has been reported above.

- *Probability at birth of not surviving to the age of 40 (%)*: For both years the values of this indicator have been calculated through special calculations by the CBS using MortPak on mortality data of the Population and Housing Census of 1991 and 2001 (CBS 1993, 2003).
- *Adult illiteracy rate (%)*: For both years, this indicator has been calculated simply as the difference between 100 and the adult literacy rate mentioned above.
- *Share of population in households that spend more than 60% of total income on food (%)*: In the NHIES, only poverty levels by households are reported and so this indicator, based on population, was obtained through a special tabulation on the NHIES datasets. This paper thus represents the first time that per capita income poverty levels for Namibia are presented using the most recent NHIES. Invariably when it comes to measurement of income poverty there is a host of methodological issues to take into account. Obviously if non-food items have been under-estimated in previous surveys, as mentioned above, a poverty measure which is defined in relation to non-food consumption will exaggerate the fall in poverty levels. Moreover, there have been some experiments with an income poverty measure that is based on the costs of obtaining a basket of basic food and non-food needs and the Central Bureau of Statistics is expected to adopt such a measure in the future (Van Rooy et al 2006; Levine 2006). However, while the national authorities have long recognised the inadequacies of the current measure (CBS 1996) the food-ratio method still in use does have some advantages as a supplementary measure particularly if one is worried about the quality of survey data or the price deflator (Ravallion, 1992).

In the computation of the HDI several checks of sensitivity were conducted, e.g. leaving out the gross enrolment ratio, changing the goal posts and estimating the weights of aggregation empirically using factor analysis. Such changes generally changed the levels of the index but only to a limited extent the ranking within the sub-groups, which suggests that the HDI as a measure for ranking performance in capability related development outcomes is quite robust.

8. Conclusion

This paper has outlined the methodology established by UNDP for measuring human development and human poverty based on a capabilities approach, and applied the methodology to Namibia. The two main composite indices; the Human Development Index (HDI) and the Human Poverty Index (HPI) were modified, calculated and analysed for two time periods 1991-1994 and 2001-2004 for which comparable national data was available. The analysis showed deterioration in both of the indices over time reflecting an overall worsening in the essential capabilities of Namibians. While the components of the HDI related to income and educational attainment had improved—through increases in household incomes and adult literacy rates—the negative impact of the HIV/AIDS epidemic, the primary driver of falling life expectancy, was so strong that it more than offset

the positive effects of improvements in the other dimensions of human development. The net result was falling levels of human development, which is contrary to the objectives of Vision 2030. The analysis also showed great disparities between the country's language groups in terms of HDI performance reflecting profound difficulties in overcoming discrimination and exclusion based on ethnicity. Moreover, the results indicated divergence in regional HDI performance implying that regional disparities have increased over time despite NDP2 targets aimed at reducing disparities. Additional analysis suggested that when using population size and HDI as allocation criteria the administrative regions with the greatest needs are under-prioritised in the development budget.

The deterioration in human development over time was mirrored in a worsening of human poverty in Namibia. The components of the HPI related to deprivation of a decent standard of living and educational attainment showed improvements while deprivation in the measure of longevity or survival was deteriorating. While the subcomponent of the HPI on income poverty was improving over time, this improvement was not strong enough to offset the deterioration in survival. Therefore the level of human poverty in Namibia is found to be slightly higher than what is suggested by the official income poverty measures. Moreover, over time income poverty appears to be decreasing while human poverty is increasing.

Reversing the deterioration in the HDI and HPI will depend on a continued expansion of the capabilities of Namibians in the areas of education and knowledge, and raising the material standard of living and increasing incomes, through the promotion of broad based economic growth, job creation and supported by informal opportunities and social safety nets. However, the single greatest challenge, the greatest threat to the expansion of essential human capabilities in Namibia today, remains the HIV/AIDS epidemic which, through its impact on mortality, is undermining the human development objectives of Namibia's Vision 2030. Reversing mortality rates will in turn depend on the effectiveness with which programmes to treat those with AIDS and prevent new HIV infections are implemented.

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