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A Review of Poverty and Inequality in Namibia

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Central Bureau of Statistics
National Planning Commission

Republic of Namibia

A REVIEW OF POVERTY AND INEQUALITY IN NAMIBIA

CENTRAL BUREAU OF STATISTICS
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Executive summary

This report presents an analysis of poverty and inequality in Namibia based on the expenditure data from the 2003/2004 Namibia Household Income and Expenditure Survey (NHIES) conducted by the Central Bureau of Statistics. The main analytical purpose of the report is to establish a new set of poverty lines for Namibia based on the Cost of Basic Needs (CBN) approach, which has become part of the poverty monitoring standard among the Southern African Development Community (SADC) and most developing countries. Poverty lines are particularly useful for drawing of poverty profiles, examining the determinants of poverty and guiding policy interventions aimed at poverty reduction.

The process of setting the new poverty line can be split into two major stages. First, using the NHIES data for households with low consumption expenditure, a food basket is determined based on actual consumption patterns of low income households. Second, taking into account non-food requirements in addition to food needs, two poverty lines are established for "poor" and "severely poor" households where consumption levels per adult equivalent are lower than N$ 262.45 and N$ 184.56, respectively. Then by using these definitions the incidence of poor and severely poor households are computed at 27.6 percent and 13.8 percent, respectively. Compared to the poverty line used previously by the Central Bureau of Statistics, which was based on a simple relationship between the food expenditure and total expenditure, the impact of the revised methodology for setting the poverty lines is practically unchanged for poor households (previously estimated at 27.8 percent). However, the incidence of severely poor households is almost three times higher under the new poverty line (previously estimated at 3.9 percent). Sensitivity tests show how the new poverty lines are quite robust to small changes in specification while the analysis provides further evidence as to the classification of high expenditure households as poor or severely poor under the food-share method.

Using the new CBN-based poverty lines, the study presents a detailed poverty profile of Namibia. This profile shows that poverty status in the country is closely correlated with a series of social, demographic, geographic and economic features of households. Multivariate analysis confirms that poverty levels in Namibia are higher for instance among households that are female-headed, based in rural areas and have one or more children. These results underscore the potential for poverty reduction through targeting of policies and interventions. Consumption expenditure is positively correlated with the education levels of the head of household. The higher the level of education, the higher the levels of consumption expenditure and the more likely the household is to be classified as non-poor holding other factors constant. These results underscore the centrality of strengthening the education system, especially expansion in access to secondary education, as an important part of the national poverty reduction strategy. Relying on pension as a main source of income is associated with lower levels of consumption expenditure and a higher probability of poverty compared to other income sources. One way of explaining that pensions are inadequate to lift households above the poverty line is that households that rely on pensions as their main source of income are generally larger than other households. In other words, a greater number of people depend on the pension for their livelihood than merely the pensioner. This type of information is important to consider when

determining the appropriate levels of social transfers and assessing their impact on poverty. Differences in poverty levels also prevail according to administrative regions: the Kavango and Ohangwena regions not only have the highest levels of incidence of poverty but they are also home to the largest shares of poor households. These findings suggest the potential for greater geographical targeting of anti-poverty programmes and for ensuring that the benefits of the economic growth process accrue more favourably to these and other disproportionately poor regions, when relevant policy interventions may be considered.

The analysis further reveals how unequal the consumption expenditure patterns are in Namibia. The 10 percent of households with the lowest levels of expenditure account for just over 1 percent of total expenditure in Namibia. The 10 percent of households with the highest expenditure account for more than 50 percent of total expenditure. Stated in another way the wealthiest 10 percent in the country have consumption levels that are 50 times higher than the poorest 10 percent. The Gini coefficient, which is the standard summary measure for inequality, is 0.63 and with great variation according to various background variables such as sex, age, main source of income and administrative region. A comparison with countries for which comparable data is available suggests that the level of inequality in Namibia is among the highest in the world. Additional measures of inequality are introduced in order to deepen the understanding of inequality in Namibia. Notably, a generalised entropy index is used for a decomposition exercise that reveals how in general inequality in Namibia is the product more of inequality within different social groups rather than of inequality between them. Nevertheless, between-group inequality is sizeable especially when the population is arranged by main language spoken and educational attainment. Moreover, the analysis introduces two measures of polarisation, which quantify the extent of the concentration of expenditure among distinct groups. These results suggest that in addition to being among the most unequal societies in the world, Namibia is also among the most polarised.

The report highlights a range of methodological aspects in the establishment of the poverty line for Namibia and documents the technical steps involved. However, while the process has been pursued with the greatest possible methodological rigour, eventually the setting of any poverty line necessarily involves an element of subjectivity as to where exactly the cut-off points in the distribution are put. Moreover, poverty is a dynamic phenomenon of multiple dimensions, which goes beyond money-metric measures such as income and consumption, which has been the main focus of this report. The analysis presented in this report must therefore not be regarded in isolation but as part of a broader effort that relies on quantitative as well as qualitative approaches to contribute to the understanding of poverty in Namibia as an important basis for designing effective interventions to improve the welfare of Namibians. Additional analysis also needs to be carried out on the NHIES data to facilitate comparability with an earlier survey, study trends over time in poverty and inequality, finalise the analysis of the income and nutrition data, as well as more indepth analysis of regional aspects of poverty prevalence.

Foreword

This report contains one of the most comprehensive and authoritative analyses of poverty and inequality conducted to date in Namibia. It is based on the 2003/2004 Namibia Household Income and Expenditure Survey (NHIES) and includes the establishment of a new poverty line based on the cost of basic food and non-food needs. This new method replaces the approach used since the first NHIES in 1993/1994 and accordingly this report presents new estimates of household poverty and an updated and expanded poverty profile. Moreover, new measures for inequality and polarisation are introduced.

The work contained in this report is part of the Central Bureau of Statistics' mission to make available timely and high quality data based on definitions firmly anchored in international best practices. The analysis was carried out by an in-house team of statisticians with technical assistance in analysis and report-writing from Sebastian Levine (UNDP, Namibia) and Benjamin Roberts (Human Sciences Research Council, South Africa). The methodology and results presented in the report have been subject to extensive scrutiny by stakeholders in Namibia and from international experts. Special acknowledgement goes to Julian May (University of KwaZulu-Natal, South Africa) and Haroon Bhorat (University of Cape Town, South Africa) who peer-reviewed the report and who made many valuable observations that have significantly strengthened the final analysis. The team is also grateful for many insightful comments from Jean-Yves Duclos (University of Laval, Canada), Erik Thorbecke (Cornell University, USA) and Abdelkrim Araar (University of Laval, Canada).

The NHIES on which this report is based was financed with support from the Swedish Agency for International Development, UNDP and UNICEF. Funding for the preparation of the present report was made available by the Government of Namibia and the UNDP Thematic Trust Fund for Poverty Reduction. Last but not least, we are sincerely grateful for the support of everyone who helped make this report possible especially all the households who participated in the 2003/2004 NHIES and indeed to the CBS dedicated NHIES management and analysis team without whose inputs this report would not have been possible.

FSM Hangula
Government Statistician

List of acronyms and abbreviations

AIDS	Acquired Immune Deficiency Syndrome
Ave.	Average
CBN	Cost of Basic Needs
CBS	Central Bureau of Statistics
CPI	Consumer Price Index
DAD	Distributive Analysis/Analysis Distributive
DER	Duclos-Esteban-Ray
DRB	Daily Record Book
Exp.	Expenditure
FAO	Food and Agricultural Organisation of the United Nations
FEI	Food Energy Intake
FGT	Foster-Greer-Thorbecke
GRN	Government of the Republic of Namibia
HH/hh	Households
HPI	Human Poverty Index
NHIES	Namibia Household Income and Expenditure Survey
No.	Number
N$	Namibian Dollar (1 USD = 6.4 N$ in 2004)
NPC	National Planning Commission
NDP	National Development Plan
OLS	Ordinary Least Squares
PES	Post Enumeration Survey
PPP	Purchasing Power Parity
PSU	Primary Sampling Unit
RDA	Recommended Dietary Allowance
SADC	Southern African Development Community
SSD	Social Sciences Division
Std. Dev.	Standard Deviation
UNAM	University of Namibia
UNDP	United Nations Development Programme
UNSD	United Nations Statistics Division
UNU	United Nations University
US$	United States Dollar
VIP	Ventilated Improved Pit
WHO	World Health Organisation

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1. Introduction

The reduction of poverty and inequality remains an overarching priority for the Government of Namibia. The national development framework, Vision 2030, finds that in the current situation: *"Inequality and poverty endangers social harmony, peace and democracy"* and sets as its long-term development objective: *"Poverty is reduced to the minimum, the existing pattern of income-distribution is equitable and disparity is at the minimum."* (GRN, 2004: 104f). Moreover, strategies to implement Vision 2030, such as the successive medium-term National Development Plans, the 1998 Poverty Reduction Strategy and the 2001 National Poverty Reduction Action Programme all have reduction of poverty and inequality among their chief objectives (GRN 1998, 2001, 2002, 2005). Namibia is also signatory to major agreements that shape the global development policy agenda; notably the 2000 Millennium Declaration, which commits countries to cut the 1990 incidence of income poverty by half before 2015 and a range of other social development objectives known as the Millennium Development Goals.

This report presents and applies a new approach to defining poverty levels by presenting a new set of poverty lines, which is rooted in an absolute measure of wellbeing linked to a minimum required nutritional intake. Such a Cost of Basic Needs (CBN) approach is becoming standard among statistical agencies throughout SADC and other developing countries but it has not been used for official statistics in Namibia before. A key feature of the analysis presented in this report is that it is based on international best-practices combined with an extensive national consultative process that has created broad consensus and ownership of the approach. It should be noted that the present report focuses on *poverty* as measured through the extensive expenditure data from the 2003/2004 Namibia Household Income and Expenditure Survey (NHIES) and therefore relies heavily on a money-metric approach to poverty measurement. Since poverty more generally is understood to be a complex phenomenon of multiple dimensions that go beyond the lack of income and money, the present analysis should be considered complementary to other approaches that focus on poverty in other domains. Moreover, the quantitative methodology outlined here could be fruitfully combined with qualitative approaches for a fuller understanding of poverty, its determinants and ways to overcome it.

The report is organised as follows: After this Introduction, Section 2 gives a short introduction to the new poverty line for Namibia; Section 3 presents a poverty profile with details on levels of poverty according to a range of economic, social and demographic variables and in Section 4, results from an analysis of household access to various facilities and ownership of assets are presented. In Section 5, some key determinants and drivers of poverty are discussed and in Section 6 issues of inequality and polarisation in the distribution of household expenditure are reviewed. Finally, Section 7 concludes. The intention has been to keep the main text as non-technical as possible in order to make it user-friendly for a wide audience. However, since a poverty assessment of this nature invariably involves a series of technical elements and methodological decisions, which need to be taken into account when discussing the results, the report includes a series of annexes with more detailed documentation of the approaches and results.

2. A new poverty line

The poverty line used in this report differs from previous practices in Namibia. In the past, the official poverty line was defined using the relative share of food expenditure to total expenditure of households.[1] This way a household was considered "poor" if food expenditure made up 60 percent or more of total expenditure. The household was classified as "severely poor" if food expenditure made up 80 percent or more of total expenditure. While it is generally accepted that the share of food expenditure rises with falling total expenditure, there are a number of methodological problems with the approach, especially when it comes to identifying the poorest households, and determining the cut-off points in the welfare distribution (see Annex B). In place of the food-share method, a more direct method to setting a poverty line is therefore adopted. This methodology is often referred to as the Cost of Basic Needs (CBN) approach and is used widely in the SADC region and in developing countries more generally. Under this approach the poverty line is set by first computing the cost of a food basket enabling households to meet a minimum nutritional requirement and then an allowance for the consumption of basic non-food items is added. Households with consumption expenditure in excess of this threshold are considered non-poor and households with expenditure less than the threshold are considered poor. The principal reason that the Central Bureau of Statistics uses consumption expenditure instead of income data is that household earnings can be highly irregular over time while expenditures tend to be more stable. Moreover, income is likely to be underreported for some groups and consumption measures are able to better capture the contribution from informal activities and own production, which make significant contributions to household welfare especially in developing countries and certainly in Namibia.

Setting up an absolute poverty line for Namibia using the CBN approach has been a fairly labour intensive process and has included a series of methodological steps. These steps are detailed in Annex C. In summary, the process of setting the poverty line began by establishing a food basket, which was determined by the actual consumption patterns of the households with low consumption levels (Annex D provides details of the contents of the food basket for purchased and in-kind items). The monetary value of attaining a minimum nutritional intake of 2,100 kcal in a low-income household was then computed based on available prices taking into account regional price differences, and this value then formed the food poverty line (N$ 127.15). While having sufficient resources in the household to meet food requirements is critical, it is not enough to classify a household as poor or non-poor. This is so because households that can afford to meet the food requirements of all members but lack resources to purchase clothing and shelter, for example, should be considered deprived in a very basic sense.

Two approaches for estimating the non-food components of the poverty line were used in the analysis: 1) Under the first approach, non-food expenditure was calculated from actual expenditure on non-food items by households where *food expenditure* is approxi-

[1] See details of the NHIES survey instrument in Annex A. See Annex B for an extensive overview of past and present poverty measures used in Namibia and other SADC countries.

mately equal to the food poverty line. This component is then added to the food poverty line. 2) Under the second approach, non-food expenditure is calculated from actual non-food expenditure of households whose *total expenditure* is equal to the food poverty line. Similarly, this component is then added to the food poverty line. The rationale for the latter, more austere approach is that if these households are able to obtain minimum food basket, but choose to divert resources to buy non-food items, then the household must clearly view these items as essential.

In the literature on poverty measurement, both methods are found to be methodologically sound and they are often considered together as a lower and upper bound, respectively (Ravallion 1998). In the subsequent poverty analysis for Namibia both measures are applied and should be interpreted as representing a range in poverty levels in the country. Households that have consumption expenditures below the upper bound poverty line are classified as "poor" and those with consumption expenditures below the lower bound poverty line are classified as "severely poor". Those households with consumption expenditure above the upper bound poverty line are considered "non-poor". Table 1 shows the values of the food poverty line as well as the upper and lower poverty lines for the 2003/2004 NHIES and Figure 1 illustrates the upper and lower poverty line in the actual distribution of household expenditure. The figure also illustrates how in the definition of "poor" and "severely poor", the latter is a subset of the former. The values of the poverty lines are expressed for households but in "adult equivalents" thus adjusting for differences in the age composition of household members (see Annex C for more details on this adjustment).

Table 1: Annual values of national poverty lines, monthly N$ per capita

Poverty line	2003/2004
Food poverty line	127.15
Lower bound poverty line: "severely poor"	184.56
Upper bound poverty line: "poor"	262.45

Once the poverty lines have been determined, the final step is to select the measures to express the shortfall and deprivation. As has become standard in poverty research, the analysis presented for Namibia follows Foster, Greer and Thorbecke (1984) by using the most common of the so-called Foster-Greer-Thorbecke (FGT) class of poverty measures.

These are:

- The *headcount index* or incidence of poverty. This is the most commonly used and the easiest of the three measures to interpret. It shows the proportion of the population or households that are below a given poverty line and is usually expressed as a percentage of the total population or number of households.

- The *poverty gap index* measures the depth of poverty given by the distance or gap between actual total expenditure of poor households and the poverty line. This

measure can be thought of as the percentage of the poverty line needed to bring those below the threshold up to the poverty line.

- The *poverty severity index* gives more weight to the shortfall in consumption expenditure further below the poverty line. This index is thus sensitive to the inequality among the poor. The index will rise with inequality within the group of poor.[2]

Household expenditure

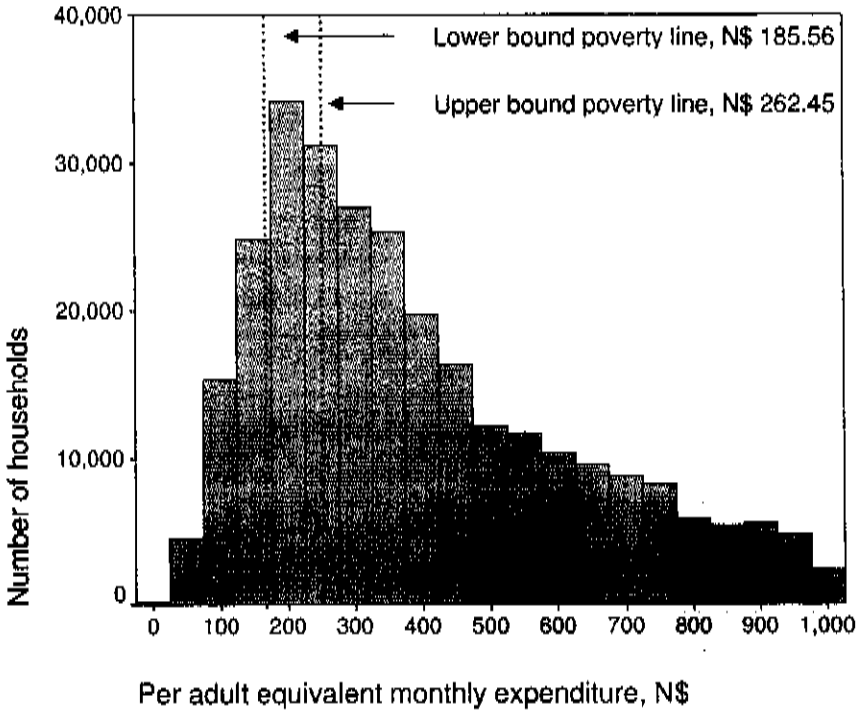
That poorer households divert a substantial share of their total expenditures to food is evident from Table 2, which presents a breakdown of expenditures for different categories of expenditure by consumption expenditure quintiles. The table shows how the relative share of food expenditure falls as expenditure increases. Among the 20 percent of households with the lowest consumption expenditure (quintile I), 56.7 percent of total expenditure is devoted to food compared to just 13.2 percent in the 20 percent of households with the highest consumption expenditure (quintile V).

The share of expenditure devoted to housing and utilities, and clothing and footwear, is rather stable across the distribution. For remaining expenditure categories, the shares increase with expenditure. For instance, the share of expenditure devoted to transportation in the 20 percent of households with the lowest consumption expenditure is 2.3 percent compared to 19.9 percent in the 20 percent of households with the highest consumption expenditure. This pattern can be explained by the larger share of subsistence farmers and pensioners among the poorest households (explored further below) while non-poor households are often wage earners who are more likely to have commuting needs and certainly have a greater degree of ownership of motor vehicles. Expenditure shares on education and health are also double or more in the wealthier households. This is probably the result of a combination of factors including the waiver system for the payment of School Development Fees for the poorest households and the ability of wealthier households to afford private education. For the poorest 20 percent of households, a total of 80 percent of expenditure is devoted to food and shelter. The third largest share is devoted to clothing and footwear and thus only minor shares are available for education and health care.

In summary, while the expenditure patterns of the wealthier households are more balanced across the expenditure categories, the groups with the lowest levels of consumption expenditure concentrate most of that expenditure covering basic needs especially food. However, these households also divert a significant share of their expenditure towards non-food items. As described above, the CBN approach to setting the poverty line ensures that both food and non-food items are catered for when determining the basic needs of households.

[2] See Annex C for more details on the FGT measures.

Figure 1: Distribution of NHIES expenditure and the poverty lines, 2003/2004



Note: Horisontal axis truncated to the right to enhance clarity.

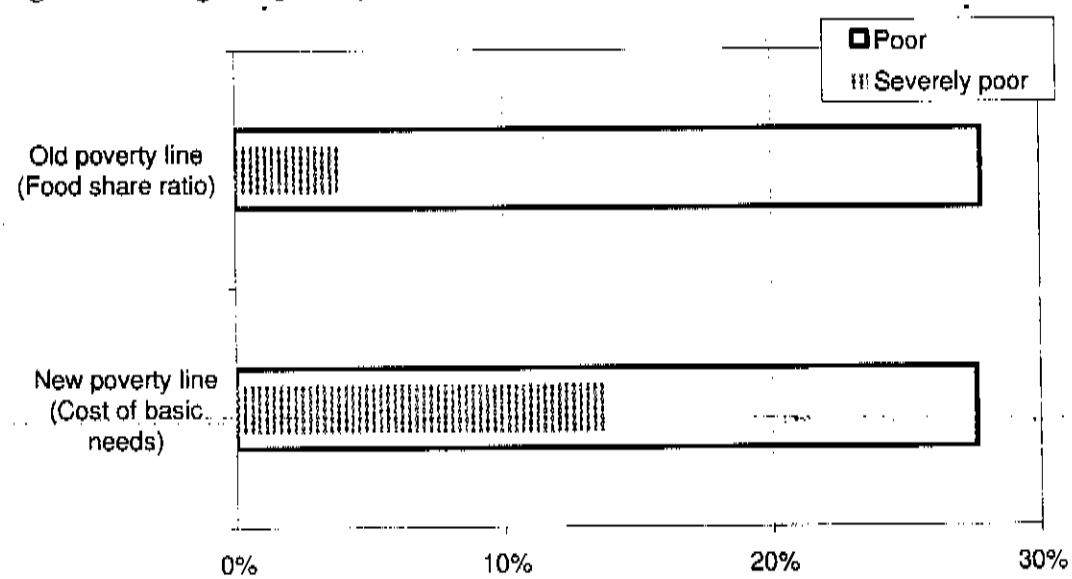
Table 2: Expenditure shares by quintiles

	Quintiles of adult equivalent expenditure					
Annual household expenditure on:	**I**	**II**	**III**	**IV**	**V**	**Total**
Food	56.7	54.8	46.8	33.5	13.2	26.3
Housing, including utilities	23.4	21.0	20.4	20.6	24.4	23.0
Transport	2.3	2.9	4.9	9.9	19.9	14.1
Furniture and equipment	3.7	4.9	7.4	8.9	10.6	9.1
Clothing and footwear	6.6	7.6	8.0	8.7	5.1	6.3
Recreation, entertainment and sport	0.5	0.8	1.2	2.1	5.0	3.5
Communication	0.8	1.3	2.0	3.0	3.9	3.1
Education	1.5	1.3	1.8	2.5	3.6	2.9
Health care	1.2	1.3	1.4	1.7	2.2	1.9
Accommodation services	0.1	0.1	0.2	0.2	0.7	0.5
Miscellaneous expenditure	3.1	4.0	5.7	8.9	11.3	9.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number of households in sample	1,904	1,889	2,009	2,143	1,856	9,801
Weighted number of households	74,306	74,376	74,344	74,304	74,346	371,678

3. Poverty profile

In this section, the poverty lines for those that are "poor" and those that are "severely poor" are used to draw a consumption expenditure-based income poverty profile for Namibia. This profile describes the two overlapping categories of poor households according to a range of economic, social and demographic variables, and makes comparisons with the category of "non-poor" households. In the bi-variate analysis, the poverty status of households is compared with background variables one by one. This type of analysis is particularly suited for identifying where the poor live and is important for targeting of poor households. A subsequent section will use multivariate analysis to account for the simultaneous effects of several variables and explore the determinants of poverty. It should be noted that the poverty profile is purely descriptive and that causality cannot be inferred from the correlations. Simplified tables and graphs have been included to bring out some of the main results but a more detailed set of tables are included in the Annex F.

Figure 2: Changes in poverty levels as a result of the revised poverty line, 2003/2004



	New poverty line (Cost of basic needs)	Old poverty line (Food share ratio)
Poor	27.6%	27.8%
Severely poor	13.8%	3.9%

Note: Under the old poverty line "poor" households where identified as those spending 60 percent or more of their total expenditure on food, and "severely poor" households as those spending 80 percent or more. Under the new approach to setting a poverty line "poor" households are those that have monthly expenditures of less than N$ 262.45 per adult equivalent, and "severely poor" households as those with expenditures of less than N$ 184.56.

Figure 2 compares the poverty incidence that resulted from the old method of setting the poverty line using the food-share ratios of 60 and 80 percent for poor and severely poor, respectively, with the new measure based on the Cost of Basic Needs (CBN) approach. As can be seen, the two methods arrive at very similar results when it comes to the incidence of poor; 27.8 for the food-share ratio (60%) and 27.6 for the new CBN-based poverty line (upper bound). However, there are important changes in the composition of the poor households, e.g. the share of urban poor households almost doubles using the new measure. Moreover, the revision in the method for setting the poverty line has a significant impact on the classification of severely poor. Using the food-share method (80% and above), 3.9 percent of households are classified as severely poor whereas the share is more than three times higher, 13.8 percent, under the new method using the (lower bound) poverty line. Clearly this does not imply that the incidence of severely poor has increased over time but simply that in comparison, the old method underestimated the incidence of the poorest among the poor. In effect, these new figures represent *revisions* of the official poverty figures for Namibia. The figure also illustrates how the group of severely poor form a sub-set of the poor. Therefore, in general when reference is made to poor households these also include severely poor ones.

Table 3: Incidence, depth and severity of poverty by households, 2003/2004

	Incidence (P0)	Depth (P1)	Severity (P2)
Poor	27.6 %	8.9 %	4.1
Severely poor	13.8 %	3.9 %	1.7

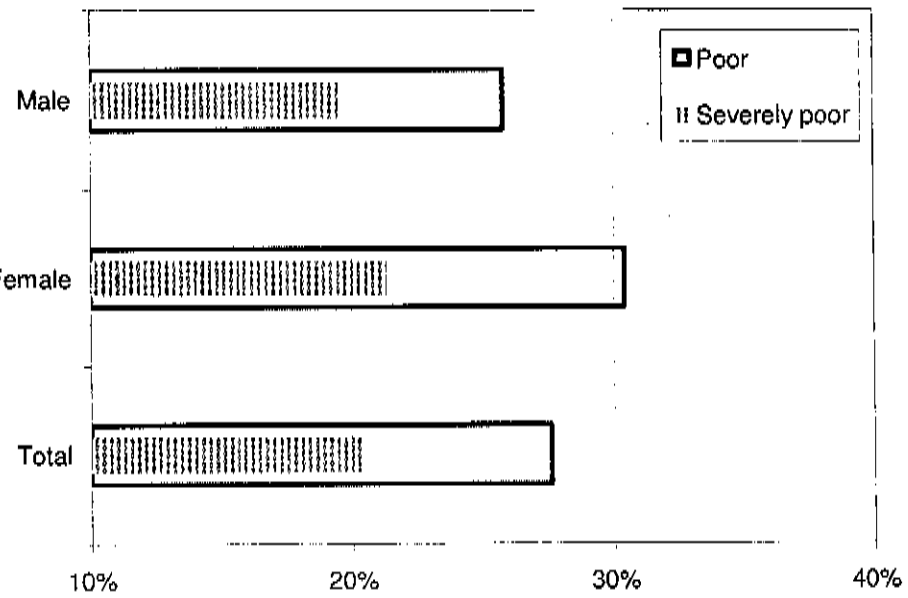
Table 3 presents the results of the three FGT measures using the two poverty lines for poor and severely poor households. As noted already, the incidence of poor households is 27.6 percent and 13.8 percent for severely poor households. In these households the adult equivalent expenditures are too low to cover the basic food and non food needs on which the poverty lines are based. The depth of poverty among poor households is 8.9 percent, which indicates that on average households are 8.9 percent below the upper bound poverty line. Similarly, households are on average 3.9 below the lower bound poverty line. The severity of poverty gives a higher weight to the poorest of the poor and this measure is particularly useful in tracking developments over time and comparing deprivation between regions. In the detailed tables in Annex F, the three measures of poverty are presented for each of the poverty lines.

Poverty incidence by sex and age

Figure 3 shows the correlation between the incidence of poverty and the sex of the head of household. Among households headed by females, 30.4 percent are poor and 15.1 percent are severely poor. This is higher than for male-headed households where 25.8 and 12.9 percent are poor and severely poor, respectively. In Annex I, confidence intervals using the conventional levels are reported for most of the poverty incidence estimates. Given the overlapping values for male- and female-headed households when it comes to the lower bound poverty line, it can be concluded on the basis of Table I-3 that there is no significant difference in the incidence of severely poor households by sex of the head of

household. However, with the confidence intervals *not* overlapping when it comes to the upper bound poverty line, it can be concluded that the incidence of poor households is significantly higher among those headed by females. The multivariate analysis later confirms that when controlling for differences in education, sources of income and other factors female-headed households have lower incomes and face a higher probability of being poor than male-headed households. Moreover, the gender differences may be even greater in reality as the NHIES data do not reveal potentially important inequalities *within* the household.

Figure 3: Incidence of poverty by sex of head of household, 2003/2004

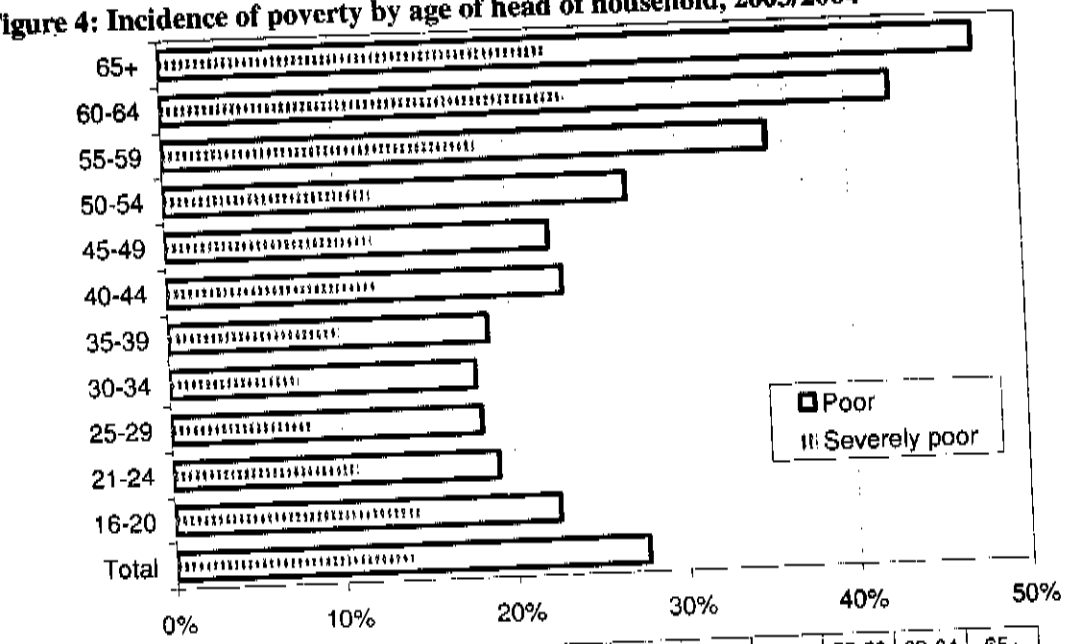


	Total	Female	Male
Poor	27.6%	30.4%	25.8%
Severely poor	13.8%	15.1%	12.9%

Differences in poverty status and age levels of the head of household are presented in Figure 4. Among those households with heads of household aged 16-20 years, 22.5 percent are poor and 14.4 percent are severely poor. This compares with the national average for all age groups of 27.6 percent poor and 13.8 severely poor. Those aged 30-34 have the lowest shares of poor and severely poor, 17.9 and 7.5 percent, respectively. From then on, the share of poor increases steadily. Among those aged 65 and older, the incidence of poor is 47.5 percent and the incidence of severely poor is 22.7 percent. The average age of heads of households in Namibia at the time of the survey was just under 47 years. However, the average age of the household head among poor households was 53 years compared to 44 years among non-poor households. One hypothesis that could explain the differences in poverty levels by age groups is that those in the ages 25-39 are more likely to hold salaried jobs, which in turn is associated with a lower probability of household poverty (further explored below). Moreover, at higher age levels household heads are often reliant on a pensions as a main income source, which in turn is an important determi-

nant of higher probability of the household being poor (also explored further below). The levels of depth and severity of poverty are also higher for the older age groups.

Figure 4: Incidence of poverty by age of head of household, 2003/2004

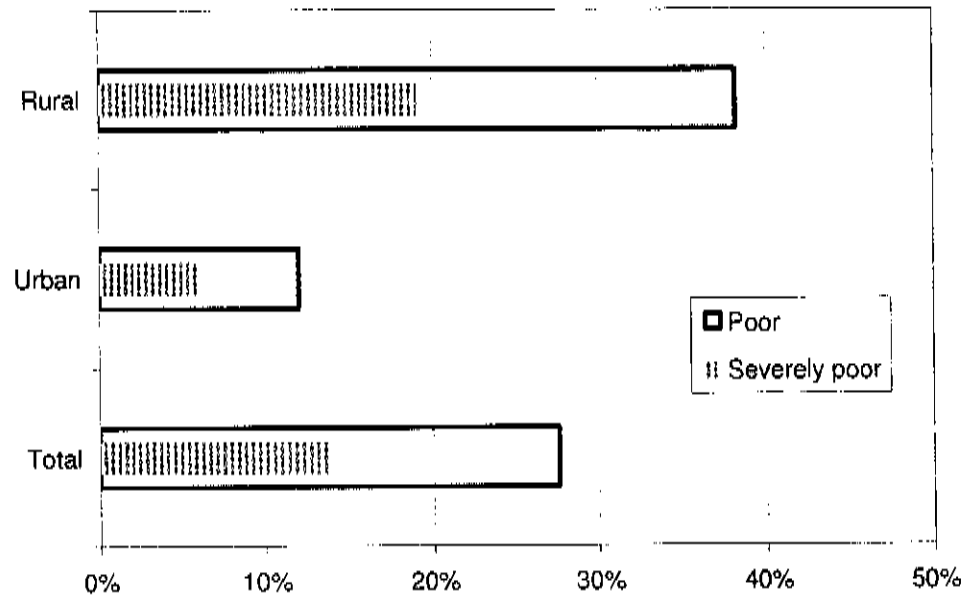


	Total	16-20	21-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+
Poor	27.6%	22.5%	19.1%	18.2%	17.9%	18.7%	23.1%	22.4%	27.0%	35.4%	42.6%	47.5%
Severely poor	13.8%	14.4%	10.8%	8.3%	7.5%	10.0%	12.4%	12.1%	12.1%	18.3%	23.6%	22.7%

Poverty incidence by locality and region

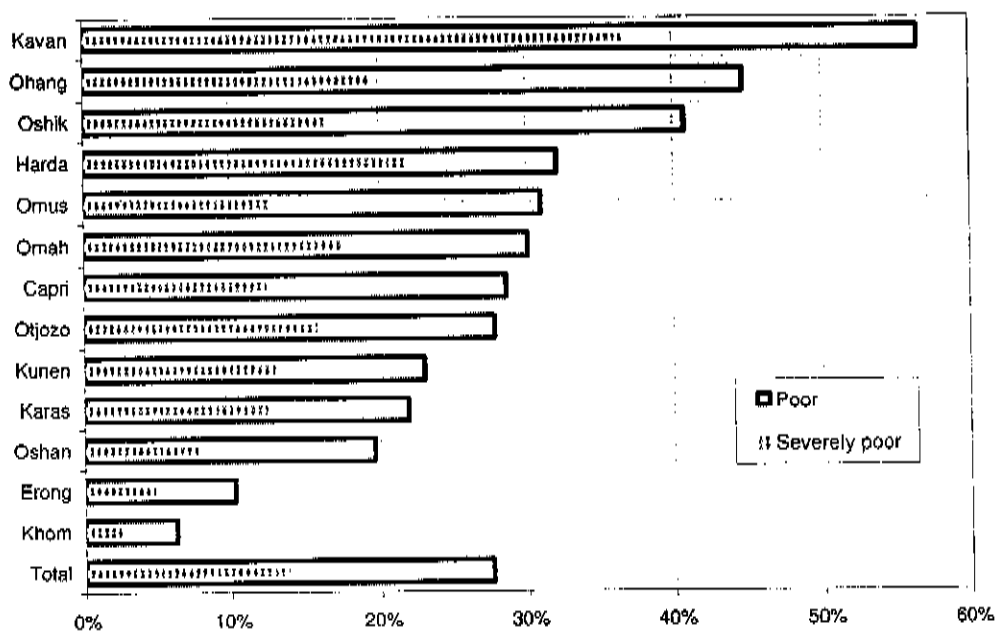
Poverty incidence varies greatly between the administrative regions of Namibia and between urban and rural areas as reflected in Figure 5 and Figure 6. The incidence of poor households in the rural areas is 38.2 percent compared to 12 percent in urban areas. Moreover, 19.1 percent of households in rural areas are severely poor compared to 6 percent in urban areas. As indicated by Table I-1 in Annex 1, these differences are statistically significant. Among the regions, the highest incidence of poverty is in the Kavango region where 56.5 are poor and 36.7 percent are severely poor. In Ohangwena, the incidence of poor and severely poor households is 44.7 and 19.3 percent, respectively. Poverty incidence is lowest in Khomas and Erongo with 6.3 and 10.3 percent, respectively. The measure for the depth of poverty is 23 percent in Kavango and 13.1 percent in Hardap (see Table F-1 in Annex F).

Figure 5: Incidence of poverty by locality of household, 2003/2004



	Total	Urban	Rural
Poor	27.6%	12.0%	38.2%
Severely poor	13.8%	6.0%	19.1%

Figure 6: Incidence of poverty by region, 2003/2004

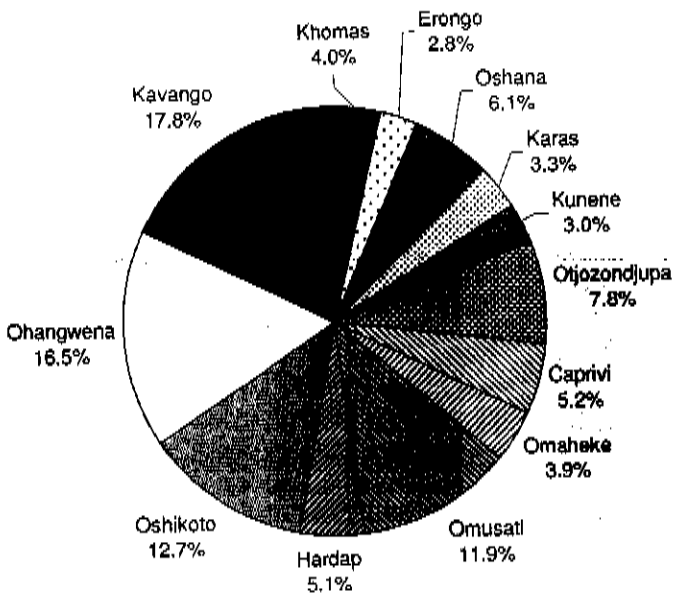


	Total	Khom	Erong	Oshan	Karas	Kunen	Otjozo	Capri	Omah	Omus	Harda	Oshik	Ohang	Kavan
Poor	27.6%	6.3%	10.3%	19.6%	21.9%	23.0%	27.8%	28.6%	30.1%	31.0%	32.1%	40.8%	44.7%	56.5%
Severely poor	13.8%	2.4%	4.8%	7.8%	12.5%	13.1%	15.8%	12.5%	17.5%	12.8%	21.9%	16.6%	19.3%	36.7%

Given the differences in the sizes of the populations between the regions, it is useful to look at the poverty shares in addition to the incidence of poverty. The poverty share is computed based on the *total* number of poor households and poverty shares by region are presented on Figure 7. The figure shows that Kavango and Ohangwena regions not only have the highest levels of incidence of poverty, but they also have the largest shares of poor households. Those two regions are home to 17.8 and 16.5 percent, respectively of all the poor households in Namibia. In other words, of all poor households in Namibia, more than one third live in Kavango and Ohangwena. Add Oshikoto and Omusati and those four regions combined account for almost 60 percent of all poor households in the country.

Additional tests on the sensitivity of the poverty lines show that the ranking of Kavango and Ohangwena as the regions with the highest incidence of poverty is quite robust to changes in the value of the poverty line. The same goes for Khomas and Erongo, which are ranked lowest when it comes to poverty incidence. However, the ranking of other regions is more sensitive to the specification of the poverty line (see Figure E-5 in Annex E). This is important in such cases where planning decisions and budget allocations are made on the basis of ranking of regions and for which special care should be taken in ascertaining the robustness of such rankings.

Figure 7: Poverty shares by region, 2003/2004



Poor households tend to be larger in terms of the number of people than non-poor households. Severely poor households are even larger. Table 4 shows that the average household size is Namibia is 4.9 persons with 4.2 on average in urban areas and 5.4 in rural areas. Among households classified as poor, the average household size is 6.7 compared to 4.2 for non-poor households. For households that are severely poor, the average size is

7.2. Households are also bigger on average among rural poor than among urban poor. Highest above the national average are severely poor households in Kunene with an average of 8.6 household members. The farthest below the national average are the non-poor households in Erongo with an average of 3.4 household members.

Table 4: Average size of households by region and locality according to poverty status, 2003/2004

	Severely poor	Poor	Non-poor	Total
Caprivi	6.4	5.9	4.1	4.6
Erongo	5.7	5.0	3.4	3.6
Hardap	5.8	5.5	3.6	4.2
Karas	6.9	6.0	3.5	4.0
Kavango	7.7	7.3	5.3	6.4
Khomas	5.7	5.2	3.9	4.0
Kunene	8.6	7.4	3.8	4.6
Ohangwena	8.4	7.8	5.0	6.3
Omaheke	6.5	5.8	3.5	4.2
Omusati	7.0	7.1	5.1	5.7
Oshana	7.2	7.0	5.0	5.4
Oshikoto	7.0	6.5	4.6	5.4
Otjozondjupa	6.8	6.1	3.7	4.3
Namibia	**7.2**	**6.7**	**4.2**	**4.9**
Urban	6.5	6.0	4.0	4.2
Rural	7.3	6.9	4.5	5.4

Table 5: Average number of children under 18 in households by region and locality according to poverty status, 2003/2004

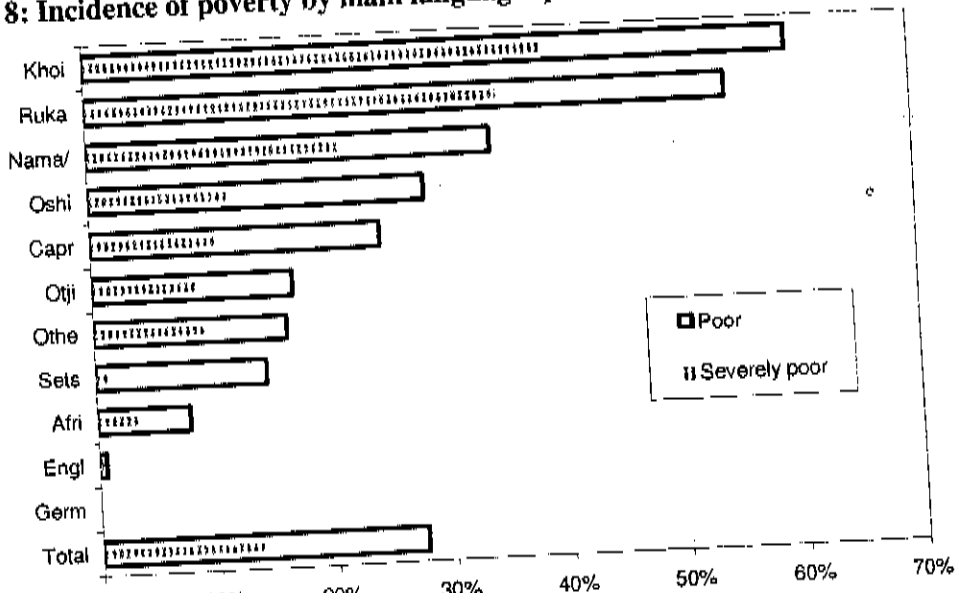
	Severely poor	Poor	Non-poor	Total
Caprivi	3.5	3.1	1.9	2.2
Erongo	2.9	2.2	1.1	1.2
Hardap	3.0	2.7	1.4	1.8
Karas	3.3	2.8	1.1	1.5
Kavango	4.2	4.1	2.6	3.5
Khomas	2.3	1.8	1.2	1.3
Kunene	5.1	4.1	1.7	2.2
Ohangwena	4.9	4.5	2.6	3.5
Omaheke	3.3	2.9	1.3	1.8
Omusati	3.8	3.9	2.7	3.0
Oshana	3.7	3.7	2.3	2.6
Oshikoto	3.8	3.6	2.3	2.8
Otjozondjupa	3.5	3.0	1.5	1.9
Namibia	**3.9**	**3.6**	**1.8**	**2.2**
Urban	3.0	2.6	1.4	1.6
Rural	4.1	3.8	2.2	2.8

Poorer households tend to be larger because they are home to more children than non-poor households. Table 5 shows the average number of children under the age of 18 by household poverty status in the various regions and localities of the country. Among all households in Namibia, the average number of children is 2.2. Among non-poor households, the number is 1.8 and double, 3.6, in poor households. In households classified as severely poor, the average number of children is even higher at 3.9. The lowest average number of children per household is found among non-poor households in Erongo and Karas where the average number is 1.1. The highest number is among severely poor households in Kunene where there are an average of 5.1 children in the household.

Poverty incidence by language group

In the NHIES, respondents are asked about the main language spoken in the household. Figure 8 presents the results of poverty incidence by language groups. Among those households where Khoisan is the main language spoken, the incidence of poverty is 59.7 percent and the incidence of severe poverty is 39 percent or more than double the national averages. Similar high levels of both poverty and severe poverty are found among speakers of Rukavango languages. Moreover, Khoisan and Rukavango-speaking households have the highest values for poverty depth (see Table F-3 in Annex F). Households where the main language is Khoisan are on average 24.9 percent below the threshold for poor households. For Rukavango-speaking households, it is 21.8 percent. Households with Nama/Damara as the main language also have an incidence and depth of poverty that is significantly above the national average. Conversely, the levels of poverty among households where English and German are the main languages are less than 1 percent.

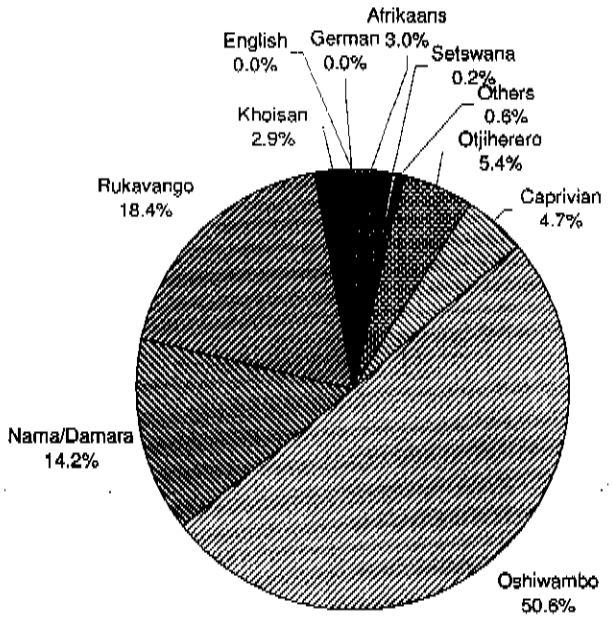
Figure 8: Incidence of poverty by main language spoken in household, 2003/2004



	Total	Germ	Engl	Afri	Sets	Othe	Otji	Capr	Oshi	Nama/	Ruka	Khoi
Poor	27.6%	0.0%	0.6%	7.9%	14.5%	16.4%	17.0%	24.6%	28.5%	34.2%	54.4%	59.7%
Severely poor	13.8%	0.0%	0.4%	3.5%	1.0%	9.6%	8.8%	10.8%	11.8%	21.4%	34.9%	39.0%

Another way of looking at the poverty levels among the language groups is by poverty share, which takes into account the size of the population groups and indicates how much each group contributes to the total number of poor. Poverty shares by language group are presented in Figure 9. This way even if Khoisan has the highest incidence of poverty, it is a relatively small group, less than 5000 households, and thus the group as a whole accounts for 2.9 percent of all the poor households in Namibia. On the other hand, even if poverty incidence in Oshiwambo-speaking households is 28.5 percent, and thus just above the average for Namibia, since it is the largest of all the language groups, it also has the highest share of all poor in the country, 50.5 percent. The fact that the language groups differ tremendously in size as well as in their level of deprivation is important for policy makers since reducing overall levels of poverty among the smaller more deprived groups will require more targeted efforts compared to more broad-based initiatives to reduce poverty.

Figure 9: Poverty shares by main language spoken in household, 2003/2004

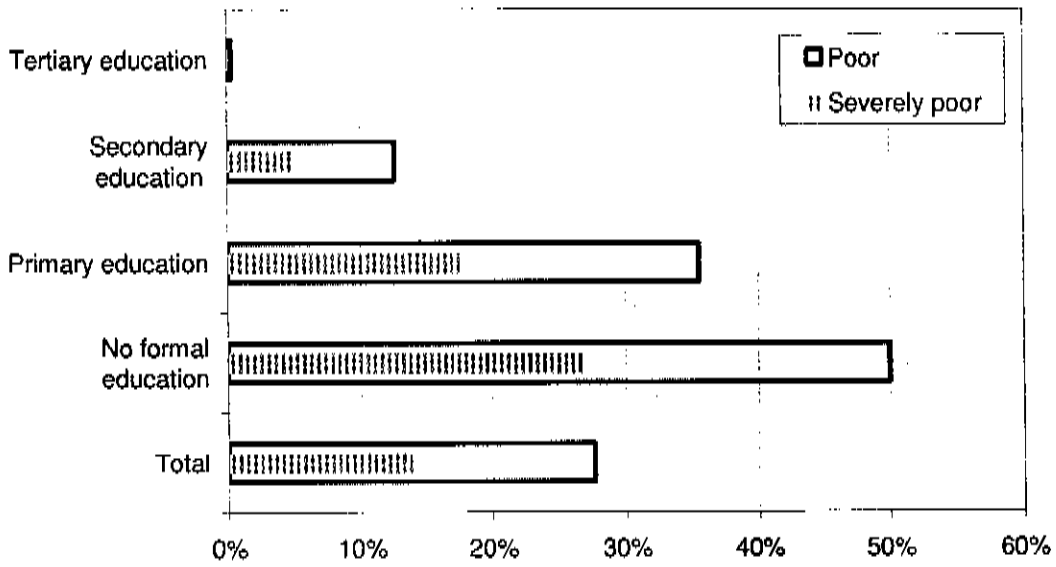


Poverty incidence by education and income source

The results of the poverty profile provide further evidence to the critical role of education in explaining poverty status of households. Figure 10 shows the incidence of poverty by educational attainment of the head of household. Among those with no formal education, 50 percent are poor and 26.7 percent are severely poor. On average, these households have total consumption expenditure levels that are 17.2 percent below the national threshold for poor households. The situation improves as education levels increase. Among those who have finalised their secondary education, 12.6 or less than half the national average, are poor and 5.1 percent are severely poor. Poverty among those who hold a tertiary degree is virtually non-existent. Of all poor households, 83.5 percent have a

head of household that has either no formal education or has only completed primary school.

Figure 10: Incidence of poverty by education attainment of head of household, 2003/2004

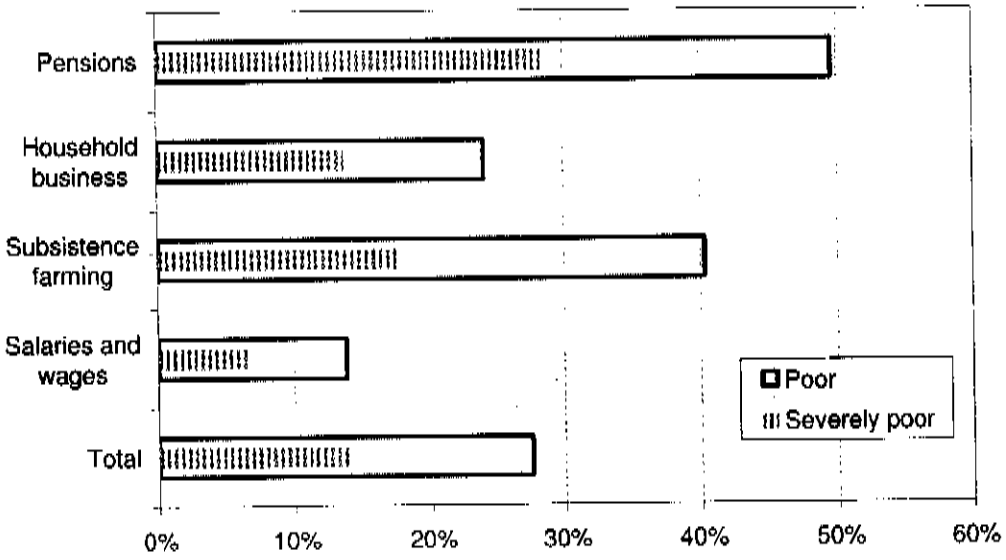


	Total	No formal education	Primary education	Secondary education	Tertiary education
Poor	27.6%	50.0%	35.5%	12.6%	0.4%
Severely poor	13.8%	26.7%	17.7%	5.1%	0.1%

Since the poverty measure used in this analysis is based on a consumption-based measure of poverty, it is closely associated with occupation and the main source of income for households as shown in Figure 11. Households that rely on salaries and wages as their main source of income have an incidence of both poor and severely poor that is less than half of the national average. Still, since this group is so large—46 percent of all households have salaries and wages as their main source of income—that it makes up 23.1 percent of all poor. In other words, a salaried income is by no means a guarantee of a life above the poverty line in Namibia. Among households that rely on subsistence farming as their main source of income, 40.3 percent are poor and 17.6 percent are severely poor. These households also make up 42.3 percent of all poor households.

Among those relying on pensions as their main source of income, 49.6 percent are poor and 28.4 percent are severely poor. These households are larger with an average of 5.3 people in them and thus a greater number of people other than the pension recipient rely on the pension as the main source of income. Households where the main source of income is salaries and wages have 4.2 members and the head of these households is on average 39.5 years. Unsurprisingly, households that rely on pensions are generally older—on average the head of these households is 69.3 years old—compared to the national average of 46.9 years (Table 6).

Figure 11: Incidence of poverty by main source of income, 2003/2004 (%)



	Total	Salaries and wages	Subsistence farming	Household business	Pensions
Poor	27.6%	13.8%	40.3%	24.1%	49.6%
Severely poor	13.8%	6.6%	17.6%	13.7%	28.4%

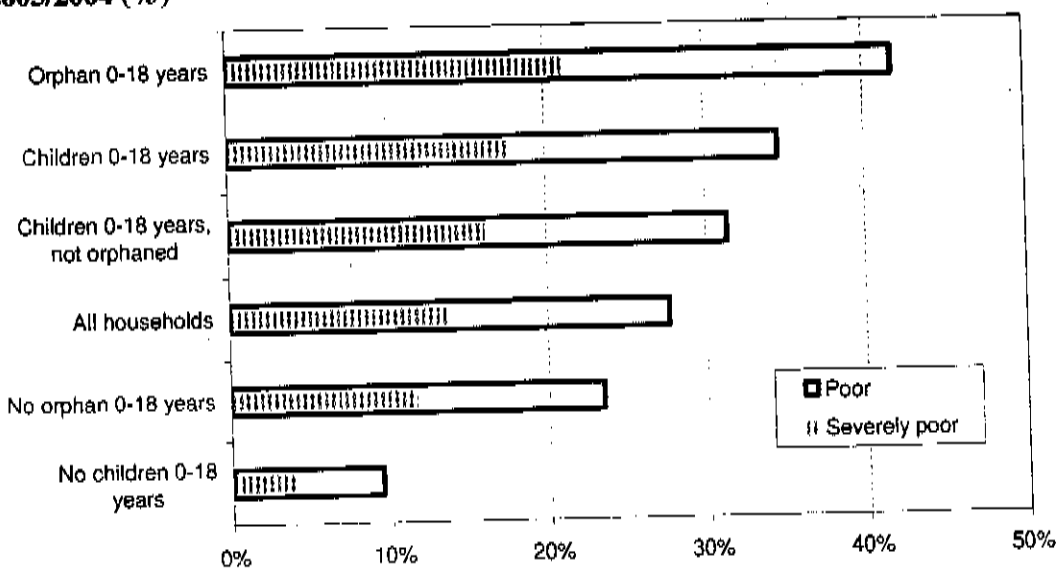
Table 6: Household main income source and average age of households head and average size

Main source of income	Average age of head of household	Average household size
Pensions	69.3	5.3
Non-Farming Business Activities	40.4	4.7
Subsistence Farming	54.7	6.2
Salaries/Wages	39.5	4.2
All sources	46.9	4.9

Namibia is home to a growing number of orphans principally due to the increased mortality associated with the AIDS epidemic (Ministry of Health and Social Services 2001). According to estimates based on the NHIES, a total of 85,000 households have either a single or double parent orphan aged 0-17 years (i.e. one or both biological parent(s) is/are not alive). Figure 12 shows the incidence of poor and severely poor by categories of households with and without children and with and without orphans. The incidence of poverty among households where there is at least one orphan is 41.8 percent, compared to the national average of 27.6 and to 9.4 percent in households without any children aged 0-17. The share of severely poor households is 21.1 percent among households with at least one orphan, compared to 13.8 percent for all households and 3.9 percent among

households without any children. Households with children also have higher levels of poverty incidence even if these children are not orphaned. No conclusions about causation can be drawn on the basis of this analysis, e.g. that poverty leads households to have more children or that households are poor because they have more children, but it can be concluded that the presence of children and especially orphans should be highly effective criteria in public policy interventions that aim to target poor households.

Figure 12: Incidence of poverty for households with children and orphans, 2003/2004 (%)



	No children 0-18 years	No orphan 0-18 years	All households	Children 0-18 years, not orphaned	Children 0-18 years	Orphan 0-18 years
Poor	9.4%	23.4%	27.6%	31.4%	34.6%	41.8%
Severely poor	3.9%	11.7%	13.8%	16.1%	17.7%	21.1%

4. Household assets and living conditions

The following analysis shows how monetary poverty is correlated to deprivation in a range of other domains, including household assets, distance and access to facilities, physical housing features and utilities, and other living conditions. The section underscores the multi-dimensional aspects of poverty in that deprivation in one dimension is often associated with deprivation in other dimensions. This analysis also focuses on one-to-one relationships between poverty status and different household conditions, and again the focus is on simple statistical correlations and not underlying causes.

Household assets

Table 7 shows the correlation between the ownership of a range of household and agricultural assets and the level of consumption expenditure in the household. Generally, the higher level of consumption expenditure, the higher the share of households that own a particular household asset. For instance, 60.4 percent of households in quintile I (i.e. the 20 percent of households with the lowest consumption expenditure) own a radio compared to 86.1 percent in quintile V (i.e. the 20 percent of households with the highest consumption expenditure). Moreover, 4.0 percent of households in the lowest quintile own a refrigerator compared to 79.5 percent in the highest quintile. Similarly, only 1.5 percent of households in the lowest quintile own a motor vehicle compared to 60.6 percent in the highest quintile. In quintile V, 25 percent of households own a computer while for all other quintiles it is less than 2 percent.

Table 8 compares the ownership of and access to various agricultural assets across the categories of severely poor, poor and non-poor households. Among the non-poor households, 34.2 percent own cattle and 37.6 percent own goats. Among the poor and severely poor, 32.4 and 29.7 percent, respectively own cattle. Ownership of goats is higher among poor and severely poor households than among non-poor households. Ownership of field for crops is also higher among poor and severely poor households, 34.7 and 35.4 percent, respectively. The communal land tenure system that is dominant in the northern regions of Namibia explains the large proportions of both poor and non-poor households, 29.1 percent, that do not own but have access to land. Ownership of and access by households to a plough is higher among poor households compared to both severely poor and non-poor households.

Table 7: Asset ownership by quintiles of monthly expenditure per adult equivalent

Owns asset	Quintiles of adult equivalent expenditure					Total
	I	II	III	IV	V	
Household assets						
Radio	60.4	67.6	68.9	74.1	86.1	71.4
Stereo HiFi	3.5	8.6	15.2	29.5	65.3	24.4
Tape Recorder	9.7	15.2	19.3	32.6	62.9	27.9
Television	4.5	10.5	18.1	36.9	75.6	29.1
Satellite dish	0.2	0.3	0.7	3.7	36.4	8.3
Video cassette recorder/DVD	0.6	1.4	3.4	10.4	47.3	12.6
Telephone/Cell phone	5.0	12.8	23.4	43.5	82.8	33.5
Refrigerator	4.0	9.4	19.8	38.9	79.5	30.3
Stove, gas or electric	10.4	20.0	34.1	59.9	88.2	42.5
Microwave	0.1	1.0	2.6	8.3	46.5	11.7
Freezer	1.4	4.6	9.9	21.9	58.4	19.3
Washing machine	0.9	1.9	4.8	11.9	49.8	13.9
Motor vehicle	1.5	3.6	8.1	18.6	60.6	18.5
Motor cycle/Scooter	0.2	0.4	0.1	0.5	4.2	1.1
Sewing/Knitting machine	9.6	12.1	13.4	15.7	28.7	15.9
Bicycle	8.7	14.4	14.2	15.5	25.4	15.6
Computer	..	0.1	0.3	1.7	25.0	5.4
Internet service	..	0.1	..	0.2	13.7	2.8
Canoe/Boat	2.2	2.1	1.3	1.1	1.0	1.5
Motorboat	..	0.1	0.1	..	1.1	0.3
Camera	1.5	3.4	6.9	13.0	44.3	13.8
Agricultural assets						
Donkey cart/Ox cart	10.0	10.5	9.0	6.6	5.4	8.3
Plough	27.4	34.9	25.4	17.0	8.3	22.6
Tractor	0.4	0.1	0.4	0.8	4.6	1.3
Wheelbarrow	9.9	16.2	18.6	20.1	30.6	19.1
Grinding mill	0.2	1.0	1.1	1.8	5.1	1.9
Cattle	31.2	37.9	34.8	34.6	30.0	33.7
Sheep	3.5	4.3	5.9	6.9	11.6	6.4
Pig	16.6	23.1	17.6	10.4	3.7	14.3
Goat	40.5	48.0	41.9	37.9	26.8	39.0
Donkey/mule	19.9	23.4	19.6	14.1	9.5	17.3
Horse	4.2	3.7	4.1	5.6	9.4	5.4
Poultry	61.1	66.4	55.8	38.3	21.5	48.6
Ostrich	0.1	0.2	0.2	0.2	1.5	0.4
Grazing land	2.2	3.4	3.1	5.2	9.4	4.7
Field for crops	35.7	30.8	26.7	19.9	12.5	25.1

Table 8: Incidence of poverty by ownership/access to agricultural assets, 2003/2004 (%)

	Severely poor	Poor	Non-poor	Namibia
Owns or has access to cattle				
Owns	29.7	32.4	34.2	33.7
Does not own, but has access	10.0	10.0	5.9	7.1
Neither owns nor has access	60.1	57.5	59.8	59.1
Not stated	0.1	0.1	0.1	0.1
Total	100.0	100.0	100.0	100.0
Owns or has access to goat				
Owns	37.9	42.7	37.6	39.0
Does not own, but has access	2.6	2.9	3.9	3.6
Neither owns nor has access	59.2	54.1	58.4	57.2
Not stated	0.4	0.3	0.1	0.2
Total	100.0	100.0	100.0	100.0
Owns or has access to field for crops				
Owns	35.4	34.7	21.5	25.1
Does not own, but has access	28.9	34.7	27.0	29.1
Neither owns nor has access	35.2	30.2	51.3	45.5
Not stated	0.5	0.4	0.2	0.3
Total	100.0	100.0	100.0	100.0
Ownership/access to plough				
Owns	25.3	30.0	19.8	22.6
Does not own, but has access	18.5	18.8	10.7	13.0
Neither owns nor has access	55.8	50.9	69.1	64.1
Not stated	0.4	0.3	0.3	0.3
Total	100.0	100.0	100.0	100.0

Among all Namibian households, 71.4 percent own a radio while an additional 13.1 have access to one (Table 9). Ownership is higher among the non-poor households where 75.3 percent own a radio, than in poor and severely poor households where 61.2 and 59.0 percent, respectively claim ownership. Much more unequal is the ownership of telephones. Among non-poor households, 44 percent own a telephone (including cell phones) compared to 5.9 and 4.6 percent among poor and severely poor households, respectively. Poor and non-poor households claim higher rates of access, rather than ownership, for instance through borrowing or public phones. However, among both poor and severely poor households, more than half, 53.7 and 57.7 percent respectively, neither own nor have access to a telephone.

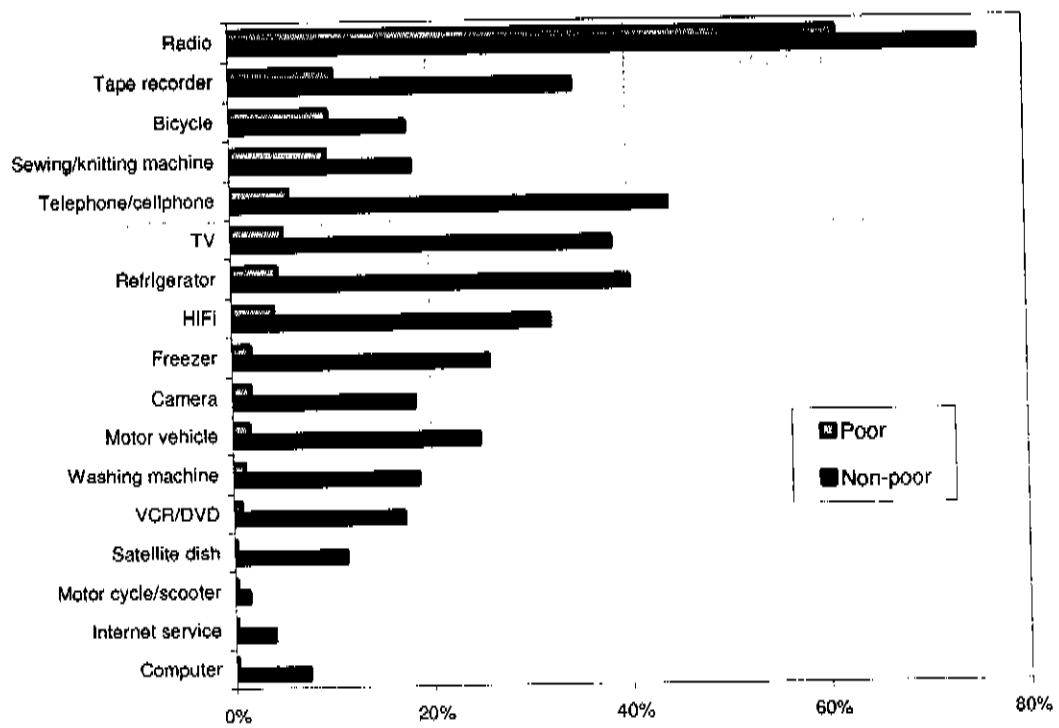
Table 9: Incidence of poverty by ownership/access to radio, 2003/2004 (%)

	Severely poor	Poor	Non-poor	Namibia
Owns	59.0	61.2	75.3	71.4
Does not own, but has access	19.6	19.0	10.9	13.1
Neither owns nor has access	21.3	19.6	13.6	15.3
Not Stated	0.1	0.2	0.1	0.1
Total	100.0	100.0	100.0	100.0

Table 10: Incidence of poverty by ownership/access to telephone/cell phone, 2003/2004 (%)

	Severely poor	Poor	Non-poor	Namibia
Owns	4.6	5.9	44.0	33.5
Does not own, but has access	37.4	40.4	30.5	33.3
Neither own nor has access	57.7	53.4	25.2	33.0
Not stated	0.4	0.4	0.2	0.3
Total	100.0	100.0	100.0	100.0

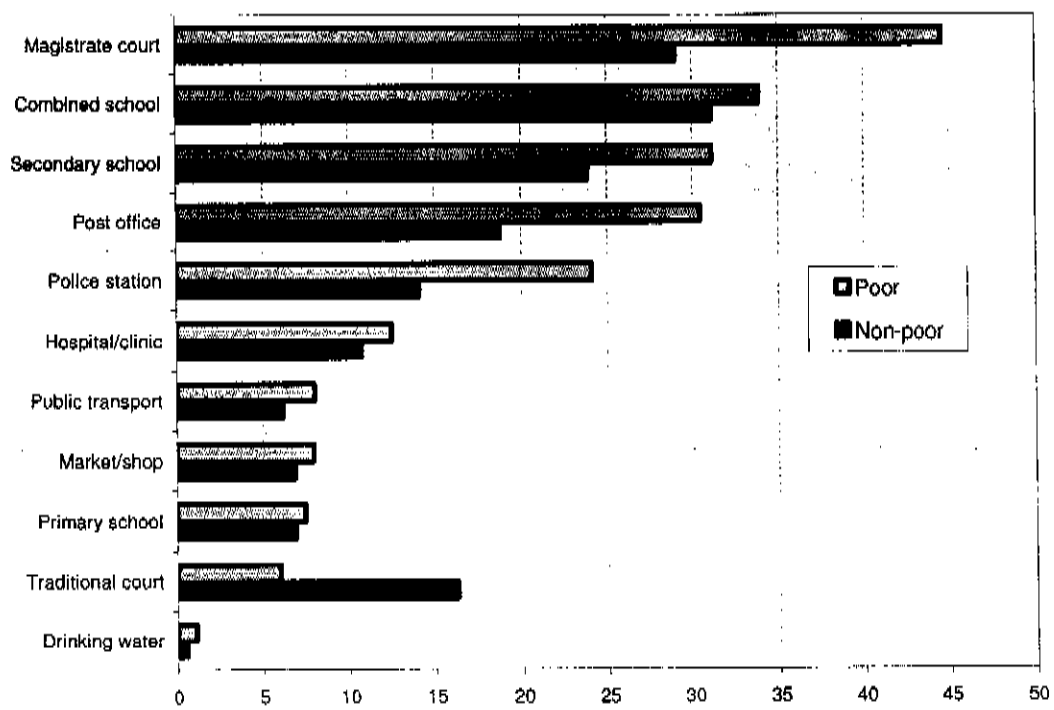
Figure 13: Share of houscholds that own various assets, 2003/2004 (%)



Distance and access

The distinct geographical dimensions of poverty in Namibia are to some extent reflected in the distance variables that are included in the NHIES. Figure 14 shows how poor households are generally farther away in distance measured in kilometres from a range of administrative and infrastructural services compared to non-poor households. The corresponding national and regional figures are included in Table 13. For instance, the average distance of a poor household to a magistrate court is 44.6 kilometres compared to 29.0 kilometres for a non-poor household. Poor households are on average 31.0 kilometres away from a secondary school compared to 23.9 kilometres for non-poor households. The distance to a police station is 14.1 and 24.1 kilometres for non-poor and poor households, respectively. Among all the facilities and services, the distance to drinking water is the lowest (i.e. the facility is nearest to the household) for both groups but still the poor have more than twice the distance (1.1 kilometres) on average to access drinking water compared to non-poor households (0.5 kilometres).

Figure 14: Average distances to facilities and services, 2003/2004 (kilometres)



There are discernable differences between regions in the distances of poor households to services and facilities, which is a reflection of several factors including the availability of infrastructure, population density and urbanisation. For instance, in Omaheke the average distance to a hospital or clinic for a poor household is 30.2 kilometres, in Oshana the average distance is 5.7 kilometres. In Omaheke, the average distance for poor households to public transportation is 22 kilometres whereas in Caprivi it is 2.2 kilometres. It should be noted that the physical distance between the household and these facilities and services are generally expected to have less adverse impacts in non-poor households as these are

more likely than poor households to own a motor vehicle or have access to one (see further below), or have income available to incur public transportation costs.

Housing and utilities

Housing and utilities are major categories of household expenditure and thus key determinants of the non-food component of the cost of basic needs poverty line. Moreover, incidence of poverty is correlated with a series of physical housing characteristics and utilities. Overall, 64.9 percent of households in Namibia owned their own house. Home ownership is higher for poor and severely poor than for the non-poor. While 56.5 percent of non-poor households own their home, the corresponding shares for poor and severely poor households are 86.8 percent and 88.3 percent, respectively. This typically refers to communal housing. The second most common type of tenure among poor and severely poor households is Occupied free.

Table 11: Incidence of poverty by type of tenure, 2003/2004 (%)

	Severely poor	Poor	Non-poor	Namibia
Owned	88.3	86.8	56.5	64.9
Owned but not paid off	1.6	1.7	15.2	11.5
Occupied free	7.8	8.9	12.2	11.3
Rented w/o subsidy	2.2	2.5	13.6	10.5
Rented with subsidy	0.1	0.1	2.5	1.8
Namibia	100.0	100.0	100.0	100.0

Table 12 shows the correlation between poverty status and type of dwelling. Among non-poor households, 43.1 percent live in a detached house and 4.3 percent in an apartment. Together those two categories are often referred to as modern dwelling. The shares of poor and severely poor households that reside in a modern dwelling are 10.3 and 8.9 percent, respectively. The majority of poor and severely poor live in traditional dwellings and a large share of both poor and non-poor live in improvised housing units (defined as housing built with discarded materials such as in informal settlements).

Table 12: Incidence of poverty by type of dwelling unit, 2003/2004 (%)

	Severely poor	Poor	Non-poor	Namibia
Detached or semi-detached house	8.6	10.0	43.1	34.0
Apartment/flat	0.3	0.3	4.3	3.2
Traditional dwelling	67.5	69.2	34.1	43.8
Improvised housing unit	22.2	19.2	15.6	16.6
Other	1.4	1.3	2.9	2.4
Namibia	100.0	100.0	100.0	100.0

Table 13: Average distances to facilities and services by region, 2003/2004 (kilometres)

Region		Drinking water	Hospital/ clinic	Public transport	Market/ shop	Primary school	Secondary school	Combined school	Police station	Post office	Magistrate court
Caprivi	Non-poor	0.6	5.1	2.2	3.8	2.6	13.8	4.8	11.2	23.1	35.9
	Poor	0.6	7.7	2.1	4.4	2.6	13.7	5.7	19.1	25.3	52.5
Erongo	Non-poor	0.1	4.3	2.2	2.8	3.8	8.6	26.6	4.7	5.5	11.3
	Poor	0.3	8.4	7.7	7.8	7.3	31.6	72.8	9.2	24.0	50.0
Hardap	Non-poor	0.1	18.0	18.8	15.4	16.3	43.0	139.2	26.0	25.1	32.2
	Poor	0.5	15.1	14.2	11.5	12.1	41.9	161.9	23.8	23.9	29.8
Karas	Non-poor	0.1	16.6	12.3	11.0	12.1	76.1	123.5	16.3	15.8	45.0
	Poor	0.2	17.2	15.6	12.5	12.0	56.5	65.1	21.1	19.5	49.0
Kavango	Non-poor	1.3	5.4	3.9	3.7	2.0	17.8	10.4	23.9	26.7	28.7
	Poor	1.9	7.7	7.3	7.1	4.6	24.1	13.8	42.3	48.4	50.6
Khomas	Non-poor	0.0	5.2	2.2	3.1	3.9	6.1	7.3	5.4	5.8	7.6
	Poor	0.1	11.3	7.3	7.4	9.5	17.9	20.2	11.6	15.4	17.7
Kunene	Non-poor	0.7	32.8	23.1	21.3	17.2	62.9	75.1	36.6	48.8	51.9
	Poor	0.7	21.4	14.6	18.0	13.2	50.0	74.2	29.9	36.8	43.5
Ohangwena	Non-poor	1.5	12.4	6.2	10.3	4.0	24.8	5.7	17.4	34.3	40.8
	Poor	1.3	10.0	8.2	7.6	3.4	23.8	4.9	17.7	32.2	36.0
Omaheke	Non-poor	0.2	34.7	31.7	18.4	30.0	113.2	200.0	47.5	65.9	100.7
	Poor	0.3	30.2	22.0	9.6	19.2	124.7	238.9	38.6	36.9	91.1
Omusati	Non-poor	1.2	8.3	4.6	4.2	3.6	16.9	6.1	13.2	18.2	39.9
	Poor	1.3	9.4	5.4	3.6	3.4	21.3	6.5	20.7	26.4	43.4
Oshana	Non-poor	0.6	4.5	1.8	5.1	2.0	8.4	2.4	7.1	10.7	12.3
	Poor	1.0	5.7	3.7	6.5	2.3	12.8	2.9	10.5	13.4	14.2
Oshikoto	Non-poor	1.2	12.9	5.2	4.7	6.7	20.2	8.6	17.3	16.3	50.8
	Poor	1.4	18.1	5.9	6.3	9.6	27.8	13.1	23.3	21.4	58.1
Otjozondjupa	Non-poor	0.1	20.5	5.0	11.6	15.3	34.8	41.2	16.2	23.7	29.2
	Poor	0.2	19.4	7.6	15.0	18.4	43.5	36.7	20.1	36.7	43.9
Namibia	Non-poor	0.5	10.8	6.2	6.9	6.9	23.9	31.1	14.1	18.7	29.0
	Poor	1.1	12.5	8.0	8.0	7.4	31.1	33.9	24.1	30.4	44.6

Poverty levels are also reflected in access to water and sanitation facilities. Table 14 shows poverty levels by a range of possible sources of drinking water. In Namibia, 28.6 percent of households have piped water in the dwelling, 25.7 percent use a public tap and 14.6 percent have access to piped water on the site of the dwelling. Among the non-poor households, 37.9 percent have piped water in the dwelling compared to 4.2 and 3.3 percent of poor and severely poor, respectively. The main source of drinking water for poor households is public tab, which 36.4 percent of households rely on. Communal bore hole is the main source of drinking water for 10.8 percent of poor households, 8.9 percent rely on flowing water and 7.8 percent on unprotected wells.

Table 14: Incidence of poverty by source of drinking water, 2003/2004 (%)

	Severely poor	Poor	Non-poor	Namibia
Piped in dwelling	3.3	4.2	37.9	28.6
Piped on site	10.5	11.5	15.8	14.6
Neighbor's tap	7.5	7.5	4.6	5.4
Public tap	35.5	36.4	21.7	25.7
Water carrier or tanker	0.8	0.6	0.6	0.6
Private Bore Hole	4.1	3.9	1.8	2.4
Communal bore hole	11.4	10.8	5.4	6.9
Protected well	4.3	4.6	2.3	2.9
Spring	0.1	0.1	0.1	0.1
Flowing water	11.7	8.9	3.1	4.7
Rain Water Tank	0.5	0.5	0.1	0.2
Unprotected well	7.5	7.8	4.5	5.4
Dam/Pool/Stagnant water	2.4	2.8	1.6	1.9
Other	0.5	0.4	0.3	0.4
Total	100.0	100.0	100.0	100.0

Table 15: Incidence of poverty by sanitation facilities, 2003/2004 (%)

	Severely poor	Poor	Non-poor	Namibia
Flush/Sewer	5.7	7.3	44.5	34.3
Flush/Septic Tank	0.7	0.9	3.1	2.5
Pit Latrine/VIP	2.2	2.3	4.4	3.8
Pit Laterine/no ventilation	5.6	5.6	4.3	4.6
Bucket	2.3	1.9	1.0	1.3
Other	0.2	0.2	0.2	0.2
Bush	83.4	81.8	42.5	53.3
Total	100.0	100.0	100.0	100.0

A similar picture emerges when comparing the incidence of poverty by sanitation facilities. In Namibia as a whole, 34.3 percent of households have a flush/sewer sanitation system compared to 7.3 percent among the poor and 5.7 percent among the severely poor. More than 80 percent of poor and severely poor households use the bush as a toilet, which is almost double the rate for non-poor households. More than half of all Namibian households, 53.3 percent, rely on the bush as the main toilet facility. Less than 4 percent

of all households in Namibia use a ventilated improved pit. Among the non-poor, 1.0 percent use a bucket compared to 1.9 and 2.3 percent among the poor and severely poor, respectively.

The housing quality is measured by the material for roof, wall and floors, and poor households stand out on all these variables. For instance, just over 50 percent of poor and severely poor households have thatched roofs, more than double the share among non-poor households (Table 16). Among non-poor households, 62 percent use iron or zinc compared to 35.8 and 37.1 percent among poor and severely poor households, respectively. Similarly, while 49 percent of non-poor households have their house walls built from cement blocks, the shares among poor and severely poor households are 13.3 and 10.4 percent, respectively (Table 17). More than 38 percent of poor and severely poor households use either sticks, mud, clay or dung. When it comes to the material used for the floor of the house, 58.4 percent of non-poor use concrete, while 54.7 and 57.0 percent of poor and severely poor households, respectively use sand (Table 18).

Table 16: Incidence of poverty by material for roof, 2003/2004 (%)

	Severely poor	Poor	Non-poor	Namibia
Cement blocks	0.1	0.2	0.8	0.7
Bricks	0.2	0.2	0.3	0.3
Iron/Zinc	37.1	35.8	62.0	54.8
Poles/sticks/grass	9.7	10.2	5.8	7.0
Sticks/mud/clay/dung	0.8	0.6	0.6	0.6
Asbestos	0.4	0.9	6.1	4.6
Tiles	..	..	0.3	0.2
Slate	0.2	0.1	0.3	0.2
Thatch	50.2	50.9	21.9	29.9
Other	1.3	1.1	1.9	1.7
Total	100.0	100.0	100.0	100.0

Table 17: Incidence of poverty by material for the wall, 2003/2004 (%)

	Severely poor	Poor	Non-poor	Namibia
Cement blocks	10.4	13.3	49.0	39.1
Bricks	1.4	1.6	3.1	2.7
Iron/Zinc	22.0	18.6	14.1	15.4
Poles/sticks/grass	20.4	22.3	12.1	14.9
Sticks/mud/clay/dung	38.9	38.8	17.3	23.2
Asbestos	0.2	0.4	0.7	0.6
Tiles	0.2	0.1	0.3	0.2
Slate	..	0.0	0.1	0.1
Thatch	3.5	2.4	0.9	1.3
Other	2.9	2.4	2.5	2.4
Total	100.0	100.0	100.0	100.0

Poverty status and energy access are closely correlated. Among poor and severely poor households, 89.7 and 91.6 percent, respectively depend on wood as an energy source for cooking (Table 19). Among non-poor households, 38 percent depend on electricity from the main grid; more than ten times the share among poor households. Only 5.8 percent of households in Namibia use gas for cooking and in total more than half, 59.6 percent of all households, poor and non-poor, rely on wood as their main source of energy for cooking. When it comes to energy for lighting, the main source among poor and severely poor household is candles, 54.6 and 56.0 percent, respectively (Table 20). For 46.2 percent of non-poor households the main source of energy for lighting is the main grid.

Wood remains the most used source of heating energy for Namibian households at 45.8 percent, but with much higher shares among the poor and severely poor households, 66.1 and 64.3 percent, respectively (Table 21). Nearly one third of households in Namibia do not use any energy for heating and the shares are only slightly lower among poor and severely poor households compared to non-poor households. It is interesting to note that even if 8.5 percent of households source their electricity for lighting from the main grid, less than half use the main grid for cooking and even fewer for heating. This is an indication that poor households switch between energy sources depending on purpose. It is also noteworthy that less than one percent of households, irrespective of poverty status, use solar energy for either cooking, heating or lighting.

Table 18: Incidence of poverty by material for the floor, 2003/2004 (%)

	Severely poor	Poor	Non-poor	Namibia
Sand	57.0	54.7	28.9	36.0
Concrete	17.6	19.5	58.4	47.7
Mud/clay/and/or dung	24.8	25.3	11.3	15.2
Wood	0.0	0.2	0.6	0.5
Other	0.4	0.3	0.7	0.6
Not stated	0.1	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0

Table 19: Incidence of poverty by energy source for cooking, 2003/2004 (%)

	Severely poor	Poor	Non-poor	Namibia
Electricity from mains	2.6	3.6	38.0	28.5
Electricity from generator	..	0.1	0.4	0.3
Solar Energy	..	0.0	0.0	0.0
Gas	1.7	2.3	7.2	5.8
Paraffin	2.1	2.6	5.1	4.4
Wood	91.6	89.7	48.1	59.6
Coal	0.2	0.2	0.1	0.2
Animal Dung	1.7	1.3	0.9	1.0
Other	..	0.1	0.0	0.0
None	..	0.1	0.1	0.1
Total	100.0	100.0	100.0	100.0

Table 20: Incidence by energy source for lighting, 2003/2004 (%)

	Severely poor	Poor	Non-poor	Namibia
Electricity from mains	7.3	8.5	46.2	35.8
Electricity from generator	0.2	0.2	0.9	0.7
Solar Energy	0.1	0.1	0.6	0.4
Gas	0.1	0.1	0.2	0.2
Paraffin	13.7	16.8	14.5	15.1
Wood	15.9	14.2	3.4	6.4
Candles	56.0	54.6	32.2	38.4
Other	5.6	4.6	1.7	2.5
None	1.1	1.0	0.3	0.5
Total	100.0	100.0	100.0	100.0

Table 21: Incidence by energy source for heating, 2003/2004 (%)

	Severely poor	Poor	Non-poor	Namibia
Electricity from mains	1.4	1.6	24.8	18.4
Electricity from generator	0.1	0.0	0.3	0.3
Solar Energy	..	0.1	0.1	0.1
Gas	0.1	0.1	1.0	0.7
Paraffin	0.5	0.3	1.0	0.8
Wood	64.3	66.1	38.1	45.8
Coal	1.3	1.0	0.6	0.7
Animal Dung	1.1	0.8	0.7	0.7
Candles	0.4	0.3	0.3	0.3
Other	0.2	0.4	0.3	0.3
None	30.7	29.2	32.9	31.9
Total	100.0	100.0	100.0	100.0

5. Determinants of consumption and poverty

The previous sections of this report have highlighted a number of features that characterise the poor, severely poor and non-poor households. While this is useful in describing how each variable correlates one by one to the poverty status of households, such an analysis can oversimplify complex relationships. Multivariate analysis on the other hand makes it possible to determine the effects that accrue from each variable when simultaneously controlling for the effect of all others. This way it is possible to gauge, for instance, whether the observed differences between households in urban and rural areas are specific to location or whether differences are more attributable to variation in other characteristics of urban and rural households such as educational attainment, household composition and source of income. This section briefly highlights the results from two types of multivariate analysis; first on the determinants of household consumption expenditure and second on the poverty status of households. More details on the methodology and more in-depth results are in Annex G. Once again it should be noted that the effects here relate to correlation and that no aspects of causation can be inferred.

Determinants of household poverty status

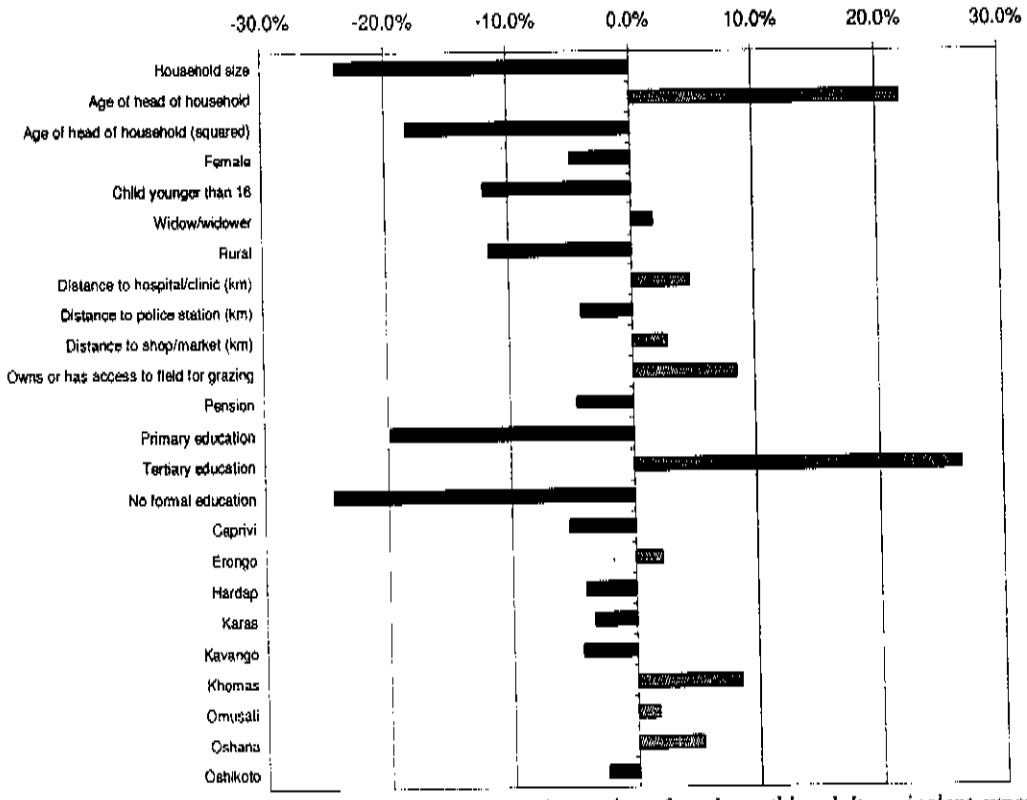
The main findings of the first multivariate analysis are summarised in Figure 15. The figure shows an inverse relationship between household expenditure and the size of the household. Increasing the size of the household (by one adult equivalent) reduces total household expenditure by 23.9 percent when all other factors are controlled for. Female-headed households have total consumption expenditures that are lower by 4.9 percent compared to male-headed households. As expected, given the results of the poverty profile, household consumption expenditure increases with the age of the head of household. Moreover, having one or more children in the household reduces adult equivalent consumption by 12 percent compared to households without any children and holding other factors, including household size, constant.

The analysis confirms the great regional differences in levels of consumption expenditure among households. Rural households also have lower levels of consumption expenditure compared to the urban default controlling for all other factors. In households where the head has primary education as the highest level of education or has no formal education at all, the monthly consumption levels are lower by 19.8 and 24.4 percent, respectively compared to households where the head has attained a secondary level of education. Conversely, in households where the head has attained a tertiary education, the consumption levels are higher by 26.6 percent compared to household heads with a secondary education. Having a pension as the main source of income reduces consumption expenditure by 4.6 percent compared to all other sources of income including wages, income from subsistence farming and non-farming business activities. The variables reflecting distances to public services and facilities are somewhat ambiguous. Expenditure levels increase with distance to hospital/clinic and shop/market but decrease with distance to police station.

Households of Caprivi and Kavango have lower levels of household consumption when controlling for other factors. Also, the regions of Karas, Hardap and Oshikoto have lower

levels of consumption expenditure in comparison with Ohangwena as the default category. On the other hand, Khomas, Omusati and Oshana have higher levels of consumption expenditure. This may seem to differ from the results from the poverty profile, which showed that Ohangwena ranked second highest in terms of both levels of poverty and poverty share. The reason for the change in ranking is that the multivariate analysis controls for other factors that determine poverty status and shows the strength of the effects that are attributable to the region per se. This way, the results show that when holding constant all other characteristics that are thought to influence income and consumption levels e.g. education levels, age, number of children in the household and so on, a household in Caprivi is likely to be poorer than a household living in any other region of the country. Likewise, a household in Khomas is more likely to have a higher level of income or consumption than in any other region.

Figure 15: Determinants of household consumption expenditure (percentage change)



Note: The table shows the results from the OLS regression on log of total monthly adult equivalent expenditure. Only results significant at 10% or lower are reported. The regression also included dummy variables for language groups, which are not shown but reported in Annex C along with the full regression output. The omitted categories for the categorical variables are; male, no child younger that 16, marital status other than widow/widower, urban, neither owns nor has access to field for crops, other income sources, secondary education, Ohangwena.

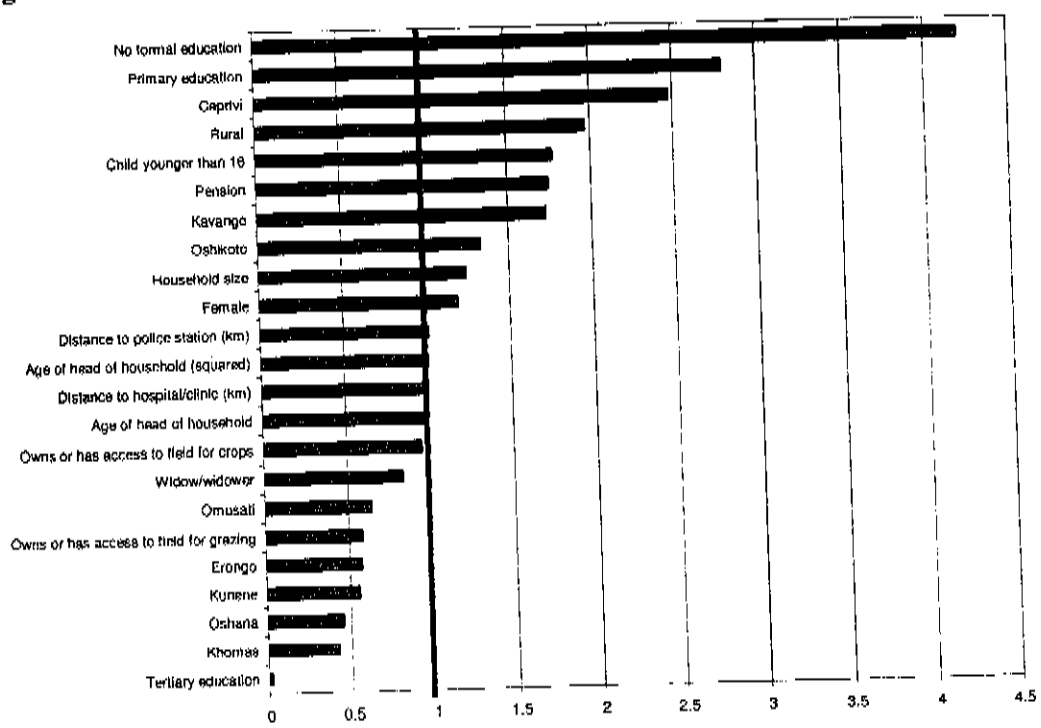
In households where Afrikaans is the main language, total consumption is higher by 19.8 percent compared to the default category, which is Oshiwambo, and households where German and English consumption is higher by 11.3 and 10.5 percent, respectively controlling for other factors. On the other hand, households where the main languages spo-

ken are Khoisan, Rukavango and especially Nama/Damara total consumption levels are lower (than the default category), again holding constant all other factors.

Determinants of household poverty status

The second type of multivariate analysis conducted on the data makes use of the new poverty line definition by predicting the probability or the odds ratio of a household being poor given the range of background variables. Results are reported in Figure 16 where the odds ratios have been ranked from highest to lowest for illustration purposes. The higher the odds ratio, the higher the probability that the household will be poor. The highest odds ratio is for no formal education of the head of household. These households have an odds ratio of 4.2. In other words, households where the head has no formal education are more than four times as likely to be classified as poor compared to households where the head has a secondary education and controlling for all other factors. Households where primary education is the highest level of education attained by the head of household are also more likely to be poor. The analysis further shows that households in rural areas have an odds ratio of 1.97, which means that they are 97 percent more (almost twice as) likely to be poor compared to urban households and holding all other factors constant.

Figure 16: Probabilities of households being poor ("odds ratios")



Note: The table shows the results from the binary logistic regression on poverty status (poor=1 and non-poor=0). Only results significant at 10% or lower are reported. The regression also included dummy variables for language groups, which are not shown but reported in Annex G along with the full regression output. The omitted categories for the categorical variables are; male, no child younger that 16, marital status other than widow/widower, urban, neither owns nor has access to field for crops, other income sources, secondary education, Ohangwena.

Additional factors contribute to the probability of household poverty. Having a child younger than 16 in the household make it 1.77 times (or 77 percent) more likely to be poor compared to households without any children. Households where pension is the main source of income are 1.74 times more likely to be poor than households that rely on other main sources of income. Female-headed household are 1.18 times as likely to be poor compared to male-headed households. Several regional variables, Caprivi, Kavango and Oshikoto, also have odds ratios higher than one, which indicates that households residing in these regions are more likely to be poor, compared to households residing in Ohangwena (the default category) and holding all other variables constant.

Conversely, several factors have odds ratios below 1, which means that the probabilities shift towards the household being less likely than the default category to be classified as poor. The most important of these factors is tertiary education. An odds ratio of 0.019 implies that if the household head has a tertiary education, it is 50 times less likely to be poor compared to a houschold where the head has a secondary education. Moreover, households residing in the regions of Erongo, Kunene, Oshana and Khomas are half as likely to be poor compared to those in Ohangwena when all other factors are controlled for.

6. Inequality and polarisation

As explored throughout the preceding sections of this report, consumption expenditure and levels of poverty are distributed very unevenly in Namibia. Since the promotion of social equity and the reduction of inequality remain a high priority for national development policy, it is important to establish measures that can adequately reflect levels of inequality, proximate factors and drivers of change. In this section, the analysis of poverty is supplemented by additional measures on inequality and polarisation. The section is kept brief and non-technical in line with the desire to make the analysis presented in this report accessible to as wide an audience as possible. A deeper and more technical analysis is included in Annex H. The importance of the analysis presented in this section is underscored by the general conclusion that Namibian society remains among the most unequal and polarised in the world.

Table 22: Adult equivalent expenditure by deciles, 2003/2004

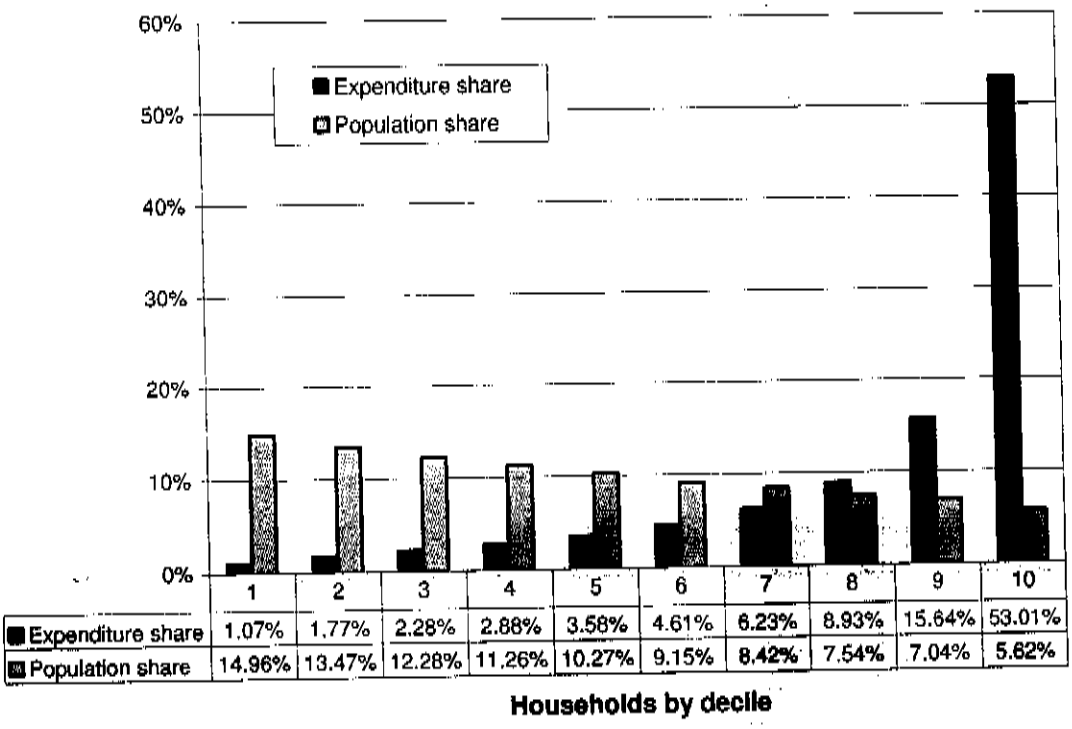
	Mean expenditure (N$)			Share of total expenditure (%)		
Decile	Urban	Rural	Total	Urban	Rural	Total
1	161.44	103.50	116.20	0.95	1.57	1.07
2	298.22	167.01	191.79	1.75	2.54	1.77
3	415.59	209.16	247.24	2.43	3.17	2.28
4	562.08	247.98	311.67	3.30	3.76	2.88
5	730.38	296.38	387.42	4.29	4.50	3.58
6	961.35	352.94	500.22	5.62	5.36	4.61
7	1312.41	426.72	673.67	7.70	6.46	6.23
8	1903.56	557.38	968.62	11.15	8.46	8.93
9	3241.26	805.04	1691.93	19.04	12.20	15.64
10	7481.81	3419.57	5743.88	43.77	51.99	53.01
Total	1705.76	659.14	1083.03	100.00	100.00	100.00

Distribution of household expenditure

Table 22 shows the distribution of expenditure by deciles, i.e. grouping together households in 10 equal size groups ranked by expenditure with decile 1 comprising households with the lowest expenditure and decile 10 with the highest expenditure. The results show that among those households with the 10 percent lowest monthly expenditure, the average expenditure is N$ 116.20 per adult equivalent and the combined expenditure of this group makes up 1.07 percent of total expenditure among all households. At the other end of the distribution, among the top 10 percent, average monthly expenditure is N$ 5743.88. The table also shows the percentage share that each decile claims out of total expenditure. Expenditures in the top decile, even if only including 10 percent of households, constitute more than half, 53 percent, of total expenditure of all households. At the other extreme, expenditure among the lowest decile makes up just over 1 percent of total expenditure of all households. For all deciles, average expenditure are lower among rural households compared to urban ones, which is expected given the results from the poverty profile. The aver-

age adult equivalent expenditure in rural households is almost one third of expenditure in urban households. Figure 17 compares the share of total expenditure by each decile with the corresponding share of the total population. While each decile contains the same number of households, because poorer households tend to have more members, population shares at the lower end exceed 10 percent. By focusing on individuals rather than households gives an even more disturbing picture of inequality in Namibia. While the 40 percent of households with the lowest expenditure hold more than half the population (51.97 percent), their total expenditure comes to just 8 percent of total expenditure in the country. Moreover, the 10 percent of richest households are home to just 5.62 percent of the population but these command more than half (53.01) of total household expenditure.

Figure 17: Share of total expenditure and share of total population by household decile, 2003/2004



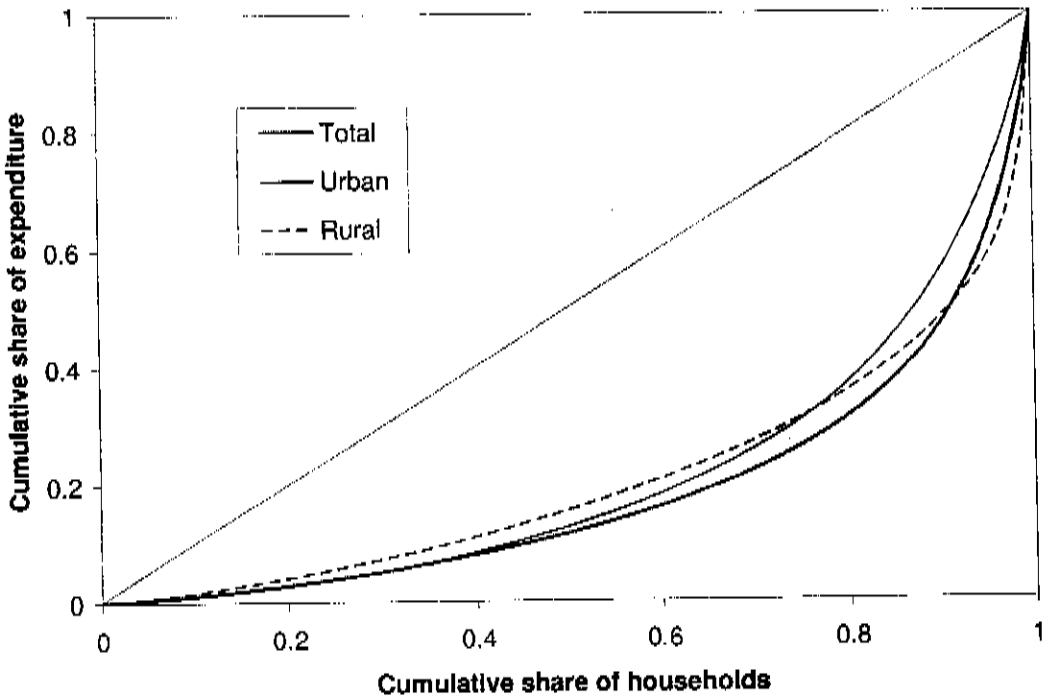
	1	2	3	4	5	6	7	8	9	10
Expenditure share	1.07%	1.77%	2.28%	2.88%	3.58%	4.61%	6.23%	8.93%	15.64%	53.01%
Population share	14.96%	13.47%	12.28%	11.26%	10.27%	9.15%	8.42%	7.54%	7.04%	5.62%

The Lorenz curve and the Gini index

Another popular way of expressing inequality graphically is through a Lorenz diagram, which plots the cumulative share of consumption expenditure against the cumulative share of households. A 45 degree line represents a situation whereby the cumulative share of households and their cumulative consumption are the same at all levels thus indicating the hypothetical situation whereby there is perfect inequality in the way expenditures are distributed (everyone gets the same). The further away the observed Lorenz curve is from the 45 degree curve, the greater is the inequality in the distribution. Figure 18 presents the Lorenz curves for all households, and for rural and urban ones separately. Two issues emerge from the figure. Firstly, note how at all points the line for urban households is to the left of the line representing the total number of households. This implies that as a group inequality

among urban households is lower than for all households together. Secondly, the line for rural households intersect both lines for urban and all households. This implies that no firm conclusion about the comparative levels of overall inequality between urban and rural areas can be made on the basis of a visual inspection of the Lorenz diagram alone. Other measures need to be applied.

Figure 18: Lorenz diagram, 2003/2004



One such measure is the Gini coefficient, which is computed as the distance between the Lorenz curve and the 45 degree line, and provides a numerical value of the degree of inequality. The Gini-coefficient takes a value between 0 and 1, where 0 represents the unlikely situation of perfect equality where all households have the exactly the same level of consumption expenditure. A value of 1 for the Gini-coefficient represents the equally unlikely situation of the most extreme inequality whereby one household commands *all* the consumption expenditure.

Table 23 provides an overview of Gini coefficients across a range of social and demographic variables. The table shows that the Gini-coefficient in 2003/2004 was 0.63. The coefficient for both urban and rural areas is 0.58 indicating that inequality is similar across localities. Naturally that does not imply that poverty levels are equal; as discussed above poverty levels are much higher in rural areas. The fact that the Gini-coefficients for urban and rural areas are lower than the national average is a further indication that lower incomes are concentrated in rural areas and higher incomes are concentrated in urban areas.

There are great differences in the degree of inequality in the 13 administrative regions of Namibia. The lowest Gini-coefficients are found in Ohangwena and Omusati at 0.45 and

0.46, respectively. The highest is in Hardap with 0.69 and Omaheke with 0.64. Inequality is lower in most regions but in Hardap and Kavango, the Gini-coefficients have moved up significantly. The Gini-coefficient for those with no formal education is 0.39 suggesting lower inequality among this group compared to those with any other level of education. This is an indication that among those with no formal education, most have low incomes. Similarly, in households were subsistence farming is the main source of income, the inequality measure is lower than for other income sources, indicating a uniformity of low incomes in this category. For business and pension income, the Gini-coefficients are much higher, which reflects a greater diversity of income levels, and thus higher inequality, in these categories. Inequality is also higher in male-headed households compared to female-headed households, and the levels of inequality generally increase with the age of the head of household. Among households where English and German are the main languages spoken, inequality is the lowest. These are also the households with the highest incomes.

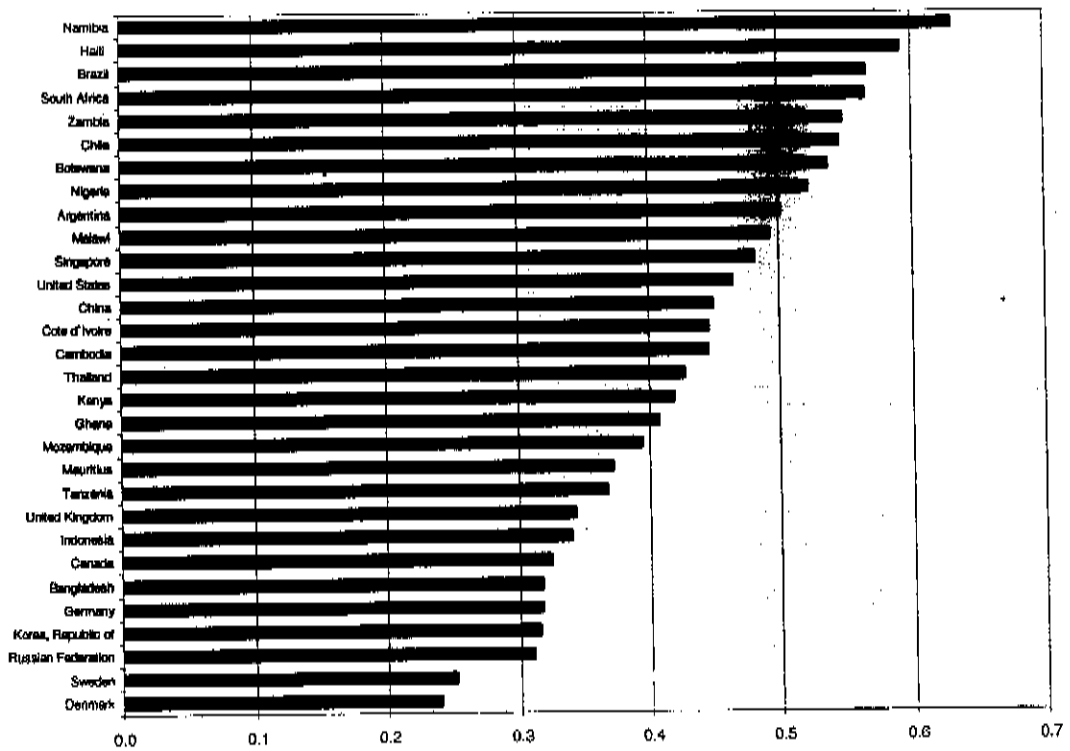
Table 23: Gini-coefficients of households by social and demographic variable, 2003/2004

Namibia	0.63	Female	0.58
		Male	0.64
Urban	0.58		
Rural	0.58	16-20	0.45
		21-24	0.49
Caprivi	0.47	25-29	0.59
Erongo	0.57	30-34	0.60
Hardap	0.69	35-39	0.58
Karas	0.61	40-44	0.62
Kavango	0.55	45-49	0.62
Khomas	0.57	50-54	0.68
Kunene	0.51	55-59	0.64
Ohangwena	0.45	60-64	0.70
Omaheke	0.64	65+	0.60
Omusati	0.46		
Oshana	0.56	Khoisan	0.44
Oshikoto	0.51	Caprivi languages	0.49
Otjozondjupa	0.60	Otjiherero	0.53
		Rukavango	0.51
Primary education	0.43	Nama/Damara	0.52
Secondary education	0.55	Oshiwambo	0.52
Tertiary education	0.47	Setswana	0.50
No formal education	0.39	Afrikaans	0.56
		German	0.31
Salaries/Wages	0.58	English	0.41
Subsistence Farming	0.38		
Commercial Farming	0.52		
Business	0.67		
Pensions	0.66		

On Figure 19, the Gini-coefficients of selected countries are presented. The figure is compiled using country data for the most recent survey where the income definition is house-

hold consumption, the sample is for full national coverage and the household is the unit of analysis. However, since the data sources are individual country surveys where methodologies invariably differ, comparisons should be made with caution. Nevertheless, the figure gives an indication of how Namibia fares globally. The Gini-coefficient for Namibia makes the country rank high among the most unequal societies in the world when it comes to the distribution of incomes (as measured by household consumption expenditure).

Figure 19: Gini-coefficients for selected countries



Source: NHIES 2003/2004 for Namibia. For all other countries; the World Income Inequality Database of UN World Institute for Development Economics Research.

Several explanations have been offered for the extreme levels of inequality in Namibia (United Nations 2005). Notably, the country's system of Apartheid rule prior to Independence in 1990, which was founded on policies of racial division and severely restricting access to economic and social resources for the majority. Moreover, the country's traditional heavy reliance on extraction of natural resources, e.g. diamonds, means that production in Namibia is highly intensive in the use of capital rather than labour. Note also how Figure 19 reveals that high levels of inequality is a particular challenge for counties in southern Africa and Latin America, while at the other end of the inequality spectrum, countries in Europe and especially in Scandinavia have low levels of income inequality.

Additional measures of inequality and polarisation

A series of additional measures of inequality and polarisation are presented in more detail in Annex H. An important conclusion from this analysis is that inequality in Namibia is a

product not so much of differences *between* various population sub-groups as it is of differences *within* the same sub-groups. For instance, when decomposing inequality by the sex of the head of household, it is shown that almost all of the prevailing inequality can be attributed to inequalities within the two groups of male- and female-headed households and much less to inequality between the two groups. Moreover, regional inequality is a result more of inequalities within the regions and less so between them. This suggests that intra-regional transfers are even more important in addressing inequality than inter-regional transfers. The two sub-groups where between-group inequality is highest—although the within component also dominates here—are for education and language. This is a strong indication that a large part of the inequality that exists in Namibia is attributable to differences in education levels and differences between language groups. This suggests that public policy initiatives such as social transfers and empowerment initiatives need to be concerned with both between and within types of differences and that targeting mechanisms based on education and language would contribute substantially to reducing inequality.

The conventional inequality measures such as the Lorenz curve and the Gini-coefficient may not be able to register important changes in the income distribution. The concept and measures *of polarisation* seek to address this. Polarisation may be seen as a movement from the middle of the income distribution towards the two tails leaving a "hollowing of the middle" of the distribution. Two polarisation indices are calculated for Namibia in Annex H. The first measure follows Wolfson (1994), assumes two groups of equal size and like the Gini index, is between 0 (no polarization) and 1 (complete polarization). The second polarisation measure computed for the report is the Duclos-Esteban-Ray (DER) index, which allows for individuals not to be clustered around discrete income intervals and avoids arbitrary choices in the number of income groups through the use of non-parametric estimation techniques (Duclos et al 2004). The results suggest that not only is Namibia one of the most unequal societies in the world when it comes to income distribution, it also appears to be among the most polarised. For both indices, the values are higher in urban areas than in rural areas indicating that polarization is greater in urban areas. Measures of polarisation as well as a broader range of inequality indicators as presented above could be added to the indicators in the national poverty monitoring system to track developments over time.

7. Conclusion

This report has presented an analysis of poverty and inequality in Namibia based on the expenditure data from the 2003/2004 Namibia Household Income and Expenditure Survey (NHIES) conducted by the Central Bureau of Statistics. The main innovation of the report was the establishment of a new set of poverty lines for Namibia based on the Cost of Basic Needs (CBN) approach, which has become part of the poverty monitoring standard in SADC and most developing countries. Such poverty lines are particularly useful for drawing of poverty profiles, examining the determinants of poverty and guiding policy interventions aimed at poverty reduction.

Using the new CBN-based poverty lines, the study presented a detailed poverty profile of Namibia. This profile showed that poverty status in the country is closely correlated with a series of social, demographic, geographic and economic features of households. Multivariate analysis confirms that poverty levels in Namibia are higher for instance among households that are female-headed, based in rural areas and have one or more children, when controlling for other possible determinants. These results underscore the potential for poverty reduction by greater targeting of policies and interventions. The report has shown discernible differences in the levels of consumption expenditure according to the education levels of the head of household. These results underscore the centrality of the strengthening the education system as an integral part of the national poverty reduction strategy. The report also introduced a series of inequality measures beyond those traditionally applied in Namibia. This part of the analysis re-affirmed that Namibia ranks among the most unequal and polarised of societies in the world. Moreover, a decomposition exercise showed how inequality is primarily a product of inequality within different population groups rather than between these groups.

This report has also highlighted a range of methodological aspects in the establishment of the poverty line for Namibia and documented the technical steps involved. However, the analysis presented in this report must not be regarded in isolation but as part of a broader effort that relies on quantitative as well as qualitative approaches to contribute to the understanding of poverty in Namibia as an important basis for designing effective interventions to improve the welfare of Namibians.

References

Central Bureau of Statistics (CBS) 2006 "The 2003/2004 Namibia Household Income and Expenditure Survey" National Planning Commission,Windhoek.

CBS 2001 "Levels of Living Survey"National Planning Commission, Windhoek.

CBS 1996 "Living Conditions in Namibia: The 1993/1994 Namibia Household Income and Expenditure Survey" National Planning Commission, Windhoek.

CBS 1995 "The distribution of economic resources in the population of Namibia: Some highlights" National Planning Commission, Windhoek.

Deaton A and C Paxson 1998 "Economics of Scale, Household Size, and the Demand for Food" *Journal of Political Economy,* 106(5):897-930.

Deaton A, 1997 *The Analysis of Household Surveys: a Microeconometric Approach to Development Policy"* Washington D.C. and Baltimore: The World Bank and Johns Hopkins University Press.

Duclos JY and A Araar 2006 "Poverty and Equity: Measurement, Policy and Estimation with DAD" Kluwer Academic Publishers.

Duclos JY, J Esteban and D Ray 2004 "Polarization: Concepts, Measurements, Estimation" *Econometrica* 72(6):1737-1772.

Ekström, E 1998 "Income Distribution and Labour Market Discrimination: A Case Study of Namibia" Research Institute of Industrial Economics Working Paper Series No. 502.

FAO/WHO/UNU 1985 "Energy and Protein Requirements. Report of a Joint Expert Consultation" WHO Technical Report Series No 724, Geneva.

Foster JE, J Greer and E Thorbecke 1984 "A class of decomposable poverty measures" *Econometrica* 52(3):761-766.

Foster J and A Shorrocks 1988 "Poverty orderings and welfare dominance" *Social Choice and Welfare,* 5(2-3):179-198.

Government of the Republic of Namibia (GRN) 2005 "Poverty Monitoring Strategy" National Planning Commission, Windhoek.

GRN 2004 "Vision 2030" Office of the President, Windhoek.

GRN 2002 "National Poverty Reduction Action Programme, 2001-2005" National Planning Commission, Windhoek.

GRN 2001 "Second National Development Plan, 2001-2006 (NDP2)" National Planning Commission, Windhoek.

GRN 1998 "Poverty Reduction Strategy for Namibia" National Planning Commission, Windhoek.

Lanjouw JO 2001 "Demystifying poverty lines" http://www.undp.org/poverty/publications/pov_red/Demystifying_Poverty_Lines.pdf

Lanjouw P and M Ravallion 1995 "Poverty and Household Size" *Economic Journal,* 105(433): 1415-34.

Levine S 2007 "Trends in Human Development and Human Poverty in Namibia" United Nations Development Programme, Windhoek.

May J and B Roberts 2005 "Poverty Diagnostics Using Poor Data: Strengthening the Evidence Base for Pro-poor Policy Making in Lesotho" *Social Indicators Research*, 74:477-510.

Ministry of Health and Social Services 2001 "First Report of the Working Group on HIV/AIDS Impact Projections for Namibia" GRN, Windhoek.

Ravallion M 1998 "Poverty Lines in Theory and Practice" LSMS Working Paper No 133 World Bank, Washington DC.

Ravallion M 1992 "Poverty Comparisons: A Guide to Concepts and Methods" LSMS Working Paper No. 88 World Bank, Washington, DC.

Ravallion M and B Bidani 1994 "How Robust is a Poverty Profile?" *World Bank Economic Review*, 8(1):75–102.

Ravallion M. and M Huppi 1991 "Measuring Changes in Poverty: A Methodological Case Study of Indonesia During an Adjustment Period" *World Bank Economic Review*, 5:57-84.

Tarp F, K Simmler, C Matusse, R Heltberg and G Dava 2002 "The Robustness of Poverty Lines Reconsidered" *Economic Development and Cultural Change* 51(1):77-108.

United Nations 2003 "Indicators for Monitoring the Millennium Development Goals; Definitions, Rationale, Concepts and Sources" United Nations Statistics Division, New York.

United Nations 2005 "Common Country Assessment for Namibia." Windhoek.

United Nations Statistics Division 2005 "Handbook on Poverty Statistics: Concepts, Methods and Policy Use" New York.

Van Rooy G, B Roberts, C Schier, J Swartz, and S Levine 2006 "Poverty and Inequality in Namibia" Multi-Disciplinary Research and Consultancy Centre Discussion Paper No 1.

Van Rooy G, G !Naruseb, M Maasdorp, G Eele, J Hoddinot, and S Stone 1994 "Household Subsistence Levels: Three Selected Communities in Namibia" *Social Science Division Research Report No 9*.

White H and E Masset 2003 "The Importance of Household Size and Composition in Constructing Poverty Profiles: An Illustration from Vietnam" *Development and Change* 34(1):105-126.

Wolfson M 1994 "When Inequality Diverges" *American Economic Review* 84:353-358.

World Bank 2007 World Development Indicators CD ROM, Washington DC.

Yaron G, G Janssen and U Maamberua 1992 "Rural Development in the Okavango Region: an Assessment of Needs, Opportunities and Constraints" NISER, Windhoek.

Zimmerman C 1932 "Ernst Engel's Law of Expenditures for Food" *The Quarterly Journal of Economics* 47(1):78-101.

ANNEXES

ANNEX A: Background to the NHIES data

The data used for analysis in this report comes from the Namibia Household Income and Expenditure Survey (NHIES) conducted in 2003/2004. The main results of the survey have been published separately (CBS 2006) primarily in tabular form and with limited analysis and interpretation. Since the official release of the NHIES results, the 2003/2004 data has undergone further cleaning and refining for purposes of this report. This has not resulted in major shifts in the data but in light even of small changes, caution should be exercised when comparing the analysis in this report with previous releases of the data set. This Annex briefly describes the NHIES survey instrument. Some similarities and differences with the first NHIES conducted in 1993/1994 are also highlighted. Due to methodological differences between the two surveys, additional analytical work is ongoing to establish comparability, which will facilitate additional analysis on the dynamic aspects of poverty and inequality in Namibia.

Table A-1: Key features of the NHIES

	1993/1994 NHIES	2003/2004 NHIES
Dates of field work	November 1993 to October 1994 (Walvis Bay was included from May 1994)	1 September 2003 to 29 August 2004
Publication date	October 1994 (preliminary) May 1996 (full)	March 2006 (preliminary) February 2007 (full)
Sample size	4,752 households	10,920 households
Primary Sampling Units	192 (111 rural)	546 (300 rural)
Response rate	92.5%	90%
Reference period for the Daily Record Book	Four weeks	Four weeks

Sources: CBS (2006, 1996)

About the surveys

The target population of the NHIES was the private household population of Namibia. Therefore, the population living in institutions, such as hospitals, hostels, police barracks and prisons were not covered. These were included in the Census, for instance. However, households residing in private quarters of institutional settings were included. Some key features of the two NHIES are listed in Table A-1. Two questionnaire forms were administered to collect the data from the participating households. Form I was used to collect basic information about the household and the people living in it, including: age, sex, education

and so on. Information on household incomes and expenditure were also collected on this form using a 12 month reference period.

Form II, the Daily Record Book, was designed for households to record all expenditures and receipts, item by item and including incomes and gifts (both received and given out), every day. Each household would record these transactions daily over a four-week period. In addition, households would record their consumption of goods from own-production, for instance cereals, vegetables or eggs. These records detail the consumption of food and non-food, as well as the flows of monetary and in-kind resources in and out of households all over the country.

The survey was carried out over 13 of such four-week cycles each with a new set of households and thus a key distinguishing factor of the NHIES compared to other surveys conducted by the Central Bureau of Statistics was that the NHIES was conducted over a full 12 months period. This ensured that any effects attributable to seasonality were evened out and by changing the households every four weeks, "respondent fatigue" was minimised. It is the detailed account of the consumption, incomes and expenditures of households generated by the survey that makes it so suitable for an analysis of poverty and material well-being, which is the subject of this report.

Field work organisation

Recruitment of survey personnel was restricted to holders of Grade 12 Certificate or equivalent. In the case of regional supervisors, a first degree was the minimum requirement. Advertisements were placed in newspapers and on various radio programmes for interested persons to apply. Many applications were received from which suitable candidates were selected. Academic qualification and previous survey experience were taken as criteria for recruitment. Selection of the final core of field staff for each region was made from regional trainees only. Only those who met recruitment requirements were selected from the applicants for interviews. Due to large numbers of applicants, selection was by written test. Efforts were made to recruit all language groups in each region to facilitate interviews in local languages. A test was administered and those who passed were taken for deployment. A larger number of trainees, than the required compliment, were selected from applications from each region. After the training the final selection of temporary staff was made on the basis of each applicant's performance in a written test, which was given at the end of the training. Regardless of the results of the test, no crossovers were allowed between regions, except when it was deemed necessary by the office. Staff deployment in all regions was done immediately after training. The first group in the field was that of regional and team supervisors and listing clerks. The task was to list and to familiarize with the Primary Sampling Units (PSUs) and do some publicity before interviewing. Many reasons warranted office staff to do field monitoring of the data collection activities taking place in the regions, including:

- The importance and uniqueness of the survey information for socio-economic planning for the country.
- Staff inexperience in conducting the budget survey.
- The temporary nature of the staff in the field.

- To retrain staff on aspects where mistakes had been identified.
- Respond to queries and attend to possible staff grievances.

To ensure that field operations went as smoothly as possible, field monitoring visits were done at regular unannounced intervals. Monitoring teams spent on average two to three days in each region before proceeding to the next region. Besides checking of questionnaires and general administration issues, monitoring teams re-interviewed some households already covered by field staff and compared answers. Regional supervisors were required to submit monthly reports about survey activities in their regions. A post-enumeration survey was conducted immediately after the main field work with the objective of testing the values of information collected earlier. A refresher training of the best staff that participated in the main fieldwork was undertaken prior to the data collection of the PES

Table A-2: Distribution of sample households and sampling fractions by region and urban/rural areas for the two surveys

Region	1993/94 NHIES				2003/04 NHIES			
	Urban	Rural	Total	Sampling fraction (%)	Urban	Rural	Total	Sampling fraction (%)
Caprivi	48	240	288	1.6	300	480	780	4.6
Erongo	192	72	264	2.0	520	260	780	2.8
Hardap	144	96	240	1.8	300	480	780	5.1
Karas	168	72	240	2.0	400	380	780	5.0
Kavango	72	240	312	1.8	300	480	780	2.5
Khomas	648	48	696	2.1	1 040	260	1 300	2.2
Kunene	96	144	240	1.9	260	260	520	4.1
Ohangwena	0	432	432	1.5	260	520	780	2.2
Omaheke	72	168	240	2.5	260	260	520	4.1
Omusati	0	456	456	1.5	260	780	1 040	2.7
Oshana	168	264	432	2.0	400	640	1 040	3.5
Oshikoto	96	264	360	1.7	260	780	1 040	3.7
Otjozondjupa	240	168	408	1.9	360	420	780	3.1
Namibia	**1944**	**2664**	**4608**	**1.8**	**4 920**	**6 000**	**10 920**	**3.1**

Sampling

Stratified two-stage cluster sample design was used for the NHIES, where the first stage units were geographical areas designated as PSUs and the second stage units were the households. The first stage units were selected from the sampling frame of PSUs and the second stage units were selected from a current list of households within each selected

PSU, which was compiled just before the interviews for the survey. The extensive stratification of the frames together with the systematic sampling procedure enhanced the representation of different types of sub-population groups in the NHIES sample.

PSUs were selected using probability proportional to size sampling coupled with the systematic sampling procedure where the size measure was the number of households within the PSU in the 2001 Population and Housing Census. The households were selected from the current list of households using systematic sampling procedure. The selected PSUs were randomly allocated to the 13 survey rounds. The sample sizes were designed to achieve reliable estimates at the national and regional levels. The distribution of the sample households for the two surveys is given in Table A-2.

The number of households to be interviewed per PSU was fixed at 20. Increasing the number of sample households more than 20 in each PSU would not add much to the improvement of the precision but would only increase costs. Population figures were estimated by raising sample figures using sample weights. Sample weights were calculated based on probabilities of selection at each stage. First stage weight was calculated using the sample selection information from the sampling frame and the second stage weight was based on sample selection information on the listing form. In the second stage, some households out of the selected 20 households in a PSU did not participate in the survey due to refusals, non-contact or non-completion of interview, etc. Such non-responding households were few in number and there was no evidence to suggest that the excluded households were significantly different from the responding ones. Hence, it was assumed that the non-responding households were randomly distributed and the second stage weights were adjusted accordingly. The final sample weight was the product of the first and the second stage weights, which were then incorporated into the database, so that inflating the sample data would be automatically carried out when the tables were produced.

Changes in survey methods

In the 2003/2004 NHIES, the Central Bureau of Statistics took care not to depart unnecessarily from the methodology used in the previous survey in 1993/1994 to keep comparability between the surveys to a maximum. Invariably however, surveys that are conducted 10 years apart will not be completely comparable. Methodologies do change over time and improvements are introduced based on experiences and lessons learned. Moreover, a household survey of this size, scope and complexity is a challenge for any statistics office and even more so if faced with the severe capacity deficits that characterises the Central Bureau of Statistics in Namibia. Nevertheless, the main differences between the two NHIES conducted in 1993/1994 and in 2003/2004 were:

- The sample in 2003/04 comprised more than twice as many households. One implication is that sampling errors are reduced and estimates are thus statistically more accurate. It follows that more lower level disaggregation of results can be done without compromising robustness.
- In the most recent survey, a deliberate effort was made to improve the data collection especially when it came to reported consumption and income, and a larger

number of "in-frequent" annual expenditure items were collected directly in 2003/2004.

- To qualify as a household member in the 2003/2004 survey, a person would have stayed in the household at least two weeks of a four weeks period. In the 1993/1994 survey, a person qualified as a household member having stayed at least one week of a four weeks period.
- In the 2003/2004 survey, modern technology was used for data processing and data cleaning, for instance the data on Form 1 was captured using digital scanning.
- The latest survey also included a module which measured the height and weight of all household members in order to provide a basis for a comprehensive assessment of the nutritional status of Namibians.

When comparing the results from the two surveys the effects of improved methodologies and better coverage are difficult to separate from actual observed changes especially when it comes to the income and expenditure data. Therefore, the Central Bureau of Statistics generally advises that the users of the NHIES data treat observed changes over time between the two surveys as more indicative of direction rather than as precise estimates. Work is currently underway to strengthen comparability between the two surveys and use the 1993/1994 survey as a benchmark for further analysis of poverty and inequality in Namibia.

ANNEX B: Poverty measures in Namibia and other SADC countries

Poverty assessments typically begin by making two analytical choices. Firstly, a measure of welfare or deprivation is selected, for instance income or consumption expenditure, and secondly a threshold—poverty line—is determined for that measure in order to distinguish the poor from the non-poor. A poverty line can serve several useful purposes. It can be used for monitoring poverty over time, tracking trends and changes in poverty levels; it can be used for developing a poverty profile that describes the characteristics of the poor and the environment in which they live; it can be used for targeting and defining entitlements such as social grants; and it can be a focus for public debate around initiatives and policies to fight poverty.

Poverty measures and poverty lines are generally either relative or absolute in nature. A relative poverty line is determined from a cut-off point in the welfare distribution below which a share of the population or households are located. Examples of such cut-offs vary but are typically set at 30-50 percent, i.e. those with incomes of 30-50 percent below the mean are considered poor. An absolute poverty line on the other hand is anchored explicitly in a specific level of welfare that is predetermined and which separates the poor from the non-poor. The absolute poverty line is typically based on the Cost of Basic Needs (CBN) required by households to meet a minimum daily nutritional requirement and certain essential non-food items (e.g. clothing and shelter). The main alternative method put forward in the literature to the CBS approach is the Food Energy Intake (FEI) method, which is not anchored in any bundle of goods but rather produces an estimate of the income/expenditure level where the typical household is able to meet its nutritional requirements. However, a principal advantage of the CBN over the FEI approach is that it is welfare consistent so that individuals with the same kind of living standards are treated equally (Ravallion 1992; Ravallion and Bidani 1994).[3]

Both relative and absolute approaches have been applied in Namibia in the past. For instance, Yaron et al (1992) used a 1989 food basket from Botswana to analyse poverty in five communities in Namibia's northern Okavango Region. The value of the basket was adjusted for inflation and an adult equivalence scale was applied to account for differences in the age and sex composition of households. On this basis, 40 percent of households were found to be "food insecure", i.e. not able to meet the costs of the food basket, and an additional 13 percent were found to not have sufficient income to cover the costs of the food basket scaled up by one-third to allow for basic non-food needs. The sum, 53 percent, was classified as "generally poor". A similar approach was taken by Van Rooy et al (1994), in a survey of 225 households in three communities representing "different situations" in Namibia. The subsequent analysis tested the methodology for drawing a poverty line based on the cost of basic needs approach (for simplicity the Botswana food basket was used again)

[3] On the other hand, it has also been suggested that a single national food bundle may be inappropriate in settings where the food consumption patterns of the poor are heterogeneous because of differences in the relative prices of staple foods (Tarp et al 2002).

and the standard Forster-Greer-Thorbecke (FGT) measures were calculated (more on these measures below), and micro-simulations were done on the impact of cash transfers.

An alternative approach was followed in the analysis of the nation-wide 1999 Levels of Living Survey (CBS 2001), which used a relative poverty line by defining the poor as all those who had incomes of less than the national average. On that basis, 76 percent of households in Namibia were classified as poor, with incidence in several regions above 90 percent. Unfortunately, this study did not elaborate on how this particular poverty line was arrived at. In principle, a relative poverty measure is both simple and transparent, and can be useful in identifying a population sub-group upon which to focus attention. However, the approach has a couple of disadvantages (Lanjouw 2001). Firstly, the relative poverty line is not particularly useful for some purposes such as measuring poverty over time and space: irrespective of the income level, there will always be some in the population that have incomes that are below the mean (except from the unlikely situation where everyone has the exact same income, of course). If all incomes increase by the same proportion, the poverty line will increase by the same proportion and the poverty measure will remain unchanged. Similarly, the approach does not allow for comparisons across regions. Secondly, the relative poverty line is essentially quite arbitrary and it is not clear from the 1999 survey why the poverty level was defined as the mean level of expenditure. Usually, applications of the relative poverty measure do not make use of some proportion of the mean, e.g. 50 per cent, which does not make it less arbitrary nor does it address the problems of comparability. However, in a high inequality society like Namibia average levels of income are particularly unsuitable as an indicator of welfare. Also problematic, the study used unweighted data for the analysis, which meant that even if the survey sample was nationally representative, the reported results were not.

International development agencies working with Namibia also weigh in on the application of poverty measures in the country. For instance, the World Bank estimates poverty levels using the share of the population that lives below daily poverty thresholds of US$1 adjusted for Purchasing Power Parities (PPP). The most recent estimate for Namibia is for 1993 with 35 percent of the population living on less than US$ 1 PPP per day (World Bank 2007). The US$ 1 poverty line is also the one that is used to monitor global progress towards the first of the eight Millennium Development Goal to "Eradicate Extreme Poverty" and specifically the target: "Reduce by half the proportion of people living on less than a dollar a day" by 2015 compared to a 1990 base line. While the US$ 1 PPP poverty line may be practical for international comparisons, it is less useful for national poverty measurement especially since it relies on the conversion from national currencies into US$ using PPP. So for country level monitoring, it is generally advised that countries use an official threshold (or poverty line) set by the national government based on the specific characteristics of the country (United Nations 2003). UN agencies traditionally include but go beyond the money-metric approach and UNDP has defined a set of composite indices which in addition to income include educational and health outcomes to measure progress and setbacks in human capabilities. These indices are published annually in the UNDP Human Development Report using internationally comparable data for most of the world's countries. Moreover, the Human Development Index and Human Poverty Index (HPI) are calculated for Namibia using official national data sources. The HPI for Namibia includes an income

poverty estimate, based on the national poverty line, in addition to the adult illiteracy rate and the risk of dying before the age of 40 (Levine 2007).

All these efforts notwithstanding, as the custodian of the statistics system and ultimately responsible for setting national standards in social and economic statistics, the official poverty line for Namibia is determined by the Central Bureau of Statistics. In the two previous NHIES reports, poverty was defined using a food-share approach, which is a variant of the absolute poverty measures. The food-share approach is based on the empirical observation of an inverse relationship between overall household incomes and the share spent on food, which implies that relatively poorer households spend a higher proportion of their total consumption expenditure on food compared to more well-off households.[4] On that basis, the Central Bureau of Statistics defined "poor" households as those spending 60 percent or more of total consumption expenditure on food, and the "severely poor" as those spending 80 percent or more. These cut-off points have been used in both NHIES and have served as the official poverty lines referred to in major strategies and policies for national development and poverty reduction. The origin of this specific poverty measure as well as the methodological justification for choosing it during the first NHIES has not been documented.

Figure B-1: Non-parametric Engel curve for Namibia

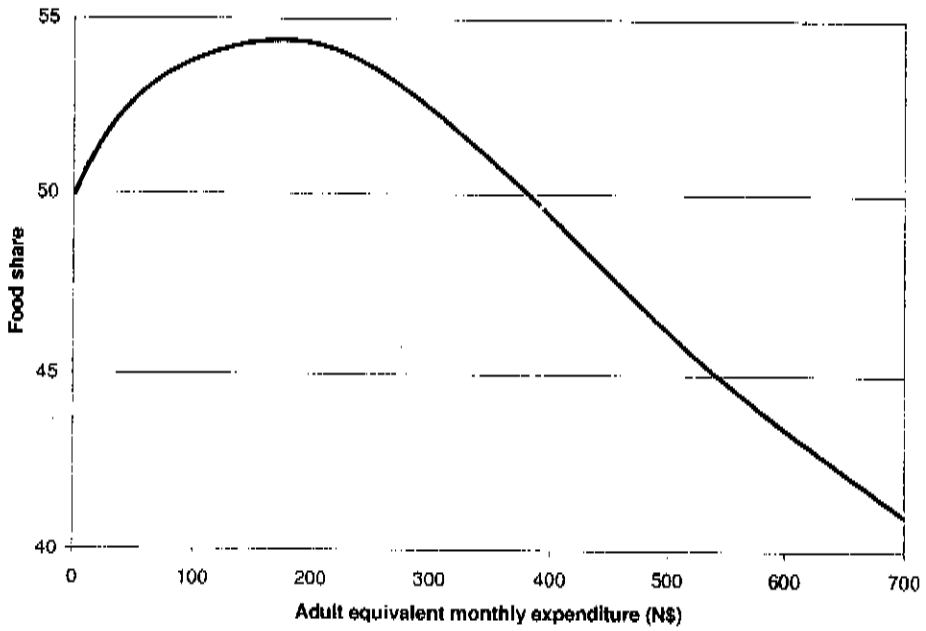


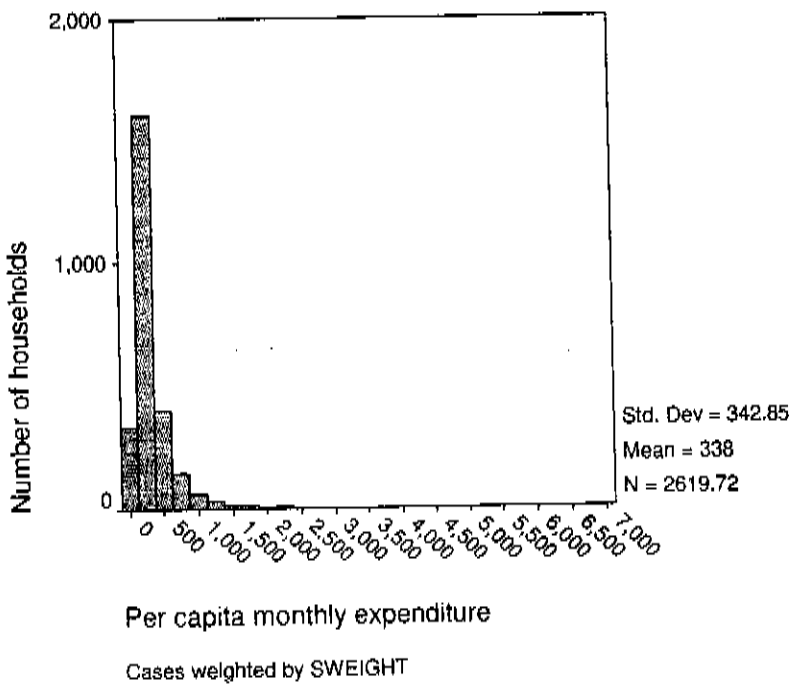
Figure B-1 shows the relationship between the food-share of household expenditure and the monthly adult equivalent expenditure from the NHIES. Two features stand out from the graph. Firstly, that the data appears to confirm the inverse relationship between total consumption and food consumption. Secondly, that this does not hold at the lowest consump-

[4] This relationship is often referred to as "Engel's Law" after the 19th Century Prussian statistician Ernst Engel who in a study of the budgets of Belgian worker families concluded a.o.: "The poorer is a family, the greater is the proportion of the total outgo which must be used for food" (see Zimmerman 1932).

tion levels where the food-share appears to be rising with rising income. This lends support to the unity elasticity observation and implies that while there may be a general relationship between level of income and the share spent on food, using a cut-off point in the food-share distribution to identify the poor and the poorest of the poor is problematic.

On Figure B-2, the distribution of total monthly and adult equivalent expenditure of households are illustrated for those households with a food-share of 60 percent or more. The figure shows how the food-share method identifies households as poor even if they have adult equivalent expenditure levels of more than N$ 1,000 and up to as high as N$ 7,000. The average for the group is N$ 382. Figure B-3 makes the same comparison but for households with food-shares of 80 percent or more. This classification used to identify "severely poor" includes households with adult equivalent expenditure as high as N$ 3,800, and the average expenditure for this group is even higher (N$ 411) than for those with 60 percent food-share. While setting poverty lines invariably involves a degree of arbitrariness, there appears to be a problematic misspecification of households using the food-share method and this misspecification is particularly problematic when it comes to the poorest of the poor.

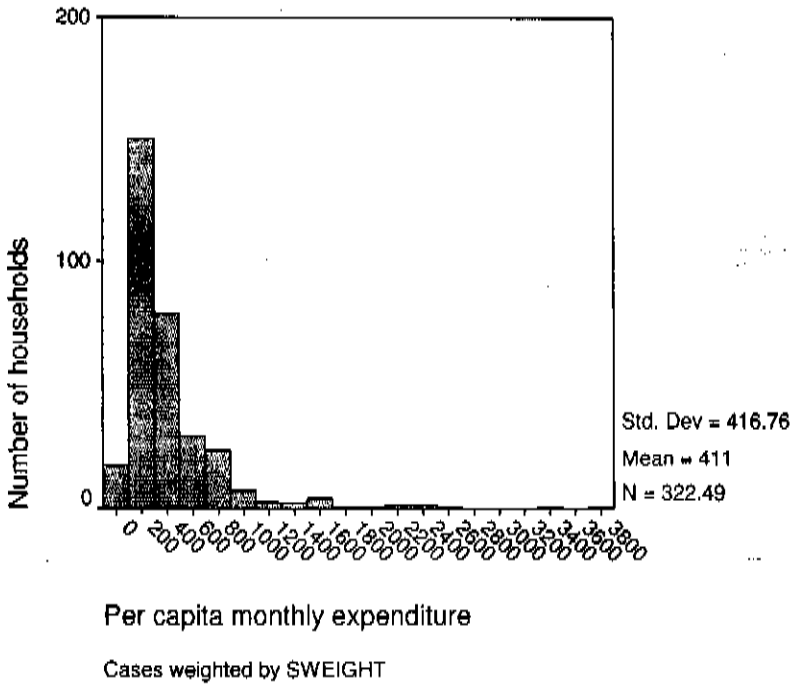
Figure B-2: Expenditure distribution among households with food-share 60% or more



The empirical literature on poverty measurement covers a range of strengths and weaknesses related to the food-share method. For instance, Ravallion (1992) notes that a major drawback of setting a poverty line using the food-ratio method is that the relationship between the food-share and consumption will generally differ across households for reasons unrelated to poverty rather reflecting differences in the relative prices, tastes and availability. Moreover, the income elasticity of demand for food can be close to unity for very poor

households, which renders the indicator unreliable. However, food-share data can sometimes provide a useful *supplementary* test, particularly if one is worried about the quality of, for example survey data or the price deflator. Ravallion and Huppi (1991) thus find that in applying the food-share data, the same qualitative conclusions are arrived at in comparing poverty over time and across sectors in Indonesia as the ones reached for consumption and income data. This is taken as adding strength to the conclusion of the paper that poverty in Indonesia had declined. Nevertheless, as noted by Deaton (1997:2): *"even if our main concern is with food, and if we believe that food consumption is a rough but useful measure of welfare, why focus on the share of food in the budget in preference to more direct measures such as food consumption or nutrient intake?"*

Figure B-3: Expenditure distribution among households with food-share 80% or more



While moving from the food share method to the CBN approach in Namibia would make methodological sense, it would also bring the country closer to the methodologies applied in other countries. United Nations Statistics Division (2005) finds that the large majority of developing countries follow the CBN approach in producing income or expenditure based poverty statistics. Looking specifically at the SADC region, it is clear that Namibia stands out in its present choice of poverty measure. Table B-1 provides a comparison between Namibia and a selection of countries in the sub-region. Several features are noteworthy. Most significantly, it is clear how the majority of countries apply an absolute measure in the form of the CBN approach to setting the official poverty line. Major exceptions are Mauritius, which uses a relative measure as is often the case for more developed societies and Namibia with its food-share method. It is important to also to note that while most countries apply a CBN approach, there are great variations in its application, notably how

the food basket is determined, how adjustments are made for adult equivalents and how the non-food components are determined. On this basis, it can be concluded that by adopting a CBN approach to poverty measurement, Namibia would be more aligned with international practices, and that even then, the country could enjoy considerable methodological flexibility in setting its poverty line.

Table B-1: Definitions of income poverty in selected SADC countries

Country	Official poverty line definition	Poverty incidence	Latest data source (previous surveys)
Botswana	CBN; National Poverty Datum Line and US$ 1 PPP	Poverty Datum Line: 30.3%; US$ 1: 23.4% (p)	2002/03 Household Income and Expenditure Survey (1993/94)
Lesotho	CBN: food basket adjusted for adult equivalent, and non-food	Very poor (food poor): 29.1%; Poor: 50.2% (hh)	2002/03 Household Budget Survey (1994/95)
Tanzania	CBN: food basket (RDA 2200 kcal) and non-food; consumption adjusted for adult equivalent.	Food poverty: 18.7%; Basic needs poverty: 35.7% (p)	Household Budget Survey 2000/01 (1991/92)
South Africa*	CBN: food basket (RDA 2261 kcal) and non-food	Lower bound: 52.6%; Upper bound: 70.4%	2000 Income and Expenditure Survey (1995)
Swaziland	CBN: food basket (RDA 2100 kcal) and non-food; consumption adjusted for adult equivalent.	Extreme (food) poverty: 33%; Poverty: 69%	2000-2001 Swaziland Household Income and Expenditure Survey (1994/95)
Malawi	CBN: food basket and non-food	Ultra (food) poor: 22.3%; Poor: 52.4% (p)	Second Integrated Household Survey 2005 (1998)
Mauritius	Relative poverty line set at the half the median household income per adult equivalent	Poor: 8% (hh)	Household Budget Survey 2006/07 (2001/02, 1996/97)
Namibia	Food expenditure as share of total expenditure	Poor (food-share is 60% or more): 27.9%; Severely poor (80% or more): 3.9% (hh)	2003/2004 Namibia Household Income and Expenditure Survey (1993/94)
Zambia	CBN: food basket and non-food; consumption adjusted for adult equivalent.	Extreme poverty: 57.9%; Overall poverty: 72.9%	Living Condition Monitoring Survey 1998 (1996, 1993, 1991)
Zimbabwe	CBN: food basket and non-food	Population below food poverty line (Extreme poverty): 58%; Population below poverty line (Poor+Very poor): 72% (p)	2003 Poverty Assessment Study Survey (1995)

** Not yet formally adopted by the statistics office.*
Note: CBN=cost of basic needs approach, (p) = persons, (hh) = households,
Sources: Information released in official printed or online survey reports or national poverty reduction strategies.

ANNEX C: Setting the poverty line

Setting up an absolute poverty line for Namibia using the CBN approach has been a fairly labour intensive process and has included a series of methodological steps. Each of these steps have been made after careful analysis and review of the extensive international literature, extensive discussions among the technical team members and outside experts, and decisions ultimately sanctioned by the management of the Central Bureau of Statistics. In the following, the process of developing a new poverty line for Namibia is broken down into a series of methodological steps that follow once the decision has been made to adopt a CBN approach. This work precedes that of Van Rooy et al (2006), which first applied the methodology to the 1993/1994 survey.

Step 1: Determine the energy requirements

The first step in setting the poverty line is to determine the cut-off point or threshold of basic needs. A poverty line that uses a CBN approach typically emphasises food as the most basic need and it is therefore linked to a minimum level of calorific requirements. These requirements should ideally be determined through national nutritional studies and be computed for different groups of persons defined according to sex, age and level of activity (see FAO/WHO/UNU 1985). One review of country experiences in setting energy thresholds found a range in the applications from 2,000 kcal in the Maldives to 3,000 kcal in Uganda (UNSD 2005). For the purposes of this report, the minimum calorific requirement is set at 2,100 kcal on average per person. This is the standard currently used by the Ministry of Health and Social Services (MoHSS) and international agencies, for instance the World Food Programme (WFP) uses this standard/measurement when determining emergency food aid. It is also the value that is used by several other middle income countries including Thailand, Turkey and Swaziland. It should be noted that sensitivity tests showed that varying the calorific threshold from 2000-2300 kcal had limited impact on poverty levels, suggesting that the poverty line is quite robust to the choice of calorific threshold. Nevertheless, it is recommended that using the extensive nutrition data as collected during the NHIES, a new and more detailed scale of energy requirements be developed. This is one among several points for follow-up identified as part of this analytical process.

Step 2: Select the reference group

The second step towards a CBN-based poverty line is to select the reference group. This basically involves choosing between households and individuals, and if the former is chosen, adjusting for differences in age composition. Adult equivalence scales recognise that, for example, a household composed of four adults need a different level of resources than a household composed of one adult and three children in order to reach the same level of economic welfare. On an aggregate level, the use of equivalence also helps adjust for changes over time in the structure of the population, which is particularly relevant in Namibia's case of falling fertility since 1990. In the NHIES, children under the age of 5 are assigned a weight of 0.5 in terms of adult equivalent needs and children between 6 and 15 are assigned a weight of 0.75. Adults 16 years and over, irrespective of gender are assigned

a weight of 1.[5] This scale was used in the poverty analysis presented in this report.[6] The choice of equivalence scales and economies of scale parameters can make quite a difference and during the course of the analysis several scales were tested. In the analysis presented in this report, no adjustment is made for economies of scale but this issue could be revisited in the future. Again, the nutrition data of the NHIES could be used to develop a more detailed set of equivalence scales.

Step 3: Determine the contents of the food basket

The next step involves selecting the specific goods that should go into the food basket. There are a number of ways of doing this. In the present analysis, the food basket is based on the top purchased items of households in 2nd to 4th consumption expenditure deciles in the survey. The bottom decile of the distribution (i.e. the 10 percent with the lowest expenditure levels) were excluded to eliminate outliers. On this basis, the top 30 *purchased* food/beverage items were selected for the food basket together with the 15 most commonly consumed *in-kind* food items (e.g. from own-production). Sensitivity analysis showed that the results were robust to changes in the specification of the poverty basket to allow for more items. This approach for selecting the food basket was preferred because it is based on the actual consumption patterns of the lower deciles of expenditure distribution. This way it is ensured that the food and beverage items in the basket are consistent with local tastes and preferences. Moreover, very expensive, luxury-type food items, unlikely to be consumed by the poor are not heavily represented in the basket. The specific items in the national food basket are found in Annex D.[7]

Step 4: Set price of food items

The prices for each of the items in the food basket was determined by using information from the collection of the Consumer Price Index (CPI). In the few cases where the CPI does not include the specific item prices, the daily record books were used. Regional price differences were accounted for in the compilation of the food basket by using CPI data.

[5] The source of this scale is still unknown. The NHIES 1993/94 Report makes reference to: SSD Research Report 10 (1994), UNAM, February. Another study suggests that the scale in use emanates from the Botswana poverty datum line. See: Ekström, E (1998), "Income Distribution and Labour Market Discrimination: A Case Study of Namibia," Research Institute of Industrial Economics (IUI), IUI Working Paper Series No. 502, October. Here a reference is also made to: Central Statistics Office, "The distribution of economic resources in the population of Namibia, Some highlights," 1995, National Planning Commission, Windhoek.

[6] Often in studies of poverty an additional adjustment is made for economies of scale arising as the size of the household increases however there exists little guidance for choosing the value of the parameter (White and Masset 2003; Deaton and Paxson 1998; Lanjouw and Ravallion, 1995).

[7] The team also conducted some preliminary experimental analysis on more region specific food baskets. This work revealed some diversity in the food consumption habits of the poor. For regions such as Ohangwena, Oshikoto and Oshana only a few items were not the same as in the national basket but for less populous regions of Hardap and Karas in the south of the country more than a third of the purchased items and more than two thirds of in-kind items changed. This will affect the food poverty line especially for these regions. Moreover, region specific differences in non food expenditure appear important in especially pushing up the upper bound poverty line in urban regions such as Khomas and Erongo. As a follow-up to this report on the national poverty line the team will pursue additional analysis that will aim to investigate these regional differences further. It will be critical to account for differences in the level of the region specific poverty lines that are attributable to preferences and tastes, availability of certain foods, their relative prices, as well as the standard of living among the poor.

Since 2004, collection points for the CPI have been expanded beyond Windhoek to include 8 regional groupings although data is still only collected in urban areas. There is an important lesson for the next NHIES to include a survey of prices.

Step 5: Calculate the food poverty line

With all this information at hand, the food poverty line can be calculated. First, the average expenditure per capita for each of the 45 items are converted into daily calorific values using nutritional data on calorie content per gram. Then the costs for each household in meeting the daily calorific minimum of 2,100 kcal for its members can be calculated. This represents the food poverty line and based on the 2003/2004 NHIES, this was calculated as N$ 127.15

Step 6: Include non-food items

While having sufficient resources in the household to meet food requirements is critical, it is not enough for the poverty classification. This is so because households that can afford to meet food requirements of all members, but lack resources to purchase clothing and shelter, for example, should likely be considered deprived in a very basic sense. There are several ways of including these essential non-food items. Two approaches stand out. Under the first approach, non-food expenditure is calculated from actual expenditure on non-food items by households with food expenditure approximately equal to the food poverty line. Under the second approach, non-food expenditure is calculated from actual non-food expenditure of households whose consumption expenditures are equal to the food poverty line. The rationale for the latter, more austere approach is that if these households have the ability to obtain the minimum food basket, but choose to divert resources to buy non-food items, then the household must clearly view these items as essential. In the literature, both methods are found to be methodologically sound and they are often considered together as a lower and upper bound, respectively (Ravallion 1998). In the subsequent poverty analysis for Namibia, both measures are applied and should be interpreted as representing a range of poverty in the country. Since no group of people have total expenditure, or food expenditure, exactly equal to the food poverty line, a simple nonparametric procedure was used. The median non-food expenditure per capita was calculated for households with per capita *total* expenditure in a small interval (plus or minus one percent) around the food poverty line. Successively, larger intervals were selected, a total of five times so that the largest interval is ±5%, and a simple average was taken of the five observations of median non-food expenditure per capita around the food poverty line.[8] Table C-1 shows the values of the food poverty line as well as the upper and lower poverty lines for the 2003/2004 NHIES.

Table C-1: Annual values of poverty lines, monthly N$ per capita

Poverty line	2003/2004
Food poverty line	127.15
Lower bound poverty line: "severely poor"	184.56
Upper bound poverty line: "poor"	262.45

[8] This approach was proposed by Ravallion (1998) and applied in e.g. Nepal (Lanjouw 2001) and Lesotho (May and Roberts 2005).

Step 7: Choose measures for analysis

Once the poverty lines have been determined, the final step is to select the measures to express the shortfall and deprivation. The first poverty measure to define is the *poverty headcount* or *incidence of poverty*. This is the share of the population that has an income y that is less than the poverty line z.

If the population size is n and the share of poor people is q, then the poverty headcount is given by:

$$H = \frac{q}{n}$$

However, as a poverty measure H has some limitations because it does not recognise the size of the aggregate income shortfall of the poor as well as the distribution of income among the poor. As has become standard in poverty research, the analysis presented for Namibia uses the more general Foster-Greer-Thorbecke (FGT) class of poverty measures given by:

$$P\alpha = \frac{1}{n}\sum_{i=1}^{q}\left[\frac{z - y_i}{z}\right]^{\alpha}$$

While an infinity of poverty measures can be derived depending on the value of the parameter α, three measures are of particular interest:

1. In the case that α equals 0, then we have $P0 = H$, i.e. the poverty headcount measure.
2. $P1$ (α equals 1) is referred to as the *poverty gap* measure and indicates the average aggregate consumption expenditure shortfall, or depth of poverty, of those below the poverty line.
3. $P2$ (α equals 2) is the squared poverty gap and referred to as the *severity of poverty* as it places greater weight on those that are further from the poverty line.

The Foster-Greer-Thorbecke set of indices has the agreeable feature that the indices may be decomposed. This way, one may calculate how large a share of the contribution to poverty a subgroup of the population make.

ANNEX D: The national food basket

Table D- 1: Purchased items

		Ave annual exp (N$)	Ave monthly exp (N$)	No. HH consuming item	No. HH not consuming item	% consuming item	N*Ave exp
1.	Maize meal/grain/samp	641.00	53.42	64434	47074	58	3441823
2.	Beef	327.59	27.30	70643	40865	63	1928498
3.	Sugar, all types	270.89	22.57	72151	39357	65	1628715
4.	Bread (all types)	107.26	8.94	67698	43809	61	605129
5.	Frozen fish	145.80	12.15	42827	68681	38	520347
6.	Cooking oil	102.50	8.54	53251	58257	48	454835
7.	Rice	85.60	7.13	38808	72700	35	276833
8.	Soft drinks	73.96	6.16	38184	73323	34	235353
9.	Fresh fish	66.27	5.52	27715	83793	25	153062
10.	Mahangu meal/grain/samp	93.55	7.80	17618	93890	16	137345
11.	Powdered soup	37.89	3.16	38828	72680	35	122591
12.	Chicken	68.52	5.71	20104	91404	18	114800
13.	Local home-made brew, all types (Ombike, tombo, kashipembe)	39.63	3.30	31912	79596	29	105400
14.	Beer/ales/ciders	62.22	5.19	17218	94290	15	89276
15.	Breads, cake flour (all types)	67.34	5.61	15514	95994	14	87059
16.	Macaroni, spaghetti, noodles	42.65	3.55	24355	87152	22	86558
17.	Fresh milk	42.64	3.55	24150	87358	22	85810
18.	Potatoes, English	45.97	3.83	19352	92156	17	74126
19.	Sweets	23.36	1.95	32892	78615	29	64023
20.	Tea	30.28	2.52	23779	87729	21	59993
21.	Bottled/Tinned fish	34.38	2.86	20901	90607	19	59874
22.	Goat meat	41.53	3.46	16589	94919	15	57413
23.	Traditional sour milk	22.07	1.84	15603	95905	14	28702
24.	ONION	14.02	1.17	23943	87565	21	27982
25.	Tomatoes	16.34	1.36	20168	91340	18	27463
26.	Salt	11.95	1.00	24704	86804	22	24597
27.	Coffee	17.47	1.46	16503	95004	15	24022
28.	Dried fish	19.07	1.59	13631	97877	12	21667
29.	Vetkoek	11.12	0.93	23277	88231	21	21564
30.	Fruit juice and squashes	16.79	1.40	15236	96272	14	21315

Table D-2: In kind items

	Ave annual exp (N$)	Ave monthly exp (N$)	No. HH consuming item	No. HH not consuming item	% consuming item	N*Avexp
31. Mahangu meal/grain/samp	1160.37	96.70	67218	44290	60	6499846
32. Spinach/ombindi/derere/ mutete/ekaka	186.61	15.55	66867	44641	60	1039822
33. Maize meal/grain/samp	232.46	19.37	33340	78167	30	645865
34. Beef	163.88	13.66	38445	73063	34	525027
35. Beans (dried)	106.81	8.90	34348	77160	31	305713
36. Chicken	108.96	9.08	30263	81245	27	274783
37. Magau/Oshikundu	122.96	10.25	24648	86860	22	252551
38. Goat meat	146.91	12.24	19750	91757	18	241802
39. Traditional sour milk	68.14	5.68	24315	87193	22	138066
40. Baby marrows (squash) Pumpkins and squashes, all types	75.33	6.28	20007	91501	18	125596
41. Beans (fresh)	107.31	8.94	13763	97745	12	123074
42. Fresh milk	73.50	6.13	18952	92555	17	116086
43. Local home-made brew, all types (ombike, tombo, kashipembe)	56.55	4.71	20435	91073	18	96296
44. Ground nuts/Eefukwa	61.18	5.10	13218	98290	12	67392
45. Fresh fish	44.40	3.70	12956	98552	12	47938

ANNEX E: First-order stochastic dominance tests

Setting the poverty line invariably involves an element of arbitrariness as to where the cut-off that separates the poor from the non-poor is eventually made. In Annex C, it was described how during the design of the poverty line, various tests for robustness were conducted. In this Annex, an important additional test for robustness of the poverty measure is conducted using graphical techniques and the theory of stochastic dominance. By plotting the cumulative function of houschold expenditure, sometimes called the 'poverty incidence curve', of different subgroups of households, it is possible to assess whether the ranking of these groups in terms of poverty levels are robust with respect to the poverty line.

An example is given on Figure E-1, which plots the cumulative distribution functions of urban and rural households in Namibia. For a given level of household expenditure on the horizontal axis, reading off the vertical axis for one of the curves indicates the incidence of poverty, which would result if a poverty line equal to that expenditure level had been selected. For example, the upper-bound poverty line of N$ 262.45 implies a headcount rate of almost 40 percent in rural areas and just over 10 percent in urban areas. What is more, at any given level of the poverty line, the poverty headcount will be higher in the rural areas compared to urban areas. Since the curve representing urban at all points lies below the curve representing rural without any point of intersection, then following Foster and Shorrocks (1988), it can be stated that the former dominates the latter in the first order and it can be concluded that poverty as measured by any of the FGT measures in rural Namibia is higher than in urban Namibia, irrespective of where the poverty line is drawn. A similar conclusion can be drawn when it comes to other background variables. On Figure E-2, the cumulative distribution functions of male- and female-headed households are plotted. The difference in poverty levels between the two sexes is evidently small, but nevertheless, the conclusion that female-headed households are poorer is visibly robust to the specification of the poverty line. Figure E-3 and Figure E-4 provide further illustrations of first-order stochastic dominance, confirming that the conclusions regarding the linkages between the poverty status of the household and the level of education and main source of income are robust to the of the specification of the poverty line.

The type of stochastic dominance described here seizes to exist if cumulative distribution curves intersect at some point. Then, it is no longer the case that the same ranking of poverty would remain over all possible poverty lines and FGT measures. This is the case when it comes to the regions in Namibia as exemplified in Figure E-5. Each line represents the cumulative distribution function for one of the 13 administrative regions. The performance of three regions is highlighted for illustrative purposes. Firstly, it is clear that Erongo dominates all other regions, irrespective of where the poverty line is set. Secondly, at higher levels of expenditure, there are a number of points of intersection and this affects the ranking. For instance, if the poverty line is set below N$ 500, then Caprivi is ranked 5th in terms of poverty headcount but thereafter the rank rises above several regions, including Oshikoto as indicated, and at a poverty line above N$ 1,200 Caprivi is ranked 1st.

Figure E-1: Cumulative distribution functions for urban and rural households

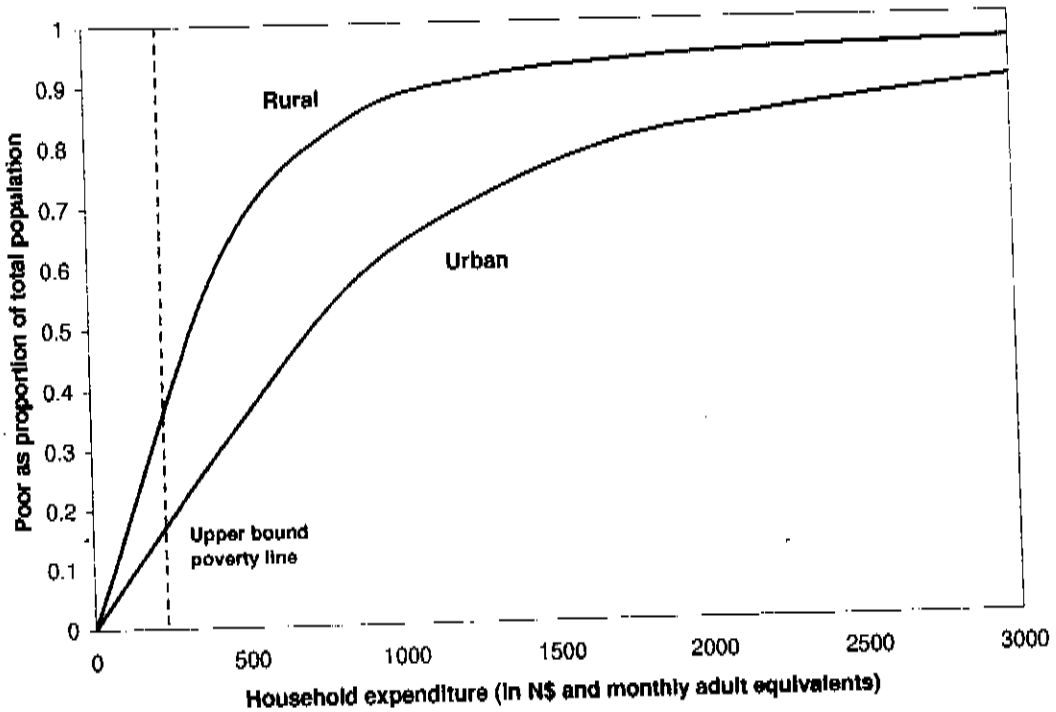


Figure E-2: Cumulative distribution functions for male and female-headed households

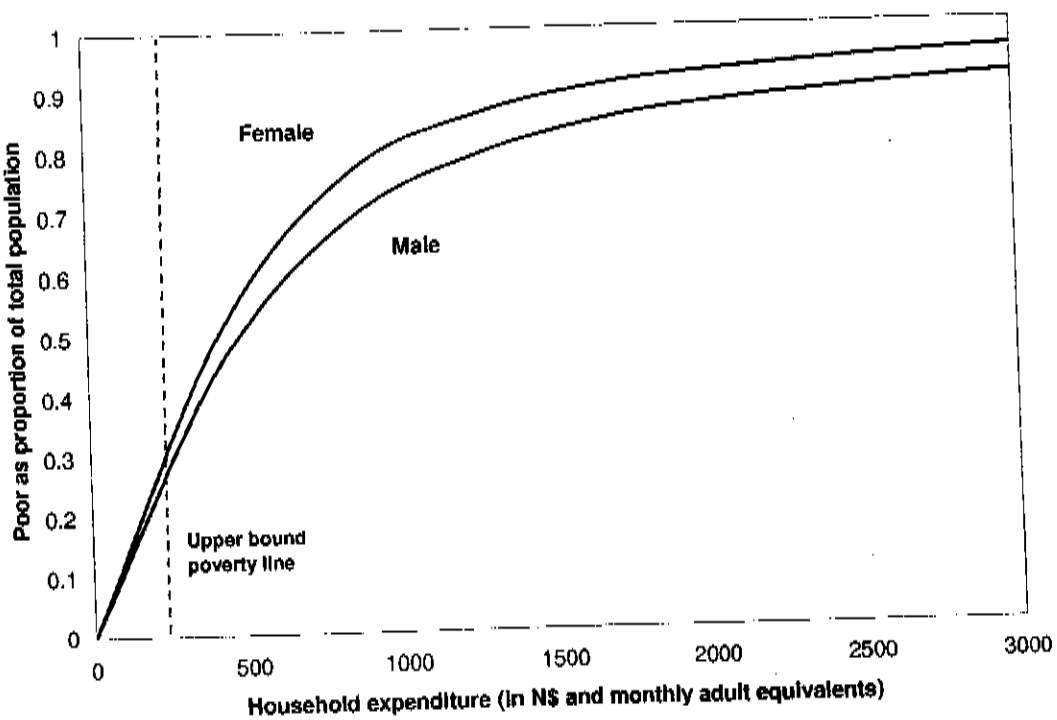


Figure E-3: Cumulative distribution functions by highest level of education attained by the head of household

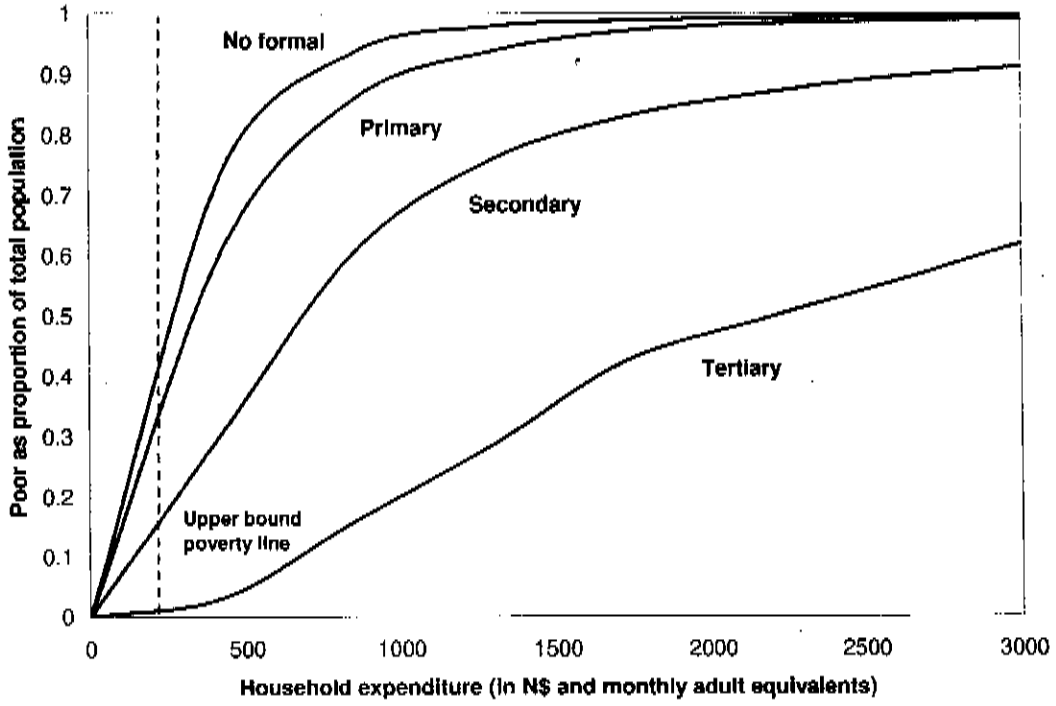


Figure E-4: Cumulative distribution functions by main source of income

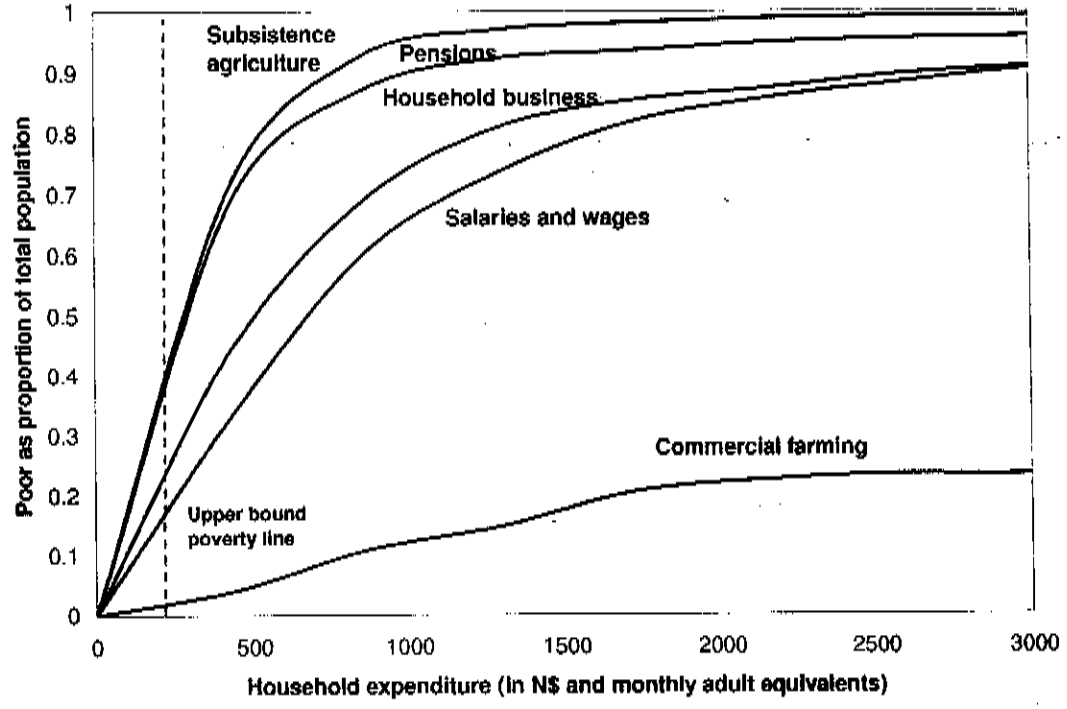
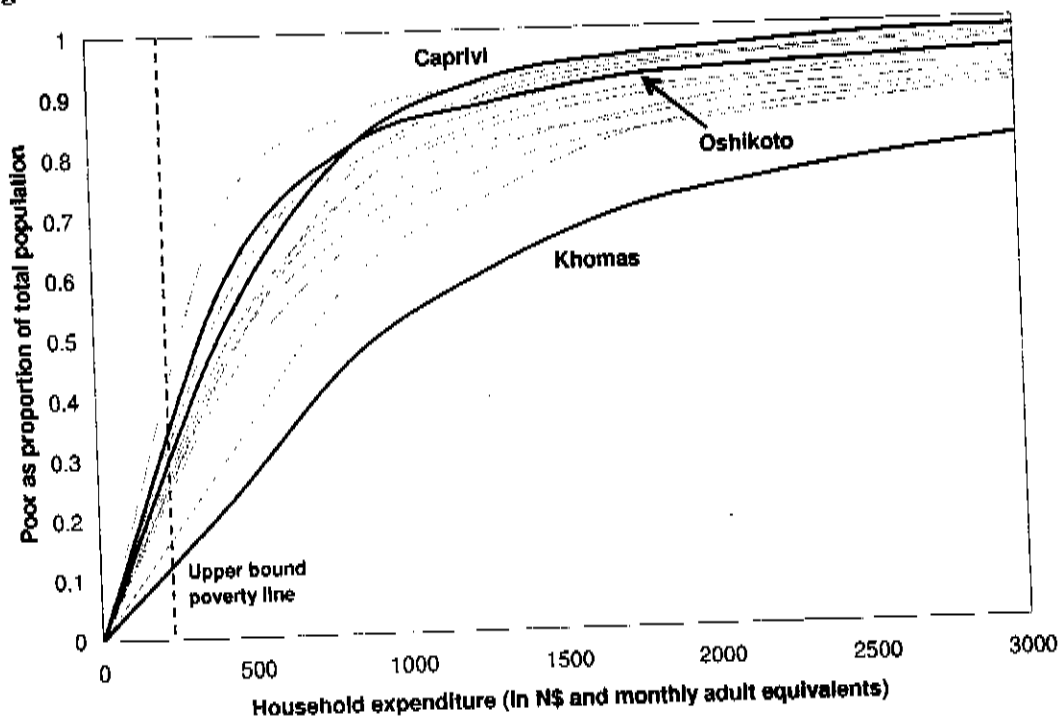


Figure E-5: Cumulative distribution functions by region



ANNEX F: Poverty profile tables

Table F-1: Incidence, depth and severity of poverty by region and urban/rural (%)

	"Severely poor": Lower bound poverty line (N$184.56 per adult equivalent)				"Poor": Upper bound poverty line (N$262.45 per adult equivalent)				
	P(0) incidence	(P1) depth	(P2) severity	Poverty share	P(0) incidence	(P1) depth	(P2) severity	Poverty share	Number of households
Caprivi	12.5	3.4	1.4	4.5	28.6	8.7	3.7	5.2	18607
Erongo	4.8	1.5	0.6	2.6	10.3	3.3	1.5	2.8	27713
Hardap	21.9	7.3	3.3	7.0	32.1	13.1	6.9	5.1	16365
Karas	12.5	4.2	2.0	3.8	21.9	8.1	4.1	3.3	15570
Kavango	36.7	12.5	6.0	23.2	56.5	23.0	12.1	17.8	32354
Khomas	2.4	0.5	0.2	3.0	6.3	1.6	0.6	4.0	64918
Kunene	13.1	4.1	1.9	3.4	23.0	8.3	4.1	3.0	13365
Ohangwena	19.3	4.4	1.4	14.2	44.7	12.7	5.0	16.5	37854
Omaheke	17.5	5.5	2.6	4.5	30.1	10.8	5.4	3.9	13347
Omusati	12.8	3.3	1.3	9.8	31.0	8.5	3.6	11.9	39248
Oshana	7.8	1.7	0.6	4.8	19.6	5.2	2.0	6.1	31759
Oshikoto	16.6	3.7	1.4	10.3	40.8	11.1	4.4	12.7	31871
Otjozondjupa	15.8	4.9	2.1	8.8	27.8	9.9	4.8	7.8	28707
Namibia	13.8	3.9	1.7	100.0	27.6	8.9	4.1	100.0	371678
Urban	6.0	1.8	0.8	17.7	12.0	3.9	1.9	17.7	150532
Rural	19.1	5.4	2.3	82.3	38.2	12.3	5.6	82.3	221145

Table F-2: Incidence, depth and severity of poverty by sex and age of household head (%)

	"Severely poor": Lower bound poverty line (N$184.56 per adult equivalent)				"Poor": Upper bound poverty line (N$262.45 per adult equivalent)				
	P(0) incidence	(P1) depth	(P2) severity	Poverty share	P(0) incidence	(P1) depth	(P2) severity	Poverty share	Number of households
Sex of head of household									
Female	15.1	4.4	1.9	44.4	30.4	9.9	4.6	44.6	150451
Male	12.9	3.6	1.5	55.3	25.8	8.3	3.8	55.2	219709
Not specified	12.4	2.1	0.5	0.4	15.0	5.6	2.3	0.2	1518
Age of head of household									
16-20	14.4	4.5	1.8	1.7	22.5	8.8	4.3	1.3	6041
21-24	10.8	2.6	1.0	3.2	19.1	6.3	2.8	2.9	15349
25-29	8.3	2.3	1.0	5.9	18.2	5.4	2.5	6.4	36081
30-34	7.5	2.5	1.1	6.9	17.9	5.5	2.6	8.2	46835
35-39	10.0	2.8	1.2	9.4	18.7	6.2	2.8	8.7	47878
40-44	12.4	3.7	1.7	10.5	23.1	8.0	3.8	9.8	43390
45-49	12.1	3.4	1.5	8.0	22.4	7.6	3.5	7.4	34040
50-54	12.1	3.6	1.5	7.2	27.0	8.2	3.7	8.1	30795
55-59	18.3	5.7	2.7	7.9	35.4	12.1	5.8	7.6	22158
60-64	23.6	6.5	2.7	10.7	42.6	14.7	6.8	9.6	23194
65+	22.7	6.1	2.5	28.1	47.5	14.6	6.5	29.5	63629
Don't know	12.9	3.5	1.4	0.6	20.9	7.0	3.4	0.5	2288
Namibia	13.8	3.9	1.7	100.0	27.6	8.9	4.1	100.0	371678

Table F-3: Incidence, depth and severity of poverty by main language spoken in household (%)

	"Severely poor": Lower bound poverty line (N$184.56 per adult equivalent)				"Poor": Upper bound poverty line (N$262.45 per adult equivalent)				
	P(0) incidence	(P1) depth	(P2) severity	Poverty share	P(0) incidence	(P1) depth	(P2) severity	Poverty share	Number of households
San	39.0	14.2	7.0	3.8	59.7	24.9	13.5	2.9	4967
Caprivi languages	10.8	2.8	1.1	4.1	24.6	7.4	3.1	4.7	19664
Otjiherero	8.8	2.5	1.1	5.6	17.0	5.6	2.6	5.4	32686
Rukavango	34.9	11.7	5.5	23.6	54.4	21.8	11.4	18.4	34748
Nama/Damara	21.4	7.4	3.4	17.7	34.2	13.6	7.1	14.2	42484
Oshiwambo	11.8	2.7	1.0	41.6	28.5	7.8	3.1	50.5	181395
Setswana	1.0	0.1	0.0	0.0	14.5	2.2	0.5	0.2	1479
Afrikaans	3.5	1.1	0.5	2.7	7.9	2.3	1.1	3.0	39374
German	..	..	..	..	..	..	..	..	4005
English	0.4	0.1	0.0	0.1	0.6	0.2	0.1	0.0	6889
Others	9.6	2.1	0.8	0.7	16.4	5.4	2.3	0.6	3984
Namibia	13.8	3.9	1.7	100.0	27.6	8.9	4.1	100.0	371678

Table F-4: Incidence, depth and severity of poverty by main source of household income (%)

	"Severely poor": Lower bound poverty line (N$184.56 per adult equivalent)				"Poor": Upper bound poverty line (N$262.45 per adult equivalent)				
	P(0) incidence	(P1) depth	(P2) severity	Poverty share	P(0) incidence	(P1) depth	(P2) severity	Poverty share	Number of households
Salaries/Wages	6.6	1.9	0.8	22.3	13.8	4.3	2.0	23.1	172254
Subsistence Farming	17.6	4.4	1.8	36.9	40.3	11.7	4.9	42.3	107519
Commercial Farming	..	0.0	0.0	..	2.6	0.6	0.1	0.1	2753
Non-Farming Business	13.7	3.9	1.6	6.6	24.1	8.4	3.9	5.8	24802
Pensions	28.4	8.4	3.6	18.9	49.6	17.7	8.5	16.5	34159
Cash Remittances	23.1	7.5	3.5	3.8	35.5	13.8	7.2	2.9	8468
Rental Income	..	..	..	..	..	..	..	..	819
Interest from Savings/ Investments	8.9	2.2	0.6	0.1	8.9	4.2	2.0	0.1	633
Maintenance grants	23.6	8.2	3.7	0.9	38.5	15.2	7.8	0.8	2049
Drought relief assistance	53.6	19.0	9.3	1.5	66.0	31.8	17.8	0.9	1423
In kind receipts	25.8	9.4	4.8	3.7	41.1	17.2	9.3	3.0	7391
Other	34.1	11.2	4.9	4.1	56.6	21.2	10.8	3.4	6123
No Income	32.5	12.0	5.9	0.6	57.6	22.8	11.8	0.5	890
Not stated	14.0	5.3	2.5	0.7	28.0	10.9	5.4	0.7	2396
Namibia	13.8	3.9	1.7	100.0	27.6	8.9	4.1	100.0	371678

Table F-5: Incidence, depth and severity of poverty by main source of household income (%)

	"Severely poor": Lower bound poverty line (N$184.56 per adult equivalent)				"Poor": Upper bound poverty line (N$262.45 per adult equivalent)				
	P(0) incidence	(P1) depth	(P2) severity	Poverty share	P(0) incidence	(P1) depth	(P2) severity	Poverty share	Number of households
Salaries/wages	6.6	1.9	0.8	22.4	13.8	4.3	2.0	23.3	172254
Subsistence farming	17.6	4.4	1.8	37.1	40.3	11.7	4.9	42.6	107519
Commercial farming		0.0	0.0	..	2.6	0.6	0.1	0.1	2753
Non-farming business	13.7	3.9	1.6	6.7	24.1	8.4	3.9	5.9	24802
Pensions	28.4	8.4	3.6	19.0	49.6	17.7	8.5	16.6	34159
Cash remittances	23.1	7.5	3.5	3.8	35.5	13.8	7.2	2.9	8468
In-kind receipts	25.8	9.4	4.8	3.7	41.1	17.2	9.3	3.0	7391
Other	30.7	10.3	4.6	6.7	47.5	18.9	9.8	5.2	11047
No income	32.5	12.0	5.9	0.6	57.6	22.8	11.8	0.5	890
Namibia	13.8	3.9	1.7	100.0	27.6	8.9	4.1	100.0	369282

Note: The categories in the former table were collapsed to produce the second due to the small sample sizes in some of the cells. For instance, those reporting drought relief assistance as their main income source only number 40 households (unweighted n).

Table F-6: Incidence, depth and severity of poverty by type of dwelling unit (%)

	"Severely poor": Lower bound poverty line (N$184.56 per adult equivalent)				"Poor": Upper bound poverty line (N$262.45 per adult equivalent)				
	P(0) incidence	(P1) depth	(P2) severity	Poverty share	P(0) incidence	(P1) depth	(P2) severity	Poverty share	Number of households
Detached House	3.5	0.9	0.3	8.6	8.1	2.3	1.0	10.0	126368
Apartment	1.3	0.4	0.2	0.3	2.7	0.9	0.4	0.3	11792
Traditional Dwelling	21.3	5.8	2.5	67.5	43.6	13.8	6.2	69.2	162784
Improvised Housing	18.5	5.9	2.7	22.2	31.9	11.7	5.8	19.2	61716
Other	8.2	2.7	1.2	1.4	14.8	5.0	2.6	1.3	9017
Namibia	13.8	3.9	1.7	100.0	27.6	8.9	4.1	100.0	371678

Table F-7: Incidence, depth and severity of poverty by type of tenure (%)

	"Severely poor": Lower bound poverty line (N$184.56 per adult equivalent)				"Poor": Upper bound poverty line (N$262.45 per adult equivalent)				
	P(0) incidence	(P1) depth	(P2) severity	Poverty share	P(0) incidence	(P1) depth	(P2) severity	Poverty share	Number of households
Owned	18.8	5.4	2.3	88.3	36.9	12.1	5.6	86.8	241125
Owned but not paid off	1.9	0.6	0.2	1.6	4.2	1.3	0.6	1.7	42628
Occupied free	9.5	2.6	1.1	7.8	21.8	6.4	2.8	8.9	41913
Rented w/o subsidy	2.9	0.8	0.3	2.2	6.5	2.0	0.8	2.5	39126
Rented with subsidy	1.0	0.1	0.0	0.1	1.4	0.4	0.1	0.1	6791
Other	..	..	..	..	..	..	..	..	54
Not specified	..	..	..	..	..	..	..	..	42
Namibia	13.8	3.9	1.7	100.0	27.6	8.9	4.1	100.0	371678

Table F-8: Incidence, depth and severity of poverty by material for roof (%)

	"Severely poor": Lower bound poverty line (N$184.56 per adult equivalent)				"Poor": Upper bound poverty line (N$262.45 per adult equivalent)				
	P(0) incidence	(P1) depth	(P2) severity	Poverty share	P(0) incidence	(P1) depth	(P2) severity	Poverty share	Number of households
Cement blocks	1.8	0.2	0.0	0.1	6.3	1.1	0.3	0.2	2438
Bricks	7.4	2.2	0.7	0.2	22.5	5.9	2.3	0.2	1049
Iron/Zinc	9.3	2.8	1.2	37.1	18.0	6.0	2.8	35.8	203568
Poles/sticks/grass	19.2	4.9	2.0	9.7	40.3	12.4	5.4	10.2	25971
Sticks/mud/clay/dung	18.1	4.8	1.9	0.8	29.0	10.5	5.0	0.6	2254
Asbestos	1.3	0.4	0.2	0.4	5.1	1.2	0.5	0.9	17240
Tiles	..	..	..	..	..	..	..	..	928
Slate	13.0	2.3	0.6	0.2	17.1	6.2	2.5	0.1	815
Thatch	23.2	6.5	2.8	50.2	47.0	15.0	6.8	50.9	110990
Other	11.0	3.3	1.6	1.3	17.9	6.7	3.4	1.1	6165
Namibia	13.8	3.9	1.7	100.0	27.6	8.9	4.1	100.0	371678

Table F-9: Incidence, depth and severity of poverty by material for the wall (%)

	"Severely poor": Lower bound poverty line (N$184.56 per adult equivalent)				"Poor": Upper bound poverty line (N$262.45 per adult equivalent)				
	P(0) incidence	(P1) depth	(P2) severity	Poverty share	P(0) incidence	(P1) depth	(P2) severity	Poverty share	Number of households
Cement blocks	3.7	0.9	0.3	10.4	9.4	2.6	1.0	13.3	145317
Bricks	7.2	1.4	0.4	1.4	16.6	4.4	1.6	1.6	9905
Iron/Zinc	19.8	6.4	2.9	22.0	33.3	12.4	6.2	18.6	57029
Poles/sticks/grass	18.9	4.8	2.0	20.4	41.3	12.1	5.2	22.3	55328
Sticks/mud/clay/dung	23.1	6.4	2.7	38.9	46.1	14.9	6.7	38.8	86236
Asbestos	5.4	2.2	1.2	0.2	19.5	4.8	2.3	0.4	2316
Tiles	12.7	2.9	1.0	0.2	12.7	5.8	2.8	0.1	908
Slate	..	0.0	0.0	..	17.2	2.7	0.4	0.0	186
Thatch	36.1	13.7	6.8	3.5	49.2	22.4	12.7	2.4	4912
Other	16.1	6.1	3.3	2.9	27.0	10.7	6.0	2.4	9077
Namibia	13.8	3.9	1.7	100.0	27.6	8.9	4.1	100.0	371678

Table F-10: Incidence, depth and severity of poverty by material for the floor (%)

	"Severely poor": Lower bound poverty line (N$184.56 per adult equivalent)				"Poor": Upper bound poverty line (N$262.45 per adult equivalent)				
	P(0) incidence	(P1) depth	(P2) severity	Poverty share	P(0) incidence	(P1) depth	(P2) severity	Poverty share	Number of households
Sand	21.8	6.5	2.9	57.0	41.9	14.0	6.6	54.7	133987
Concrete	5.1	1.3	0.5	17.6	11.3	3.3	1.4	19.5	177125
Mud/clay/dung	22.6	6.2	2.5	24.8	46.1	14.7	6.5	25.3	56398
Wood	1.2	0.5	0.2	0.0	8.7	1.7	0.6	0.2	1845
Other	9.9	3.9	1.9	0.4	13.4	6.4	3.6	0.3	2232
Not specified	54.3	29.7	16.3	0.1	54.3	37.0	25.2	0.0	92
Namibia	13.8	3.9	1.7	100.0	27.6	8.9	4.1	100.0	371678

Table F-11: Incidence, depth and severity of poverty by source of drinking water (%)

	"Severely poor": Lower bound poverty line (N$184.56 per adult equivalent)				"Poor": Upper bound poverty line (N$262.45 per adult equivalent)				
	P(0) incidence	(P1) depth	(P2) severity	Poverty share	P(0) incidence	(P1) depth	(P2) severity	Poverty share	Number of households
Piped in dwelling	1.6	0.4	0.1	3.3	4.0	1.1	0.4	4.2	106214
Piped on site	9.9	3.0	1.2	10.5	21.6	6.8	3.1	11.5	54324
Neighbor's tap	19.2	5.7	2.5	7.5	38.2	12.5	5.9	7.5	20156
Public tap	19.0	5.4	2.3	35.5	39.0	12.4	5.6	36.4	95600
Water carrier/tanker	16.6	5.1	2.2	0.8	26.0	10.0	4.9	0.6	2358
Private bore hole	23.2	5.3	1.9	4.1	44.9	13.7	5.8	3.9	8958
Communal bore hole	22.8	6.8	3.0	11.4	43.4	14.8	7.0	10.8	25536
Protected well	20.3	5.0	1.9	4.3	43.5	13.3	5.6	4.6	10723
Spring	10.9	0.7	0.0	0.1	20.2	5.9	1.8	0.1	496
Flowing water	34.3	11.0	5.1	11.7	51.9	20.6	10.7	8.9	17514
Rain water tank	35.3	4.1	1.0	0.5	62.1	17.0	6.0	0.5	762
Unprotected well	19.1	5.6	2.5	7.5	39.7	12.4	5.8	7.8	20234
Dam/pool/stagnant water	17.5	3.7	1.1	2.4	40.9	11.6	4.4	2.8	7077
Other	17.3	5.5	2.2	0.5	30.9	10.5	5.1	0.4	1340
Namibia	13.8	3.9	1.7	100.0	27.6	8.9	4.1	100.0	371678

Table F-12: Incidence, depth and severity of poverty by toilet facilities (%)

	"Severely poor": Lower bound poverty line (N$184.56 per adult equivalent)				"Poor": Upper bound poverty line (N$262.45 per adult equivalent)				
	P(0) incidence	(P1) depth	(P2) severity	Poverty share	P(0) incidence	(P1) depth	(P2) severity	Poverty share	Number of households
Flush/sewer	2.3	0.7	0.3	5.7	5.9	1.7	0.7	7.3	127114
Flush/septic tank	3.8	0.4	0.1	0.7	10.3	2.3	0.7	0.9	9276
Pit latrine/VIP	8.1	1.8	0.6	2.2	16.8	5.1	2.0	2.3	14091
Pit latrine/ no ventilation	16.6	4.7	2.0	5.6	33.6	10.5	4.8	5.6	17205
Bucket	24.8	7.6	3.2	2.3	40.5	15.5	7.6	1.9	4702
Other	10.2	2.0	0.5	0.2	22.1	7.0	2.6	0.2	859
Bush	21.6	6.2	2.7	83.4	42.3	13.9	6.4	81.8	197802
Namibia	13.8	3.9	1.7	100.0	27.6	8.9	4.1	100.0	371678

Table F-13: Incidence, depth and severity of poverty by ownership/access to cattle (%)

	"Severely poor": Lower bound poverty line (N$184.56 per adult equivalent)				"Poor": Upper bound poverty line (N$262.45 per adult equivalent)				
	P(0) incidence	(P1) depth	(P2) severity	Poverty share	P(0) incidence	(P1) depth	(P2) severity	Poverty share	Number of households
Owns	12.2	3.0	1.2	29.7	26.5	7.9	3.3	32.4	125325
Does not own, but has access	19.5	5.9	2.7	10.0	39.1	13.1	6.2	10.0	26259
Neither owns nor has access	14.0	4.2	1.8	60.1	26.8	9.0	4.3	57.5	219831
Not stated	26.2	11.4	5.9	0.1	26.2	15.8	10.0	0.1	263
Namibia	13.8	3.9	1.7	100.0	27.6	8.9	4.1	100.0	371678

Table F-14: Incidence, depth and severity of poverty by ownership/access to goats (%)

	"Severely poor": Lower bound poverty line (N$184.56 per adult equivalent)				"Poor": Upper bound poverty line (N$262.45 per adult equivalent)				
	P(0) incidence	(P1) depth	(P2) severity	Poverty share	P(0) incidence	(P1) depth	(P2) severity	Poverty share	Number of households
Owns	13.4	3.1	1.2	37.9	30.2	8.7	3.5	42.7	145027
Does not own, but has access	9.9	2.6	0.9	2.6	22.1	6.6	2.8	2.9	13305
Neither owns nor has access	14.3	4.5	2.1	59.2	26.1	9.2	4.5	54.1	212703
Not stated	28.0	13.0	6.8	0.4	40.7	19.9	11.7	0.3	643
Namibia	13.8	3.9	1.7	100.0	27.6	8.9	4.1	100.0	371678

Table F-15: Incidence, depth and severity of poverty by ownership/access to field for crops (%)

	"Severely poor": Lower bound poverty line (N$184.56 per adult equivalent)				"Poor": Upper bound poverty line (N$262.45 per adult equivalent)				
	P(0) incidence	(P1) depth	(P2) severity	Poverty share	P(0) incidence	(P1) depth	(P2) severity	Poverty share	Number of households
Owns	19.5	5.6	2.5	35.4	38.1	12.6	5.9	34.7	93332
Does not own, but has access	13.7	3.3	1.2	28.9	32.9	9.1	3.7	34.7	108232
Neither owns nor has access	10.7	3.4	1.5	35.2	18.3	6.7	3.4	30.2	169077
Not stated	23.8	5.5	2.1	0.5	35.5	13.1	5.9	0.4	1037
Namibia	13.8	3.9	1.7	100.0	27.6	8.9	4.1	100.0	371678

Table F-16: Incidence, depth and severity of poverty by ownership/access to radio (%)

	"Severely poor": Lower bound poverty line (N$184.56 per adult equivalent)				"Poor": Upper bound poverty line (N$262.45 per adult equivalent)				
	P(0) incidence	(P1) depth	(P2) severity	Poverty share	P(0) incidence	(P1) depth	(P2) severity	Poverty share	Number of households
Owns	11.4	3.1	1.3	59.0	23.6	7.4	3.3	61.2	265491
Does not own, but has access	20.6	6.1	2.8	19.6	39.9	13.2	6.3	19.0	48863
Neither owns nor has access	19.3	6.0	2.7	21.3	35.5	12.4	6.0	19.6	56819
Not stated	13.7	6.5	3.3	0.1	30.9	11.1	6.0	0.2	505
Namibia	13.8	3.9	1.7	100.0	27.6	8.9	4.1	100.0	371678

Table F-17: Incidence, depth and severity of poverty by ownership/access to plough (%)

	"Severely poor": Lower bound poverty line (N$184.56 per adult equivalent)				"Poor": Upper bound poverty line (N$262.45 per adult equivalent)				
	P(0) incidence	(P1) depth	(P2) severity	Poverty share	P(0) incidence	(P1) depth	(P2) severity	Poverty share	Number of households
Owns	15.4	4.0	1.7	25.3	36.6	10.5	4.4	30.0	84033
Does not own, but has access	19.7	5.4	2.3	18.5	40.1	12.8	5.8	18.8	48226
Neither owns nor has access	12.0	3.6	1.6	55.8	21.9	7.6	3.6	50.9	238230
Not stated	17.4	5.8	2.2	0.4	27.0	10.7	5.3	0.3	1189
Namibia	13.8	3.9	1.7	100.0	27.6	8.9	4.1	100.0	371678

Table F-18: Incidence, depth and severity of poverty by ownership/access to telephone (%)

	"Severely poor": Lower bound poverty line (N$184.56 per adult equivalent)				"Poor": Upper bound poverty line (N$262.45 per adult equivalent)				
	P(0) incidence	(P1) depth	(P2) severity	Poverty share	P(0) incidence	(P1) depth	(P2) severity	Poverty share	Number of households
Owns	1.9	0.4	0.1	4.6	4.9	1.2	0.4	5.9	124528
Does not own, but has access	15.5	4.1	1.6	37.4	33.5	10.1	4.4	40.4	123603
Neither owns nor has access	24.1	7.4	3.3	57.7	44.6	15.5	7.5	53.4	122603
Not stated	20.0	6.8	2.6	0.4	41.3	13.9	6.5	0.4	944
Namibia	13.8	3.9	1.7	100.0	27.6	8.9	4.1	100.0	371678

Table F-19: Incidence, depth and severity of poverty by energy source for cooking (%)

	"Severely poor": Lower bound poverty line (N$184.56 per adult equivalent)				"Poor": Upper bound poverty line (N$262.45 per adult equivalent)				
	P(0) incidence	(P1) depth	(P2) severity	Poverty share	P(0) incidence	(P1) depth	(P2) severity	Poverty share	Number of households
Electricity from mains	1.3	0.4	0.2	2.6	3.5	0.9	0.4	3.6	106048
Electricity from generator	..	0.0	0.0	..	9.0	1.6	0.3	0.1	1097
Solar energy	..	0.0	0.0	..	17.1	4.7	1.3	0.0	69
Gas	4.1	1.0	0.3	1.7	10.9	2.8	1.1	2.3	21691
Paraffin	6.6	1.3	0.5	2.1	16.2	4.1	1.6	2.6	16430
Wood	21.2	6.1	2.6	91.6	41.6	13.7	6.3	89.7	221380
Coal	19.4	9.7	6.1	0.2	37.7	15.3	9.4	0.2	640
Animal dung	22.4	4.4	1.1	1.7	34.5	11.4	4.6	1.3	3817
Other	..	0.0	0.0	..	39.1	8.3	1.8	0.1	138
None	..	0.0	0.0	..	22.3	4.4	0.9	0.1	369
Namibia	13.8	3.9	1.7	100.0	27.6	8.9	4.1	100.0	371678

Table F-20: Incidence, depth and severity of poverty by energy source for lighting (%)

	"Severely poor": Lower bound poverty line (N$184.56 per adult equivalent)				"Poor": Upper bound poverty line (N$262.45 per adult equivalent)				
	P(0) incidence	(P1) depth	(P2) severity	Poverty share	P(0) incidence	(P1) depth	(P2) severity	Poverty share	Number of households
Electricity from mains	2.8	0.8	0.3	7.3	6.5	1.9	0.9	8.5	132916
Electricity from generator	3.3	0.5	0.1	0.2	6.2	1.9	0.7	0.2	2537
Solar energy	3.0	0.6	0.3	0.1	6.3	1.5	0.7	0.1	1623
Gas	7.8	2.2	0.9	0.1	18.3	6.4	2.6	0.1	677
Paraffin	12.5	3.0	1.2	13.7	30.5	8.4	3.4	16.8	56269
Wood	34.3	11.4	5.4	15.9	61.1	22.9	11.4	14.2	23775
Candles	20.1	5.5	2.3	56.0	39.2	12.6	5.7	54.6	142735
Other	30.8	10.6	5.5	5.6	50.9	19.3	10.3	4.6	9319
None	33.4	12.3	6.1	1.1	60.5	22.9	11.9	1.0	1745
Namibia	13.8	3.9	1.7	100.0	27.6	8.9	4.1	100.0	371678

Table F-21: Urbanisation, and incidence of poverty by region and urban/rural (%)

	Urbanisation levels		"Severely poor": Lower bound poverty line (N$184.56 per adult equivalent)		"Poor": Upper bound poverty line (N$262.45 per adult equivalent)		
	Urban	Rural	Urban Poor	Rural Poor	Urban Poor	Rural Poor	Number of households
Caprivi	27.7	72.3	3.1	16.1	12.0	34.9	18607
Erongo	83.8	16.2	2.8	15.3	6.9	27.9	27713
Hardap	39.5	60.5	17.2	24.9	24.3	37.1	16365
Karas	53.8	46.2	8.5	17.3	17.7	26.9	15570
Kavango	20.1	79.9	19.7	41.0	32.8	62.4	32354
Khomas	92.5	7.5	1.7	10.6	5.3	18.3	64918
Kunene	32.6	67.4	16.0	11.7	28.0	20.5	13365
Ohangwena	2.0	98.0	3.7	19.6	7.9	45.5	37854
Omaheke	24.3	75.7	16.7	17.7	24.4	31.9	13347
Omusati	1.8	98.2	7.2	12.9	10.4	31.4	39248
Oshana	41.2	58.8	4.4	10.1	9.9	26.5	31759
Oshikoto	13.0	87.0	10.6	17.5	19.9	43.9	31871
Otjozond-jupa	50.7	49.3	12.7	18.9	22.7	33.0	28707
Namibia	40.5	59.5	6.0	19.1	12.0	38.2	371678

Table F-22: Urbanisation, and poverty shares by region and urban/rural (%)

	Distribution of rural/urban households		"Severely poor": Lower bound poverty line (N$184.56 per adult equivalent)		"Poor": Upper bound poverty line (N$262.45 per adult equivalent)	
	Urban	Rural	Urban Poor	Rural Poor	Urban Poor	Rural Poor
Caprivi	3.4	6.1	1.8	5.1	3.4	5.6
Erongo	15.4	2.0	7.2	1.6	8.9	1.5
Hardap	4.3	4.5	12.2	5.9	8.7	4.4
Karas	5.6	3.3	7.8	2.9	8.2	2.3
Kavango	4.3	11.7	14.1	25.1	11.7	19.1
Khomas	39.9	2.2	11.1	1.2	17.4	1.1
Kunene	2.9	4.1	7.6	2.5	6.7	2.2
Ohangwena	0.5	16.8	0.3	17.2	0.3	20.0
Omaheke	2.2	4.6	6.0	4.2	4.4	3.8
Omusati	0.5	17.4	0.5	11.8	0.4	14.3
Oshana	8.7	8.5	6.3	4.5	7.1	5.9
Oshikoto	2.8	12.5	4.8	11.5	4.6	14.4
Otjozond-jupa	9.7	6.4	20.3	6.3	18.2	5.5
Namibia	100.0	100.0	100.0	100.0	100.0	100.0

Table F-23: Poverty incidence and shares by region (rank)

	"Severely poor": Lower bound poverty line (N$184.56 per adult equivalent)				"Poor": Upper bound poverty line (N$262.45 per adult equivalent)			
	Urban Poor	Urban Poverty share	Rural Poor	Rural Poverty share	Urban Poor	Urban Poverty share	Rural Poor	Rural Poverty share
Caprivi	11	11	8	7	8	11	5	6
Erongo	12	7	9	12	12	4	9	12
Hardap	2	3	2	6	4	5	4	8
Karas	7	5	7	10	7	6	10	10
Kavango	1	2	1	1	1	3	1	2
Khomas	13	4	12	13	13	2	13	13
Kunene	4	6	11	11	2	8	12	11
Ohangwena	10	13	3	2	11	13	2	1
Omaheke	3	9	5	9	3	10	7	9
Omusati	8	12	10	3	9	12	8	4
Oshana	9	8	13	8	10	7	11	5
Oshikoto	6	10	6	4	6	9	3	3
Otjozondjupa	5	1	4	5	5	1	6	7

Table F-24: Incidence, depth and severity of poverty by highest level of educational attainment of the household head (%)

	"Severely poor": Lower bound poverty line (N$184.56 per adult equivalent)				"Poor": Upper bound poverty line (N$262.45 per adult equivalent)				
	P(0) incidence	(P1) depth	(P2) severity	Poverty share	P(0) incidence	(P1) depth	(P2) severity	Poverty share	Number of households
No formal education	26.7	8.1	3.6	46.1	50.0	17.2	8.2	43.1	88375
Primary education	17.7	5.0	2.1	40.3	35.5	11.4	5.2	40.4	116545
Secondary education	5.1	1.2	0.5	12.6	12.6	3.5	1.4	15.6	126932
Tertiary education	0.1	0.0	0.0	0.0	0.4	0.1	0.0	0.2	36980
Don't know	24.4	5.3	2.2	0.6	42.4	13.3	5.8	0.5	1327
Missing	12.4	2.1	0.5	0.4	15.0	5.6	2.3	0.2	1518
Namibia	13.8	3.9	1.7	100.0	27.6	8.9	4.1	100.0	371678

Table F-25: Mean distances to facilities and services by poverty incidence (minutes and kilometers)

	"Severely poor": Lower bound poverty line (N$184.56 per adult equivalent)			"Poor": Upper bound poverty line (N$262.45 per adult equivalent)		
	Not Poor	Poor	Total	Not Poor	Poor	Total
Distance in minutes						
Drinking water	4.60	6.63	4.88	4.05	7.04	4.88
Hospital or clinic	13.51	12.57	13.38	12.57	15.49	13.38
Public transport	7.81	7.37	7.75	6.97	9.78	7.75
Local shop/market	8.64	7.99	8.55	8.40	8.93	8.55
Primary school	10.48	8.87	10.26	10.35	10.04	10.26
High school	14.85	13.48	14.66	14.23	15.80	14.66
Combined school	15.83	8.84	14.86	16.32	11.03	14.86
Police station	14.48	12.61	14.23	13.80	15.34	14.23
Post office	13.92	11.56	13.59	13.45	13.96	13.59
Magistrate court	13.69	8.50	12.98	14.01	10.28	12.98
Traditional court	7.27	6.38	7.15	6.99	7.58	7.15
Mobile clinic	1.06	1.39	1.11	0.88	1.70	1.11
Distance in kilometers						
Drinking water	0.62	1.09	0.68	0.53	1.08	0.68
Hospital or clinic	10.89	13.52	11.25	10.77	12.52	11.25
Public transport	6.31	9.11	6.69	6.19	8.02	6.69
Local shop/market	6.89	8.86	7.16	6.86	7.96	7.16
Primary school	6.89	8.07	7.05	6.91	7.44	7.05
High school	24.49	34.53	25.87	23.87	31.14	25.87
Combined school	30.51	40.29	31.86	31.09	33.89	31.86
Police station	15.10	27.99	16.88	14.13	24.11	16.88
Post office	19.81	35.41	21.96	18.73	30.45	21.96
Magistrate court	30.88	48.59	33.33	29.04	44.60	33.33
Traditional court	14.78	4.97	13.42	16.25	6.02	13.42
Mobile clinic	0.30	0.23	0.29	0.31	0.25	0.29

Table F-26: Table Poverty share by ownership/access to household assets (%)

	Severely poor	Poor	Non-poor	All Namibia
Owns radio	59.0	61.2	75.3	71.4
Does not own but access to radio	19.6	19.0	10.9	13.1
Owns a telephone/cellphone	4.6	5.9	44.0	33.5
Does not own but access to telephone/cellphone	37.4	40.4	30.5	33.3
Owns a motor vehicle	1.1	1.6	24.9	18.5
Does not own but access to motor vehicle	24.4	26.4	28.8	28.1
Owns a television	3.8	5.2	38.3	29.1
Does not own but access to television	7.6	8.1	11.1	10.3
Owns a refrigerator	2.7	4.6	40.1	30.3
Does not own but access to refrigerator	4.5	5.4	6.7	6.3
Owns a tape recorder	8.3	10.5	34.6	27.9
Does not own but access to tape recorder	6.4	5.9	6.6	6.4
Owns a HiFi	2.9	4.2	32.1	24.4
Does not own but access to HiFi	6.5	6.0	6.8	6.6
Owns a freezer	1.1	1.8	25.9	19.3
Does not own but access to freezer	2.8	3.8	5.8	5.2
Owns a camera	1.5	1.8	18.4	13.8
Does not own but access to camera	8.0	9.3	9.9	9.7
Owns a bicycle	8.1	9.9	17.8	15.6
Does not own but access to bicycle	4.0	5.7	7.3	6.9
Owns a sewing/knitting machine	8.5	9.7	18.3	15.9
Does not own but access to sewing/knitting machine	4.5	6.3	6.2	6.2
Owns a VCR/DVD	0.4	0.7	17.2	12.6
Does not own but access to VCR/DVD	2.1	2.3	4.9	4.2
Owns a washing machine	0.8	1.1	18.7	13.9
Does not own but access to washing machine	0.9	1.2	2.7	2.3
Does not own but access to microwave	0.6	0.6	2.2	1.8
Owns a satellite dish	0.1	0.2	11.3	8.3
Does not own but access to satellite dish	1.0	1.2	4.7	3.8
Owns a computer	..	0.1	7.4	5.4
Does not own but access to computer	0.5	0.6	8.7	6.5
Owns a Internet service	..	0.1	3.9	2.8
Does not own but access to Internet service	0.2	0.3	7.7	5.6
Owns a canoe/boat	1.4	2.1	1.3	1.5
Does not own but access to canoe/boat	2.2	2.4	2.1	2.1
Owns a motor cycle/scooter	0.2	0.2	1.4	1.1
Does not own but access to motor cycle/scooter	0.1	0.3	1.1	0.9
Owns a motorboat	..	..	0.3	0.3
Does not own but access to motorboat	0.1	0.2	0.6	0.5
Does not own but access to microwave	0.6	0.6	2.2	1.8
Owns a satellite dish	0.1	0.2	11.3	8.3

Table F-27: Poverty share by ownership/access to agricultural assets (%)

	Severely poor	Poor	Non-poor	All Namibia
Owns grazing land	2.0	2.3	5.5	4.7
Does not own, but access to grazing land	58.7	62.9	47.4	51.7
Owns field for crops	35.4	34.7	21.5	25.1
Does not own, but access to field for crops	28.9	34.7	27.0	29.1
Owns poultry	58.5	63.5	43.0	48.6
Does not own, but access to poultry	1.4	1.4	2.7	2.3
Owns goats	37.9	42.7	37.6	39.0
Does not own, but access to goats	2.6	2.9	3.9	3.6
Owns cattle	29.7	32.4	34.2	33.7
Does not own, but access to cattle	10.0	10.0	5.9	7.1
Owns plough	25.3	30.0	19.8	22.6
Does not own, but access to plough	18.5	18.8	10.7	13.0
Owns wheelbarrow	9.2	10.8	22.2	19.1
Does not own, but access to wheelbarrow	10.9	12.7	12.4	12.5
Owns donkey/mule	19.4	20.6	16.1	17.3
Does not own, but access to donkey/mule	4.3	4.9	3.5	3.9
Owns donkey cart/ox cart	9.8	10.1	7.6	8.3
Does not own, but access to donkey cart/ox cart	8.4	9.7	6.8	7.6
Owns pig	14.8	18.5	12.7	14.3
Does not own, but access to pig	0.3	0.7	1.2	1.1
Owns tractor	0.5	0.3	1.7	1.3
Does not own, but access to tractor	10.7	12.6	11.8	12.0
Owns grinding mill	0.2	0.2	2.5	1.9
Does not own, but access to grinding mill	5.4	8.0	10.4	9.8
Owns sheep	3.9	3.7	7.5	6.4
Does not own, but access to sheep	1.2	1.1	1.4	1.3
Owns horse	4.6	3.9	6.0	5.4
Does not own, but access to horse	1.1	1.6	1.2	1.3
Owns ostrich	0.1	0.1	0.5	0.4
Does not own, but access to ostrich	0.3	0.2	0.2	0.2

Table F-28: Poverty share by lack of ownership/access to household assets (%)

	Severely poor	Poor	Non-poor	All Namibia
Radio	21.3	19.6	13.6	15.3
Telephone/Cellphone	57.7	53.4	25.2	33.0
Motor vehicle	74.0	71.6	46.0	53.1
Stove, gas or electric	88.9	86.6	42.8	54.9
Television	88.1	86.3	50.3	60.3
Refrigerator	92.5	89.8	53.0	63.1
Tape Recorder	84.8	83.3	58.4	65.3
HiFi	90.0	89.4	60.7	68.7
Freezer	95.9	94.1	68.1	75.3
Camera	90.0	88.5	71.3	76.1
Bicycle	87.5	84.1	74.2	76.9
Sewing/knitting machine	86.5	83.7	75.1	77.5
VCR/DVD	97.1	96.6	77.4	82.7
Washing machine	97.8	97.4	78.4	83.6
Microwave	98.9	98.8	81.4	86.2
Satellite dish	98.5	98.2	83.5	87.6
Computer	99.2	99.0	83.3	87.7
Internet service	99.4	99.3	88.1	91.2
Canoe/boat	96.1	95.2	96.2	95.9
Motor cycle/scooter	99.2	99.1	97.0	97.6
Motorboat	99.5	99.5	98.5	98.8

Table F-29: Poverty share by lack of ownership/access to agricultural assets (%)

	Severely poor	Poor	Non-poor	All Namibia
Grazing land	39.1	34.5	46.9	43.5
Field for crops	35.2	30.2	51.3	45.5
Poultry	39.8	35.1	54.2	48.9
Goat	59.2	54.1	58.4	57.2
Cattle	60.1	57.5	59.8	59.1
Plough	55.8	50.9	69.1	64.1
Wheelbarrow	79.5	76.1	64.9	68.0
Donkey/mule	75.9	74.3	80.2	78.6
Donkey cart/ox cart	81.3	79.8	85.2	83.7
Pig	84.6	80.6	85.8	84.4
Tractor	88.4	86.8	86.1	86.3
Grinding mill	93.7	91.3	86.7	88.0
Sheep	94.7	95.0	91.0	92.1
Horse	93.7	94.2	92.6	93.0
Ostrich	99.1	99.3	98.9	99.0

ANNEX G: Multivariate analysis

This Annex presents the methodology and more detailed results from the multivariate analysis introduced in Section 5. Two types of regression models are presented. First an Ordinary Least Squares model is estimated using monthly household expenditure as the dependent variable (i.e. the variable to be explained) and a series of socio-economic characteristics as independent variables (i.e. variables that explain variation in the dependent). This model is specified as:

$$ln\ y_j = \beta x_j + \varepsilon_j$$

Where y_j is total monthly adult equivalent expenditure of household j in Namibian $; x_j is a set of exogenous household characteristics or other determinants, and ε_j is a random error term. The dependent variable is logarithmically transformed which means that the coefficients of the independents can be interpreted as partial effects in percentage terms.

The second model is a binary logistic model where the dependent is the categorical variable of poverty status which takes a value of 1 if the household is classified as poor and a value of 0 if the household is classified as non-poor. This model takes the form:

$$Prob(poor=1) = (e^{x\beta})/(1+e^{x\beta})$$

Where $x\beta = \alpha+\beta_1 x_1+\beta_2 x_2+\ldots+\beta_k x_k$

The selection of explanatory variables included in the models were based on the information from the poverty profile and other areas of interest to policymakers. The variables should ideally be exogenous to the level of welfare. In fact, most variables at some point in time end up being determined to some extent by the welfare of the households (except a few such as age and gender) so the definition of exogenous refers to the short term. For instance variables such as housing standards are not included since they are likely to be a direct function of current levels of welfare.

When using categorical variables (e.g. education which is expressed as "primary", "secondary", "tertiary" and "no formal education"), a reference category is selected as a default and omitted from the regression. The resulting parameter estimates should be interpreted in relation to the default category (in the case of education the default category is "secondary education"). In principle, any category could be used as a default but those selected in this analysis were chosen to meaningfully represent the variable, i.e. they include a large number of observations and are easy to interpret. It should be emphasized that the models are only able to provide correlations from which no inference of causation can be made. Instead the model can assist in testing the strength of relationships in the NHIES data that have been to shown to be causal elsewhere, e.g. between the level of education and welfare or between fertility and poverty status.

The regressions were all run using SPSS software and the sampling weights were rebased to N=9801 in order to get meaningful significance levels.

Determinants of household consumption

When using categorical variables, a reference category is selected as a default and omitted from the regression. The results from the regression using the national data are reported in Table G-1 and for each of the 13 administrative regions in the country in Table G-2. Levels of significance at levels greater than 1, 5 and 10 percent are indicated.

As would be expected given the results of the poverty profile, there is a strongly inverse relationship between adult equivalent adjusted household expenditure and the size of the household. Increasing the size of the household reduces adult equivalent household expenditure by 23.9 percent when all other factors are controlled for. This result also holds for all the regions individually.

The analysis confirms the gender dimensions of household levels of welfare. Female-headed households have total consumption expenditures that are lower by 4.9 percent compared to the default category of male-headed households. In other words, when comparing a household headed by a female and one headed by a male, the former will have consumption levels that are around 5 percent lower even when controlling for differences in the level of education, number of people in the household, location and so on. This is evidence that there is a gender aspect to poverty in Namibia as is often found in other developing countries. There are some sizeable region-specific differences when it comes to gender-inequality. The biggest difference between male- and female-headed households is in the regions of Omaheke, Oshikoto, Khomas and Oshana, where household expenditures among female-headed households are lower by more than 9 percent compared to male-headed households and controlling for all other factors. As would be expected from the analysis of the poverty profile, household consumption expenditures also increase with the age of the head of household but at a decreasing pace indicated by the negative coefficient of the squared age variable. It should be noted that just like under the poverty profile, the results here refer to the sex and age of the head of household and does not take into account issues related to intra-household inequality.

Having one or more children in the household reduces adult equivalent consumption by 12 percent compared to households without any children and holding other factors, including household size, constant. This relationship is statistically significant in all but two regions and strongest in Ohangwena, where having one or more children in the household lowers the adult equivalent consumption expenditure by 24.5 percent compared to households without any children. Under a different specification of the model, a dummy variable was included to test for the relationship between the presence of an orphan in the household and consumption levels. This relationship proved insignificant once other factors, including the presence of children in the household, are controlled for.

The analysis confirms the great regional differences in levels of consumption expenditure among households. Rural households also have lower levels of consumption expenditure compared to the urban default controlling for all other factors and this result holds for all

the 11 regions where the relationship is significant. In rural Oshikoto and rural Hardap, expenditure levels are lower by more than 20 percent compared to the urban areas of those regions and controlling for other factors related to the household. The strongest impacts on consumption expenditure of households come from the education variables. In households where the head has primary education as the highest level of education or has no formal education at all, the monthly consumption levels are lower by 19.8 and 24.4 percent, respectively compared to households where the head has attained a secondary level of education. Conversely, in households where the head has attained a tertiary education, the consumption levels are higher by 26.6 percent compared to household heads with a secondary education. The correlation between education and expenditure levels is strongly significant in all regions of the country.

Having a pension as the main source of income reduces consumption expenditure by 4.6 percent compared to all other sources of income including wages, income from subsistence farming and non-farming business activities. In Karas and Kunene, having a pension as the main source of income is associated with lower consumption expenditure of 11 and 19 percent, respectively compared to households with other sources of income. On the other hand, owning or having access to field for grazing increases household consumption by 8.5 percent. The variables reflecting distances to public services and facilities are somewhat ambiguous. Expenditure levels increase with distance to hospital/clinic and shop/market but decrease with distance to police station. The latter effect could be a sign that better-off neighbourhoods are better policed compared to less well-off areas or, if one assumes that more crimes take place further away from police presence, then the effect could be interpreted as the negative impact of crime on household incomes and consumption. However, the model is not able to determine such a causal links. Moreover, in some regions the correlation is negative e.g. in Omusati and Kavango, while in yet other regions e.g. Omaheke and Erong the relationship is positive (i.e. the farther away from a police station the household is located, the higher the expenditure levels).

Consumption expenditures are lowest in Caprivi and Kavango compared to Ohangwena, which is the default category for the regions, when controlling for the effects of other variables. The regions of Karas, Hardap and Oshikoto also have lower levels of consumption expenditure. On the other hand, Khomas, Omusati and Oshana have higher levels of consumption expenditure. This may seem to contradict the results from the poverty profile, which showed that Ohangwena ranked second highest in terms of both levels of poverty and poverty share. The reason for the change in ranking is that the multivariate analysis controls for other factors that determine poverty status and shows the strength of the effects that are attributable to the region *per se*.

This way, the results show that when holding constant all other characteristics that are thought to influence income and consumption levels, for example education levels, age, number of children in the household and so on, a household in Caprivi is likely to be poorer than a household living in any other region of the country. Likewise, a household in Khomas is more likely to have a higher level of income or consumption than in any other region. The regression analysis also included the language variables as explanatory, and the coefficients are significant for all categories expect for households where the main lan-

guage is Setswana. Again, some interesting shifts occur compared to the poverty profile. In households where Afrikaans is the main language, total consumption is higher by 19.8 percent compared to the default category, which is Oshiwambo, and households where German and English consumption is higher by 11.3 and 10.5 percent respectively. On the other hand, households where the main languages spoken are Khoisan, Rukavango and especially Nama/Damara, total consumption levels are lower (than the default category), again holding constant all other factors that are included in the model.

Table G-1: Results of OLS regression

Dependent Variable: Ln(adult equivalent monthly expenditure)
N=9801
Adj R Squared: 0.629

	Standardized β - coefficients	T
(Constant)		114.934
Household size	-.239***	-29.193
Age of head of household	.219***	6.287
Age of head of household (squared)	-.182***	-5.264
Female (=1; Male =0)	-.049***	-7.043
Child younger than 16 (=1; no child =0)	-.120***	-15.126
Widow/widower (=1; other marital status =0)	.018**	2.435
Rural (=1; Urban=0)	-.116***	-11.644
Distance to hospital/clinic (km)	.047***	4.892
Distance to shop/market (km)	.028***	3.344
Distance to police station (km)	-.042***	-4.772
Owns or has access to field for crops (=1; Neither owns nor has access=0)	-.002	-.220
Owns or has access to field for grazing (=1; Neither owns nor has access=0)	.085***	9.996
Pension (=1; Other source of income=0)	-.046***	-6.470
Education dummies (default: secondary education)		
Primary education	-.198***	-26.109
Tertiary education	.266***	37.368
No formal education	-.244***	-29.393
Regional dummies (default: Ohangwena)		
Caprivi	-.054***	-3.537
Erongo	.022**	2.308
Hardap	-.041***	-4.672
Karas	-.034***	-4.128
Kavango	-.044***	-2.956
Khomas	.085***	6.948
Kunene	.012	1.488
Omaheke	.003	.386
Omusati	.017**	2.047
Oshana	.053***	6.344
Oshikoto	-.025***	-3.052
Otjozondjupa	-.012	-1.204
Language dummies (default: Oshiwambo)		
Khoisan	-.022***	-3.330
Caprivian	.038**	2.573
Otjiherero	.046***	5.570
Rukavango	-.023*	-1.649
Nama/damara	-.036***	-4.267
Setswana	.009	1.358
Afrikaans	.198***	23.643
German	.113***	17.168
English	.105***	15.412
Other	.037***	5.763

** = $p < 0.1$; ** = $p < 0.05$ *** = $p < 0.01$.*

Table G-2: Results of OLS regression by region

Dependent Variable: Ln(adult equivalent monthly expenditure)													
N=	731	545	640	645	714	1160	478	725	495	964	1005	998	701
Adj R Squared:	0.457	0.503	0.493	0.499	0.535	0.556	0.515	0.506	0.486	0.395	0.478	0.484	0.514
	Caprivi	Erongo	Hardap	Karas	Kavango	Khomas	Kunene	Ohangwena	Omaheke	Omusati	Oshana	Oshikoto	Otjzondjupa
	Standardised β-coefficients												
Household size	-0.312***	-0.220***	-0.284***	-0.329***	-0.349***	-0.272***	-0.471***	-0.281***	-0.269***	-0.243***	-0.237***	-0.209***	-0.302***
Age of household head	0.148	0.448***	0.175	0.482**	0.255*	0.302***	0.182	-0.033	0.705***	0.083	0.081	0.185	0.465***
Age of household head (sq)	-0.028	-0.348**	-0.008	-0.409**	-0.232*	-0.124	0.020	-0.067	-0.513**	-0.050	-0.037	-0.204	-0.415***
Female	0.040	-0.076***	0.005	-0.052	-0.044	-0.093***	-0.020	-0.058*	-0.094**	-0.044	-0.091***	-0.093***	-0.086***
Child in household	-0.178***	-0.156***	-0.136***	-0.055	-0.073***	-0.041*	-0.073	-0.245***	-0.166***	-0.188***	-0.086***	-0.188***	-0.160***
Rural	-0.173***	-0.170***	-0.207***	-0.106**	-0.115***	-0.131***	0.028	-0.063***	-0.187***	0.022	-0.226***	-0.196***	-0.098***
Widow	0.015	-0.031	0.042	0.005	0.044	0.061***	-0.016	0.005	0.008	0.020	0.007	-0.019	0.012
Hospital/clinic	-0.020	0.025	-0.045	0.081	-0.054*	0.126**	0.072	-0.039	-0.029	-0.085**	-0.018	-0.046	0.141***
Shop/market	0.036	-0.070	0.179**	0.037	0.085**	0.001	0.019	0.043	0.146***	0.037	0.008	0.046	-0.027
Police station	-0.039	0.149**	0.070	-0.105	-0.180***	-0.053	0.021	0.026	0.170***	-0.221***	0.011	-0.063	-0.039
Grazing	0.115***	-0.087**	0.120***	0.141***	0.210***	0.010	0.115***	0.050*	0.133***	0.003	0.133***	0.073**	0.097**
Crops	0.007	0.143***	-0.012	-0.035	-0.066**	-0.074***	-0.034	-0.046*	0.055	-0.114***	-0.024	0.039	0.041
Primary education	-0.228***	-0.260***	-0.325***	-0.231***	-0.278***	-0.234***	-0.249***	-0.202***	-0.308***	-0.178***	-0.232***	-0.266***	-0.299***
Tertiary education	0.289***	0.404***	0.247***	0.341***	0.297***	0.437***	0.178***	0.281***	0.197***	0.208***	0.304***	0.295***	0.193***
No formal	-0.271***	-0.213***	-0.420***	-0.280***	-0.330***	-0.249***	-0.368***	-0.269***	-0.389***	-0.243***	-0.269***	-0.329***	-0.448***
Pension	-0.062	0.036***	-0.113**	-0.109**	-0.042	-0.055***	-0.193***	-0.020	-0.076*	-0.068***	0.018	-0.018	0.002

** = $p < 0.1$; ** = $p < 0.05$ *** = $p < 0.01$.*

Determinants of household poverty status

The second type of multivariate analysis conducted on the data makes use of the new poverty line definition. Monthly consumption is replaced as the dependent variable with a variable of two categories representing the poverty status of households; 1=poor and 0=non-poor using the poverty line defined for this report. The independent variables are the same as under the previous model. The two methods are quite similar but the properties of the coefficients differ. The regression coefficients of the logistic model are converted to "odds ratios", which each signify the probability of the household with that characteristic being poor when controlling for all other factors. Results are reported in Table G-3.

The highest odds ratio is for no formal education of the head of household. These households have an odds ratio of 4.2. In other words, households where the head has no formal education are more than four times as likely to be classified as poor compared to households where the head has a secondary education and controlling for all other factors. Households where primary education is the highest level of education attained by head of household are also more likely to be poor. The analysis further shows that households in rural areas have an odds ratio of 1.97, which means that they are 97 percent more (almost twice as) likely to be poor compared to urban households and holding all other factors constant.

Additional factors contribute to the probability of household poverty. Having a child younger than 16 in the household make it 1.77 times (or 77 percent) more likely to be poor compared to households without any children. Households where pension is the main source of income are 1.74 times more likely to be poor than households that rely on other main sources of income. Female-headed households are 1.18 times as likely to be poor compared to male-headed households. Several regional variables, Caprivi, Kavango and Oshikoto, also have odds ratios higher than one, which indicates that households residing in these regions are more likely to be poor, compared to households residing in Ohangwena (the default category) and holding all other variables constant.

Conversely, several factors have odds ratios below 1, which means that the probabilities shift towards the household being less likely than the default category to be classified as poor. The most important of these factors is tertiary education. An odds ratio of 0.019 implies that if the household head has a tertiary education, it is 50 times less likely to be poor compared to a household where the head has a secondary education. Moreover, households residing in the regions of Erongo, Kunene, Oshana and Khomas are half as likely to be poor compared to those in Ohangwena when all other factors are controlled for.

Table G-3: Results of Binary Logistic regression for Namibia

Dependent variable: Poverty status (poor=1, non-poor=0)
N=9801
Pseudo R Squared: 0.427
Hosmer Lemeshow goodness of fit: $\chi 2$=10.338; p=.242

	β	Exp (β)
Household size	0.214***	1.239
Age of head of household	-0.015*	0.985
Age of head of household (squared)	0.000*	1.000
Female (=1; Male =0)	0.172***	1.188
Child younger than 16 (=1; no child =0)	0.571***	1.769
Widow/widower (=1; other marital status =0)	-0.189**	0.828
Rural (=1; Urban=0)	0.678***	1.969
Distance to hospital/clinic (km)	-0.007***	0.993
Distance to shop/market (km)	-0.003	0.997
Distance to police station (km)	0.006***	1.006
Owns or has access to field for grazing (=1; Neither owns nor has access=0)	-0.549***	0.578
Owns or has access to field for crops (=1; Neither owns nor has access=0)	-0.055	0.947
Pension (=1; Other source of income=0)	0.556***	1.744
Education dummies (default: secondary education)		
Primary education	1.028***	2.796
Tertiary education	-3.944***	0.019
No formal education	1.436***	4.204
Regional dummies (default: Ohangwena)		
Caprivi	0.907**	2.476
Erongo	-0.561***	0.571
Hardap	0.208	1.231
Karas	0.061	1.063
Kavango	0.545**	1.725
Khomas	-0.871***	0.419
Kunene	-0.592***	0.553
Omaheke	0.097	1.102
Omusati	-0.453***	0.636
Oshana	-0.783***	0.457
Oshikoto	0.286**	1.331
Otjozondjupa	0.067	1.069
Language dummies(default: Oshiwambo)		
Khoisan	0.478**	1.614
Caprivian	-0.964**	0.382
Otjiherero	-0.488***	0.614
Rukavango	0.120	1.128
Nama/damara	0.451***	1.570
Setswana	-1.102**	0.332
Afrikaans	-0.818***	0.441
German	-17.156	0.000
English	-1.452	0.234
Other	0.117	1.125
Constant	-2.988***	0.050

*$* = p < 0.1$; ** = $p < 0.05$ *** = $p < 0.01$.*

ANNEX H: Measures of inequality and polarisation

This Annex supplements Section 6 of the main report by presenting a deeper and more formal analysis of inequality and polarisation in Namibia. The presentation is based on Duclos and Araar (2006) and the same notations for the mathematical expressions are used. The three main inequality indices included are those of the S-Gini class, the Generalised Entropy class and the Atkinson. The two measures of polarisation are the Wolfson index and the Duclos, Esteban and Ray (DER) index.[9]

First, the Lorenz curve, which plots cumulative share of expenditure against the cumulative share of households ranked by expenditure can be defined as:

$$L(p) = \frac{\int_0^p Q(q)dq}{\int_0^1 Q(q)dq} = \frac{1}{\mu}\int_0^p Q(q)dq$$

The numerator sums the consumption expenditure of the bottom percentile, p. The denominator sums the consumption expenditure of all households. Under perfect equality expenditure shares and the share of households are the same $L(p) = p$ and so aggregating the distance $p - L(p)$ over the entire expenditure distribution yields the most common measure of inequality used in Namibia:

$$\text{The Gini index of inequality} = 2\int_0^1 (p - L(p))dp$$

This measure applies equal weights in the aggregation of $p - L(p)$. However, it is possible to define percentile dependent weights $\kappa(p)$ and apply these to the measured distances in order to reflect that society is concerned more with inequality among the poorest. Typically such weights are defined as:

$$\kappa(p:\rho) = \rho(\rho - 1)(1 - P)^{\rho-2}$$

These can be used to give the general form referred to as the class of single parameter or S-Gini indices:

$$I(\rho) = \int_0^1 (p - L(p))\kappa(p;\rho)dp$$

Here ρ is set by the analyst to reflect society's ethical concern over inequality among the poorest. Note that when $\rho = 2$, then the result is the standard Gini index of inequality. Results for the S-Gini index are reported in Table H-1. The table shows how the index in-

[9] Some of the analysis presented here was carried out using the software Distributive Analysis/Analyse Distributive (DAD) created by researchers at University of Laval and freely available at http://132.203.59.36:83 (see also Duclos and Araar 2006).

creases with the value of ρ and that the increase occurs faster in urban areas indicating greater inequality among the poorest.

The Atkinson index provides an alternative measure of inequality which explicitly incorporates normative judgments about social welfare. The index is based on an additive social welfare function and can be expressed as:

$$I(\varepsilon) = \begin{cases} 1 - \dfrac{\left(\int_0^1 Q(p)^{(1-\varepsilon)} dp\right)^{\frac{1}{1-\varepsilon}}}{\mu} & , where \quad \varepsilon \neq 1 \\ 1 - \dfrac{exp\left(\int_0^1 \ln Q(p) dp\right)}{\mu} & , where \quad \varepsilon = 1 \end{cases}$$

The weighting parameter ε reflects society's aversion to inequality. By specifying different values of this parameter one can vary the importance society attaches to mean living standards versus equality. If $\varepsilon = 0$, an increase in the income of a poor individual or household has the same effect on social welfare as an increase in the income of a rich individual by the same amount. When $\varepsilon > 0$, more weight is given to inequality at the lower end of the distribution and thus an increase in the income of the poor becomes more socially desirable. When $\varepsilon = \infty$, then society is concerned only with the poorest household. In Table H-1, results for different values of ε are computed. Again the results suggest greater levels of inequality among the poor in urban areas.

Table H-1: Different measures of inequality in Nambia

	Urban	Rural	Total
S-Gini ($\rho = 1.5$)	0.41	0.45	0.47
S-Gini ($\rho = 2$)	0.58	0.58	0.63
S-Gini ($\rho = 2.5$)	0.67	0.64	0.70
Atkinson ($\varepsilon = 0.5$)	0.27	0.30	0.32
Atkinson ($\varepsilon = 1$)	0.47	0.45	0.51
Atkinson ($\varepsilon = 2$)	0.69	0.60	0.69
Theil entropy index ($\theta = 1$)	0.61	0.86	0.81
Mean log deviation ($\theta = 0$)	0.63	0.60	0.72
Coefficient of variation	1.38	2.44	1.86
Quantile ratio (0.25;0.75)	0.22	0.38	0.26
Mean (N$)	1705.76	659.14	1083.03

The final set of inequality measures considered here are those of the Generalised entropy class.

$$I(\theta)=\begin{cases}\dfrac{1}{\theta(\theta-1)}\left(\int_0^1\left(\dfrac{Q(p)}{\mu}\right)^{\theta}dp-1\right) & ,\ if\quad \theta\neq 0,1\\ \int_0^1 ln\left(\dfrac{\mu}{Q(p)}\right)dp & ,\ if\quad \theta=0\\ \int_0^1\left(\dfrac{Q(p)}{\mu}\right)ln\dfrac{Q(p)}{\mu}dp & ,\ if\quad \theta=1\end{cases}$$

When $\theta = 0$, the index yields the mean log deviation or Theil L index reported in Table H-1 and when $\theta = 1$, the index is the Theil T measure of inequality. When $\theta = 0$, then the within group inequality contributions do not depend on the mean income of the groups and the inequality measure is strictly population weighted.

Decomposing inequality in Namibia

One common application of the generalised entropy class of inequality indices is to decompose it into the contributions to overall inequality from inequality between and within different population groups. Table H-2 shows the results from such a decomposition of the Theil entropy index (setting $\theta = 1$) index by the different economic and social groups included in the poverty profile above. The results reveal that inequality in Namibia is a product not so much of differences *between* the various population sub-groups as it is of differences *within* the same sub-group. For instance, gender-related inequality can almost entirely (97.61 percent) be attributed to inequalities within male and female-headed households separately and much less (2.39 percent) between the two gender sub-groups. It is also interesting to note that overall inequality is driven more by inequalities within the regions and less so between them. This suggests that intra-regional transfers would be even more important in addressing inequality than inter-regional transfers. The two sub-groups where between-group inequality is highest are education and language.

This is an indication that a large part of the inequality that exists in Namibia is a result of differences in education levels and differences between language or language/ethnic groups. It is particularly worth noting that by organising the population according to just four educational partitions it is possible to explain almost half of the total inequality in Namibia. One hypothesis that can help explain why education is such an important determinant of inequality is the high returns to education associated with the opening of the labour market after Independence. The high level of between-group inequality among the language group partition is a reflection of the lingering effects of the practice of discrimination in access to social and economic opportunities prior to 1990. The results remain broadly unchanged when the decomposition is conducted on the mean log deviation ($\theta = 0$) as presented in Table H-3.

Table H-2: Group decomposition of the Theil entropy index (θ = 1), 2003/2004

Group	Number of categories in group	Within-group	Between-group	Total	Within-group	Between-group	Total
					Percentage share		
Gender	2	0.79	0.02	0.81	97.61	2.39	100.00
Age	12	0.78	0.03	0.81	95.84	4.16	100.00
Locality	2	0.70	0.11	0.81	86.43	13.57	100.00
Region	13	0.63	0.18	0.81	77.60	22.40	100.00
Language	11	0.49	0.31	0.81	61.11	38.89	100.00
Education	4	0.45	0.36	0.81	55.73	44.27	100.00
Main source of income	14	0.63	0.18	0.81	77.69	22.31	100.00

Table H-3: Group decomposition of the Mean log deviation (θ = 0), 2003/2004

Group	Number of categories in group	Within-group	Between-group	Total	Within-group	Between-group	Total
					Percentage share		
Gender	2	0.70	0.02	0.72	97.21	2.79	100.00
Age	12	0.68	0.04	0.72	94.74	5.26	100.00
Locality	2	0.61	0.11	0.72	84.51	15.49	100.00
Region	13	0.54	0.18	0.72	74.65	25.35	100.00
Language	11	0.47	0.25	0.72	65.20	34.80	100.00
Education	4	0.39	0.33	0.72	54.15	45.85	100.00
Main source of income	14	0.53	0.19	0.72	73.86	26.14	100.00

Polarisation

The conventional inequality measures such as the Lorenz curve and the Gini-coefficient may not be able to register important changes in the income distribution. For instance, the Gini index may not capture changes in the share of income held by the middle stratum or more generally reflect the concentration of incomes around distinct population groups. The concept and measures *of polarisation* seek to address this. Two polarisation indices are calculated for Namibia. The first is the Wolfson measure, which assumes two groups of equal size and like the Gini index, it is between 0 (no polarization) and 1 (complete polarization). Following Wolfson (1992) this polarisation index is given by:

$$P = \frac{T - Gini/2}{mtan}$$

Where $T = 0.5$-, $L(0.5)$ represents the difference between 50% and the income share of the bottom half of the population and mtan = median/mean. In the hypothetical situation of

perfect equality, there is also zero polarisation. However, while perfect inequality implies that one person has all of the income, maximum polarization occurs when half the population has zero income and the other half has twice the mean.

The second polarisation measure computed for the report is the Duclos-Esteban-Ray (DER) index, which allows for individuals not to be clustered around discrete income intervals and avoids arbitrary choices in the number of income groups through the use of non-parametric estimation techniques (Duclos et al 2004). Table H-4 presents the results from the analysis on the NHIES data regarding polarization in Namibia, by locality and in each of the 13 administrative regions. The Wolfson and DER indices for Namibia are 0.697 and 0.369, respectively. For both indices, the values are higher in urban areas than in rural areas indicating that polarization is greater in urban areas. While global data on polarisation is incomplete, in a recent analysis researchers in Argentina computed and compared the DER index for 35 countries in Europe, Latin America and elsewhere, and find values ranging from 0.15 to 0.35.[10] What these results suggest in other words is that not only is Namibia one of the most unequal societies in the world when it comes to income distribution, it also appears to be among the most polarised. Measures of polarisation as well as a broader range of inequality indicators as presented above could be added to the indicators in the national poverty monitoring system to track developments over time.

Table H-4: Measures of polarisation, 2003/2004

	Foster-Wolfson index	Duclos, Esteban and Ray index*
Namibia	0.697	0.369
Urban	0.690	0.337
Rural	0.430	0.335
Caprivi	0.400	0.279
Erongo	0.678	0.347
Hardap	0.746	0.398
Karas	0.727	0.365
Kavango	0.481	0.323
Khomas	0.762	0.346
Kunene	0.443	0.298
Ohangwena	0.332	0.284
Omaheke	0.711	0.382
Omusati	0.322	0.277
Oshana	0.527	0.332
Oshikoto	0.414	0.311
Otjozondjupa	0.624	0.351

* $\alpha=0.5$

[10] See: *"Income Polarisation: An exploratory analysis for Latin America"* by Leonardo Gasparini, Matías Horenstein, Ezequiel Molina and Sergio Olivieri, unpublished working paper at Universidad Nacional de La Plata (Argentina).

ANNEX I: Confidence intervals

Table I-1: 95 % confidence intervals for estimates of incidence of poor and severely poor households by region

	Estimate	Std. Err.	[95% Conf.	Interval]	Deff
Severely poor (p0_185)					
Caprivi	0.125	0.018	0.091	0.160	2.043
Erongo	0.048	0.014	0.021	0.076	2.257
Hardap	0.219	0.037	0.146	0.291	5.098
Karas	0.125	0.027	0.073	0.178	4.178
Kavango	0.367	0.035	0.299	0.436	3.764
Khomas	0.024	0.004	0.015	0.032	0.996
Kunene	0.131	0.046	0.040	0.222	9.020
Ohangwena	0.193	0.035	0.124	0.262	5.687
Omaheke	0.175	0.036	0.104	0.246	4.497
Omusati	0.128	0.024	0.081	0.176	5.048
Oshana	0.078	0.013	0.052	0.103	2.377
Oshikoto	0.166	0.019	0.128	0.204	2.697
Otjozondjupa	0.158	0.021	0.117	0.199	2.296
Urban	0.060	0.006	0.049	0.072	2.639
Rural	0.191	0.011	0.170	0.212	3.992
Namibia	0.138	0.007	0.125	0.152	3.891
Poor (p0_262)					
Caprivi	0.286	0.028	0.232	0.340	2.716
Erongo	0.103	0.027	0.050	0.156	4.242
Hardap	0.321	0.042	0.238	0.403	5.219
Karas	0.219	0.032	0.157	0.281	3.762
Kavango	0.565	0.031	0.503	0.626	2.825
Khomas	0.063	0.008	0.047	0.078	1.194
Kunene	0.230	0.057	0.117	0.342	8.796
Ohangwena	0.447	0.045	0.359	0.536	5.927
Omaheke	0.301	0.050	0.203	0.399	5.840
Omusati	0.310	0.029	0.253	0.368	3.854
Oshana	0.196	0.023	0.152	0.241	3.258
Oshikoto	0.408	0.027	0.356	0.460	2.916
Otjozondjupa	0.278	0.027	0.224	0.331	2.570
Urban	0.120	0.009	0.103	0.137	3.111
Rural	0.382	0.013	0.356	0.407	3.926
Namibia	0.276	0.009	0.259	0.293	3.807

Table I-2: 95 % confidence intervals for estimates of incidence of poor and severely poor households by region

	Estimate	Std. Err.	[95% Conf.	Interval]	Deff
Severely poor (p0_185)					
San	0.390	0.063	0.266	0.514	3.021
Caprivi languages	0.108	0.016	0.077	0.139	1.925
Otjiherero	0.088	0.020	0.048	0.128	4.012
Rukavango	0.349	0.032	0.286	0.411	3.697
Nama/Damara	0.214	0.017	0.181	0.247	2.524
Oshiwambo	0.118	0.010	0.097	0.138	4.420
Setswana	0.010	0.011	-0.012	0.032	0.593
Afrikaans	0.035	0.009	0.017	0.053	2.741
German	0.000	0.000	0.000	0.000	.
English	0.004	0.004	-0.004	0.011	0.518
Others	0.096	0.033	0.031	0.161	1.306
Namibia	0.138	0.007	0.125	0.152	3.891
Poor (p0_262)					
San	0.597	0.048	0.504	0.691	1.689
Caprivi languages	0.246	0.025	0.197	0.295	2.468
Otjiherero	0.170	0.029	0.112	0.228	4.760
Rukavango	0.544	0.028	0.490	0.599	2.554
Nama/Damara	0.342	0.022	0.299	0.386	3.184
Oshiwambo	0.285	0.014	0.258	0.313	4.164
Setswana	0.145	0.045	0.056	0.234	0.793
Afrikaans	0.079	0.011	0.057	0.101	1.925
German	0.000	0.000	0.000	0.000	.
English	0.006	0.004	-0.003	0.014	0.437
Others	0.164	0.047	0.072	0.257	1.659
Namibia	0.276	0.009	0.259	0.293	3.807

Table I-3: 95 % confidence intervals for estimates of incidence of poor and severely poor households by sex of the head of household

	Estimate	Std. Err.	[95% Conf.	Interval]	Deff
Severely poor (p0_185)					
Female	0.151	0.009	0.134	0.168	2.271
Male	0.129	0.008	0.114	0.144	3.096
Not stated	0.124	0.062	0.003	0.245	1.193
Namibia	0.138	0.007	0.125	0.152	3.891
Poor (p0_262)					
Female	0.304	0.012	0.280	0.328	2.694
Male	0.258	0.009	0.239	0.276	2.734
Not stated	0.150	0.065	0.022	0.278	1.132
Namibia	0.276	0.009	0.259	0.293	3.807

Table I-4: 95 % confidence intervals for estimates of incidence of poor and severely poor households by type of dwelling

	Estimate	Std. Err.	[95% Conf.	Interval]	Deff
Severely poor (p0_185)					
Detached house	0.035	0.004	0.027	0.043	1.604
Apartment	0.013	0.006	0.001	0.026	0.842
Traditional dwelling	0.213	0.013	0.187	0.239	3.793
Improvised housing	0.185	0.015	0.155	0.214	2.749
Other	0.082	0.022	0.038	0.125	1.928
Namibia	0.138	0.007	0.125	0.152	3.891
Poor (p0_262)					
Detached house	0.081	0.006	0.069	0.093	1.856
Apartment	0.027	0.009	0.008	0.045	0.992
Traditional dwelling	0.436	0.015	0.406	0.466	3.473
Improvised housing	0.319	0.019	0.283	0.356	3.019
Other	0.148	0.031	0.088	0.209	2.186
Namibia	0.276	0.009	0.259	0.293	3.807

Table I-5: 95 % confidence intervals for estimates of incidence of poor and severely poor households by main water source

	Estimate	Std. Err.	[95% Conf.	Interval]	Deff
Severely poor (p0_185)					
Piped in dwelling	0.016	0.003	0.011	0.021	1.157
Piped on site	0.099	0.010	0.079	0.119	1.823
Neighbour's tap	0.192	0.021	0.150	0.234	1.794
Public tap	0.190	0.015	0.161	0.219	3.539
Water carrier/tanker	0.232	0.039	0.155	0.309	3.243
Private borehole	0.353	0.086	0.184	0.522	0.553
Communal borehole	0.166	0.043	0.082	0.250	1.071
Protected well	0.228	0.029	0.170	0.286	3.244
Spring	0.343	0.042	0.260	0.426	2.877
Flowing water	0.175	0.031	0.114	0.235	1.005
Rain water tank	0.203	0.046	0.114	0.293	2.489
Unprotected well	0.191	0.030	0.132	0.249	2.226
Dam/pool/stagnant water	0.109	0.105	-0.098	0.315	1.365
Other	0.173	0.051	0.072	0.274	0.797
Not stated	0.211	0.148	-0.079	0.502	0.524
Namibia	0.138	0.007	0.125	0.152	3.891
Poor (p0_262)	0.040	0.005	0.031	0.049	1.511
Piped in dwelling	0.216	0.017	0.183	0.249	2.647
Piped on site	0.382	0.027	0.328	0.436	1.923
Neighbour's tap	0.390	0.018	0.354	0.426	3.437
Public tap	0.449	0.044	0.363	0.535	2.902
Water carrier/tanker	0.621	0.100	0.424	0.818	0.725
Private borehole	0.260	0.052	0.158	0.362	1.146
Communal borehole	0.434	0.035	0.365	0.503	3.351
Protected well	0.519	0.044	0.434	0.605	2.775
Spring	0.409	0.044	0.323	0.495	1.194
Flowing water	0.435	0.050	0.337	0.533	1.978
Rain water tank	0.397	0.039	0.321	0.473	2.390
Unprotected well	0.201	0.133	-0.060	0.463	1.322
Dam/pool/stagnant water	0.309	0.070	0.172	0.446	0.979
Other	0.492	0.290	-0.076	1.061	1.341
Not stated	0.276	0.009	0.259	0.293	3.807
Namibia	0.016	0.003	0.011	0.021	1.157

Table I-6: 95 % confidence intervals for estimates of incidence of poor and severely poor households by main toilet facility

	Estimate	Std. Err.	[95% Conf.	Interval]	Deff
Severely poor (p0_185)					
Flush/sewer	0.023	0.004	0.016	0.030	1.834
Flush/septic tank	0.038	0.012	0.015	0.060	1.314
Pit latrine/VIP	0.081	0.014	0.053	0.109	1.207
Pit latrine/no ventilation	0.166	0.027	0.112	0.219	2.869
Bucket	0.248	0.058	0.134	0.362	2.860
Other	0.102	0.070	-0.035	0.239	1.003
Bush	0.216	0.011	0.194	0.239	3.798
Not stated	0.039	0.039	-0.038	0.116	0.651
Namibia	0.138	0.007	0.125	0.152	3.891
Poor (p0_262)					
Flush/sewer	0.059	0.006	0.047	0.071	2.198
Flush/septic tank	0.103	0.020	0.064	0.142	1.496
Pit latrine/VIP	0.168	0.024	0.121	0.214	1.745
Pit latrine/no ventilation	0.336	0.031	0.275	0.397	2.324
Bucket	0.404	0.061	0.284	0.525	2.483
Other	0.222	0.097	0.032	0.412	1.029
Bush	0.423	0.013	0.397	0.450	3.615
Not stated	0.169	0.120	-0.066	0.403	1.631
Namibia	0.276	0.009	0.259	0.293	3.807

Table I-7: 95 % confidence intervals for estimates of incidence of poor and severely poor households by material of wall of housing

	Estimate	Std. Err.	[95% Conf.	Interval]	Deff
Severely poor (p0_185)					
Cement blocks	0.037	0.004	0.029	0.044	1.791
Bricks	0.072	0.017	0.039	0.105	1.016
Iron/zinc	0.198	0.015	0.169	0.226	2.371
Poles/sticks/grass	0.189	0.020	0.150	0.228	3.001
Sticks/mud/clay/dung	0.231	0.016	0.199	0.262	2.989
Asbetos	0.054	0.025	0.004	0.104	0.966
Tiles	0.127	0.063	0.003	0.250	1.140
Slates	0.000	0.000	0.000	0.000	.
Thatch	0.361	0.075	0.213	0.508	2.604
Other	0.564	0.348	-0.119	1.247	0.492
Not stated	0.161	0.033	0.097	0.226	1.929
Don't know	0.342	0.178	-0.008	0.691	1.125
Namibia	0.138	0.007	0.125	0.152	3.891

Poor (p0_262)					
Cement blocks	0.094	0.008	0.079	0.109	2.886
Bricks	0.166	0.028	0.112	0.221	1.335
Iron/zinc	0.333	0.017	0.300	0.366	2.287
Poles/sticks/grass	0.413	0.025	0.364	0.462	3.014
Sticks/mud/clay/dung	0.461	0.018	0.426	0.496	2.598
Asbetos	0.195	0.046	0.104	0.286	1.045
Tiles	0.127	0.063	0.003	0.250	1.140
Slates	0.174	0.178	-0.176	0.525	0.885
Thatch	0.492	0.080	0.335	0.649	2.715
Other	0.564	0.348	-0.119	1.247	0.492
Not stated	0.270	0.042	0.189	0.352	2.109
Don't know	0.342	0.178	-0.008	0.691	1.125
Namibia	0.276	0.009	0.259	0.293	3.807

Table I-8: 95 % confidence intervals for estimates of incidence of poor and severely poor households by material of roof of housing

	Estimate	Std. Err.	[95% Conf.	Interval]	Deff
Severely poor (p0_185)					
Cement blocks	0.018	0.014	-0.009	0.045	0.538
Bricks	0.075	0.062	-0.047	0.196	1.555
Iron/zinc	0.093	0.006	0.082	0.105	2.624
Poles/sticks/grass	0.192	0.026	0.140	0.244	2.966
Sticks/mud/clay/dung	0.182	0.069	0.047	0.316	1.803
Asbetos	0.013	0.007	0.000	0.027	1.411
Tiles	0.000	0.000	0.000	0.000	.
Slates	0.130	0.070	-0.008	0.268	0.920
Thatch	0.232	0.017	0.198	0.266	3.746
Other	0.538	0.352	-0.153	1.228	0.497
Not stated	0.110	0.033	0.046	0.174	1.464
Don't know	0.289	0.208	-0.120	0.699	1.268
Namibia	0.138	0.007	0.125	0.152	3.891
Poor (p0_262)					
Cement blocks	0.063	0.033	-0.002	0.129	0.960
Bricks	0.225	0.095	0.038	0.411	1.447
Iron/zinc	0.180	0.008	0.164	0.197	2.986
Poles/sticks/grass	0.403	0.030	0.343	0.462	2.531
Sticks/mud/clay/dung	0.290	0.077	0.138	0.441	1.656
Asbetos	0.051	0.016	0.019	0.083	2.195
Tiles	0.000	0.000	0.000	0.000	.
Slates	0.171	0.082	0.105	0.331	0.986
Thatch	0.470	0.020	0.431	0.508	3.408
Other	1.000	0.000	1.000	1.000	.
Not stated	0.179	0.041	0.097	0.260	1.572

Don't know	0.402	0.211	-0.012	0.817	1.112
Namibia	0.276	0.009	0.259	0.293	3.807

Table I-9: 95 % confidence intervals for estimates of incidence of poor and severely poor households by material of floor of housing

	Estimate	Std. Err.	[95% Conf.	Interval]	Deff
Severely poor (p0_185)					
Sand	0.218	0.013	0.192	0.244	3.231
Concrete	0.051	0.004	0.043	0.059	1.635
Mud/clay/dung	0.226	0.020	0.187	0.265	3.136
Wood	0.013	0.011	-0.009	0.034	0.661
Other	0.099	0.047	0.008	0.191	1.502
Not stated	0.542	0.351	-0.147	1.232	0.496
Namibia	0.138	0.007	0.125	0.152	3.891
Poor (p0_262)					
Sand	0.419	0.015	0.390	0.448	2.859
Concrete	0.113	0.007	0.100	0.126	2.303
Mud/clay/dung	0.461	0.022	0.417	0.504	2.698
Wood	0.087	0.049	-0.010	0.183	1.997
Other	0.134	0.051	0.034	0.235	1.385
Not stated	0.542	0.351	-0.147	1.232	0.496
Namibia	0.276	0.009	0.259	0.293	3.807

Table I-10: 95 % confidence intervals for estimates of incidence of poor and severely poor households by ownership of and access to radio

	Estimate	Std. Err.	[95% Conf.	Interval]	Deff
Severely poor (p0_185)					
Owns	0.114	0.007	0.101	0.127	3.011
Does not own, has access	0.206	0.016	0.175	0.236	1.929
Neither own nor has access	0.193	0.014	0.164	0.221	1.983
Not stated	0.136	0.097	-0.055	0.327	1.130
Namibia	0.138	0.007	0.125	0.152	3.891
Poor (p0_262)					
Owns	0.236	0.009	0.219	0.254	3.040
Does not own, has access	0.399	0.019	0.362	0.435	1.870
Neither own nor has access	0.355	0.019	0.318	0.391	2.208
Not stated	0.308	0.134	0.045	0.571	1.181
Namibia	0.276	0.009	0.259	0.293	3.807

Table I-11: 95 % confidence intervals for estimates of incidence of poor and severely poor households by ownership of and access to telephone

	Estimate	Std. Err.	[95% Conf.	Interval]	Deff
Severely poor (p0_185)					
Owns	0.019	0.003	0.013	0.024	1.319
Does not own, has access	0.155	0.010	0.136	0.175	2.497
Neither own nor has access	0.241	0.014	0.213	0.270	3.505
Not stated	0.200	0.094	0.015	0.385	1.329
Namibia	0.138	0.007	0.125	0.152	3.891
Poor (p0_262)					
Owns	0.049	0.005	0.040	0.057	1.455
Does not own, has access	0.335	0.013	0.310	0.360	2.469
Neither own nor has access	0.446	0.017	0.413	0.479	3.525
Not stated	0.413	0.107	0.202	0.624	1.140
Namibia	0.276	0.009	0.259	0.293	3.807