

Namibia

Namibia



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Ministry of Health and Social Services

NAMIBIA NATIONAL SMART SURVEY

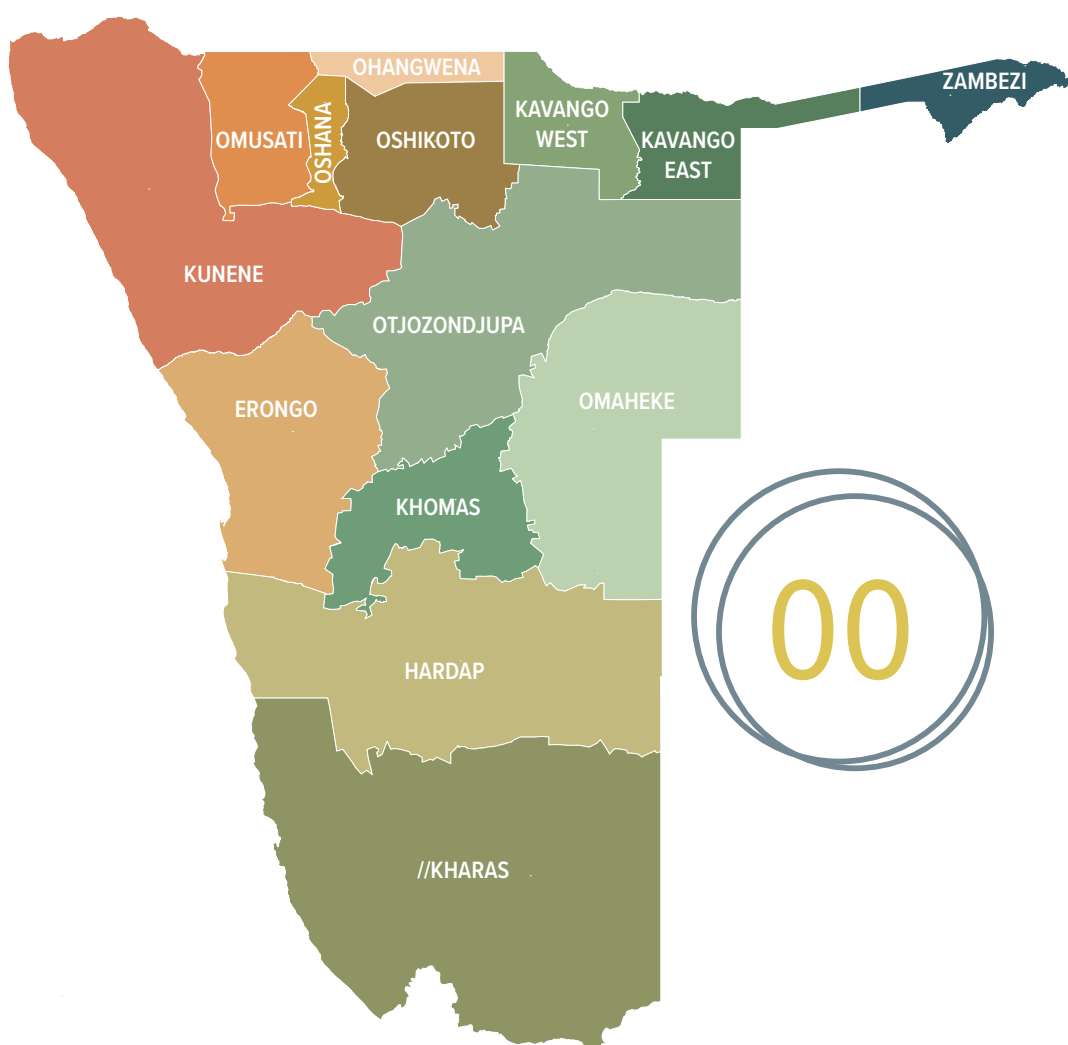




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ACRONYMS

ACF	Action Against Hunger
ARI	Acute Respiratory Infection
BCG	Bacillus Calmette-Guerin
BHA	Bureau of Humanitarian Assistance
BSU	Basic Sampling Unit
cGAM	Combined Global Acute Malnutrition
CI	Confidence Interval
CMAM	Community Based Management of Acute Malnutrition
CMR	Crude Mortality Rate
cSAM	Combined Severe Acute Malnutrition
ENA	Emergency Nutrition Assessment
FCS	Food Consumption Score
GAM	Global Acute Malnutrition
HAZ	Height for Age Z-Score
HHs	Households
IEC	Information, Education and Communication
IFAS	Iron and Folic Acid Supplementation
IMAM	Integrated Management of Acute Malnutrition
IPC	Integrated Food Security Phase Classification
IYCF	Infant and Young Child Feeding Practices
MAM	Moderate Acute Malnutrition
MDD-W	Minimum Dietary Diversity for Women
MHSS	Ministry of Health and Social Services
MUAC	Mid-Upper Arm Circumference
NDHS	Namibia Demographic Health Survey
NSA	Namibia Statistics Agency
OPV	Oral Polio Vaccine
ORS	Oral Rehydration Salts
OTP	Outpatient Therapeutic Program
PLW	Pregnant and Lactating Women
PPS	Probability Proportional to Size
RC	Reserve Cluster
RUTF	Ready to Use Therapeutic Program
SAM	Severe Acute Malnutrition
SD	Standard Deviation
SDG	Sustainable Development Goals
SEA	Standard Enumeration Area
SMART	Standardized Monitoring and Assessment of Relief and Transitions
U5	Under 5 years Children
U5MR	Under 5 Mortality Rate
UN	United Nations
UNICEF	United Nations Children Fund
USAID	United States Agency for International Development
WASH	Water, Sanitation and Hygiene
WAZ	Weight for Age Z-Score
WHO	World Health Organization
WHZ	Weight for Height Z-Score
WRA	Women of Reproductive Age

REGIONAL SURVEYS

The 2024 SMART survey was conducted in all 14 regions of Namibia.

Besides this national report, survey findings for all regions are also available, numbered as follows:

1 //Kharas

2 Hardap

3 Khomas

4 Erongo

5 Omaheke

6 Otjozondjupa

7 Kunene

8 Omusati

9 Oshana

10 Ohangwena

11 Oshikoto

12 Kavango West

13 Kavango East

14 Zambezi



FOREWORD

The 2024 El Niño event was the worst to hit southern Africa in the past 40 years, with severe consequences to communities already facing climate-related challenges, and other microeconomic conditions. The effect of El Niño is uneven across the country and varies across countries, with drought being the main feature, and driver of the humanitarian consequences. In Namibia, deteriorating food security is driven by climatic shocks like drought, dry spells, erratic rainfall, price shocks, economic decline, and unemployment.



The Standardized Monitoring and Assessment of Relief and Transitions (SMART) is a nutrition assessment methodology that was specifically designed to provide decision-makers with the ability to collect reliable and accurate nutrition and mortality data, both in humanitarian and development contexts.

The 2024 SMART survey was implemented by the Ministry of Health and Social Services (MHSS) in collaboration with the United Nations Children's Fund (UNICEF) Namibia, the United States Agency for International Development (USAID) and the Bureau for Humanitarian Assistance (BHA).

The aim of the SMART surveys in Namibia is to generate representative region-level data on the nutrition status of children (6 to 59 months), and women of reproductive age (WRA) for the 14 regions of Namibia. A long-term objective of the survey is to strengthen the technical capacity of Organisations, Ministries and Agencies (OMAs) to plan, conduct, process, and analyse data from complex national population and health surveys.

Moreover, the 2024 Namibia SMART Survey is similar to surveys conducted in other developing countries, thereby providing national and international comparative data. It further adds to the vast and growing international database on demographic and health-related variables.

MHSS would like to extend its appreciation to all development partners for their input to the survey, to UNICEF for providing financial and technical support, and most importantly, to the mothers and children who provided the information on which this report is based.

I urge you to use the information provided in this report to evaluate the success of current policies and programmes, and in so doing, to formulate new nutrition and health interventions, policies and programmes.



Dr Esperance Luvindao, MP
MHSS



Mr Samuel Kweku Ocran
UNICEF Representative in Namibia



PREFACE



The Namibia Standardised Monitoring and Assessment of Relief and Transitions (SMART) survey was conducted in all 14 regions in the country.

The SMART survey assessed Water, Sanitation and Hygiene (WASH) practices, specific morbidities for children 6-59 months and health seeking behaviours, coverage of health programs (Vitamin A supplementation, deworming and immunisation), infant and young child feeding practices, as well as the food consumption score and the households' coping strategies. These are basic interventions yet cost-effective, and efficient Primary Health Care interventions.

Therefore, the Ministry of Health and Social Services would like to express our sincere appreciation to UNICEF in collaboration with the Bureau for Humanitarian Assistance, and Action Against Hunger Canada for financial and technical support, as well as capacity building of many local Health Workers, and other professionals from the public sector and academia, on the SMART methodology.

The Ministry also appreciates and acknowledges the Office of the Prime Minister for their technical and logistics support, the Namibia University of Science and Technology (NUST) and the Namibia Statistics Agency (NSA) for their immense technical support on survey preparations, sampling, data collection, analysis and report writing.

A special acknowledgement and gratitude goes to the Directorate of Health Information and Research, the respective Regional Health Directorates, SMART Survey Managers, technical teams for their tireless efforts to ensure the survey protocol was sound, and that data collected was of the highest quality. The teams were led by the Subdivision of Food and Nutrition, who ensured all the managers adhered to the guidance given on the survey implementation. The UNICEF nutrition team and the SMART advisors ensured all the technical support to the teams was provided promptly.

At the helm of the survey leadership was the MHSS Directorate of Primary Health Care, and in particular the Subdivision of Food and Nutrition. Their diligent leadership in planning the implementation of the survey, mobilisation of all the stakeholders involved technical review of the protocol to ensure it meets all the technical and ethical requirements and validation and meticulous monitoring of the implementation is highly appreciated.

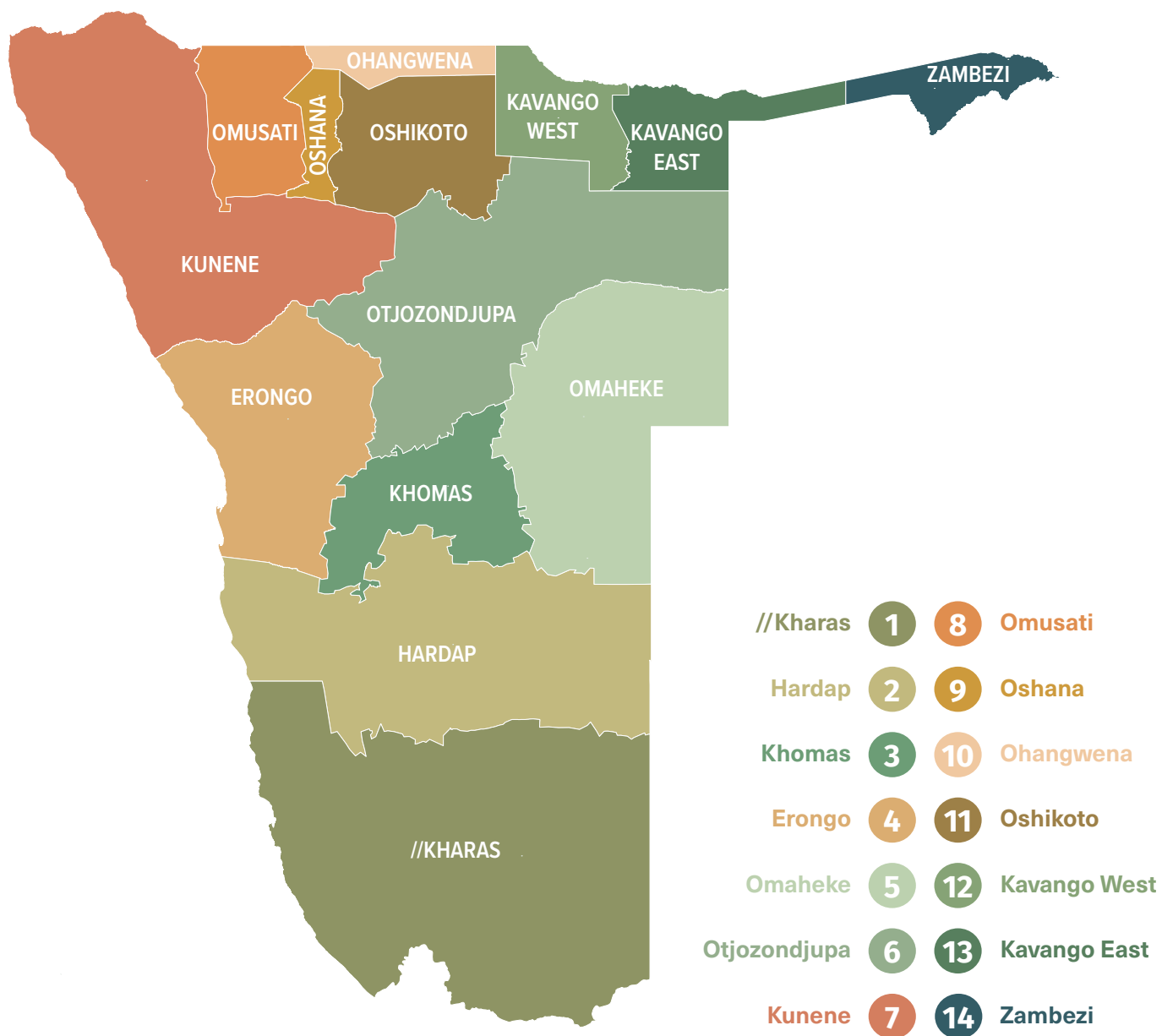
Last but not the least, the caregivers and their households who participated in the survey are highly acknowledged for generously giving their time and ardently providing information to the survey teams. The households not included in the survey are acknowledged for their understanding in the sampling procedure and supporting the teams to survey the selected households.

A handwritten signature in black ink, appearing to read 'Penda Ithindi'.

Penda Ithindi

Executive Director, MHSS





EXECUTIVE SUMMARY

Namibia is currently experiencing drought, an effect of the 2024 El Nino which is the worst to hit southern Africa region in 40 years. To determine the change in the nutrition situation occasioned by the drought, MHSS, with the support of UNICEF Namibia conducted a nationwide integrated SMART survey, covering all the 14 regions in the country. Capacity building of the regional MHSS staff to conduct SMART surveys started with training of managers on SMART methodology in August 2024, followed by the training of data collection teams at the regional level, followed by data collection. All survey data was collected between 10 – 30 September, 2024, with data collection starting on different dates for the regions.

The main objective of the SMART surveys, which were conducted using the SMART+ infrastructure, was to assess the nutritional status of both children aged 6-59 months and women of reproductive age (WRA), to determine the retrospective crude and U5 mortality rates in the regions, as well as getting the national estimates of the nutrition situation. Additionally, the surveys assessed water, sanitation and hygiene practices (WASH), specific morbidities for children 6-59 months and health seeking behaviours, coverage of health programmes (vitamin A supplementation, deworming and immunisation), infant and young child feeding practices, as well as the food consumption score and coping strategies of households (HHs).

A total of 14 independent SMART surveys provided regional estimates, while key findings determined the national estimates. The Standardized Monitoring and Assessment of Relief and Transitions (SMART) methodology was used adopting the SMART+ approach. A cross-sectional study with two-stage cluster sampling was applied. Stage one involved the random selection of clusters in every survey area using the probability proportional to population size (PPS) approach, while stage two involved the selection of households using simple random sampling.

The Standard Enumeration Area (SEA) was the primary sampling unit, and households the basic sampling unit. The sampling process involved determining the sample size for children and households in the anthropometric survey, while the total population to be included, and corresponding households were determined for the mortality survey. The highest household sample of the two surveys (anthropometry and mortality) was used as the overall survey sample. All the other indicators assessed in the survey were considered additional, and did not have their sample size determined independently, but their assessment was based on the mortality and anthropometry sample size. Caution is therefore needed while interpreting the additional indicators at regional level, especially the infant and young child feeding (IYCF) indicators which require a bigger sample size for interpretation. The national weighted estimates have a large sample, and therefore produced precise findings for all indicators. Table 1 contains the national estimates of the main findings.

Table 1: Summary of findings, national

Demographics		
	Total number of households surveyed	10,094
	Total population under 5 years	7,962
	Total population under 2 years	2,697
	Total women of reproductive age	9,922
	Average household size	4.09
	Proportion of children U5	19.3%
	Indicator	% (95% CI)
Marital status of respondents		
	Married	31.2%
	Living with a man	13.8%
	Widowed	9.7%
	Divorced	1.9%
	Separated	2.1%
	Never Married/lived with a man	41.3%
School enrolment (4 to 18 years)		
	Proportion of children currently not enrolled in school	15.9% (15.0 - 16.9)
Physiological status of WRA		
	Pregnant	7.5% (6.9 - 8.2)
	Lactating with an infant less than 6 months	38.1% (35.3 - 41.0)
	Lactating with an infant more than 6 months	61.9% (59 - 64.7)
	Not pregnant/Not lactating	76.1% (75.0 - 77.3)
Maternal nutrition		
	Prevalence of acute malnutrition (MUAC <230mm) in pregnant and lactating	15.3% (12.9 - 17.7)
	Prevalence of acute malnutrition (MUAC <230mm) in non-pregnant and non-lactating	14.6% (13.5 - 15.6)
	Minimum dietary diversity for women (MDD-W)	37.4% (35.8 - 39.0)
Iron and folic acid supplementation		
	Pregnant women who received iron/folic supplements	75.8% (73.8 - 77.8)
	Pregnant women who consumed IFAS 90-180 days	42.2% (39.1 - 45.3)
	Pregnant women who consumed IFAS >180 days	30.5% (27.8 - 33.2)

Child anthropometric results

Prevalence of GAM (WHZ)



Prevalence of global malnutrition (<-2 z-score and/or oedema)	6.7% (6.0 - 7.5)
Prevalence of severe malnutrition (<-3 z-score and/or oedema)	1.0% (0.7 - 1.3)

Combined prevalence of GAM (WHZ and MUAC)

Prevalence of cGAM	7.4% (6.6 - 8.2)
Prevalence of cSAM	1.1% (0.8 - 1.4)

Prevalence of underweight (WAZ)



Prevalence of underweight (<-2 z-score)	18.9% (17.6 - 20.1)
Prevalence of severe underweight (<-3 z-score)	4.4% (3.7 - 5.0)

Prevalence of stunting (HAZ)



Prevalence of stunting (<-2 z-score)	29.5% (28.0 - 30.9)
Prevalence of severe stunting (<-3 z-score)	8.3% (7.5 - 9.1)

Prevalence of overweight



Prevalence of overweight (>2 z-score)	1.4% (1.1 - 1.7)
Prevalence of severe overweight (>3 z-score)	0.3% (0.1 - 0.4)

Childhood illness



Fever	16.3% (15.1 - 17.4)
ARI symptoms	17.3% (15.9 - 18.6)
Diarrhoea	0.9% (0.6 - 1.2)

Treatment seeking for childhood morbidities



Treatment seeking for fever	56.3% (52.9 - 59.8)
Treatment seeking for ARI symptoms	60.0%*¹
Treatment seeking for diarrhoea	42.6% (39.2 - 46.0)

Immunisation coverage



BCG (Scar or card)	92.3%
OPV 1 (by card)	82.6%
OPV 1 (recall)	9.2%
OPV 3 (by card)	81.0%
OPV 3 by recall)	8.9%



Measles - 1st dose (by card)	79.5%
Measles - 1st dose (by recall)	8.9%
Measles - 2nd dose (by card)	72.6%
Measles - 2nd dose (by recall)	9.0%

Child anthropometric results

Vitamin A supplementation and deworming

	Vitamin A supplementation (6-59 months) by card	69.1% (67.1 – 71.1)
	Vitamin A supplementation (6-59 months) by recall	9.6% (8.6 – 10.6)
	Deworming coverage (12-59 months)	74.8% (72.6 – 77.0)

Infant and Young Child Feeding (IYCF)

	Ever breastfed (EvBF)	87.7% (85.9-89.5)
	Early initiation of breastfeeding (EIBF)	63.6% (60.7-66.5)
	Exclusive breastfeeding under 6 months (EBF)	49.0% (44.2-53.8)
	Mixed milk feeding under six 6 months (MixMF)	20.7% (16.6-24.9)
	Continued breastfeeding 12-23 months (CBF)	36.0% (33.1-39.0)
	Bottle feeding 0-23 months	34.1% (31.7-36.4)
	Introduction of solid, semi- solid or soft foods 6–8 months (ISSSF)	78.5% (73.2-83.8)
	Minimum meal frequency 6-23 months	39.1% (36.2-42.0)
	Minimum dietary diversity 6-23 months	16.9% (14.2-19.5)
	Minimum acceptable diet 6-23 months	8.7% (6.9-10.6)
	Minimum milk feeding for non-breastfed children 6-23 months	34.1% (30.8-37.4)
	Egg and/or flesh food consumption	44.5% (41.4-47.5)
	Sweet beverage consumption	35.3% (32.2-38.4)
	Unhealthy food consumption	25.5% (23.0-28.1)
	Zero vegetable or fruit consumption	53.7% (50.5-56.8)

Other indicators

Child food poverty (6-23 months)

	Moderate food poverty	26.3% (24.0-28.7)
	Severe food poverty	40.6% (37.5-43.8)

Food security and livelihood

	Proportion of households with an acceptable food consumption score (FCS > 35)	67.3% (65.8-68.9)
	Proportion of households on social protection schemes	41.6% (40.1-43.2)

Water, Sanitation and Hygiene (WASH)

	Proportion of households accessing water from protected/ treated sources	93.9% (92.8-95.0)
	Proportion of households with access to improved sanitation facilities	66.6% (63.7-69.6)
	Proportion of households with access to a specific handwashing device	32.6% (30.1-35.1)
	Proportion of households with access to sufficient quantity of potable water (≥ 15 lpppd)	56.1% (54.5-57.6)



Call to Action

- 1 **Early action is urgently required** in Oshikoto region, and other regions in the medium threshold to avert a nutritional crisis.
- 2 **Pregnant and lactating women, and children under five should be prioritised** in food distribution and/or emergency cash transfer interventions, with a food package that includes both calories and protein.
- 3 To further **close a wide nutrient gap**, pregnant and breastfeeding women and children under-five should receive nutrient-dense supplementary foods, and **moderate wasting must be urgently managed to prevent further deterioration**.
- 4 Micronutrient supplementation during pregnancy should go beyond iron and folate, with the **provision of an array of micronutrients** of public health importance.
- 5 As the emergency evolves, it is critical to **improve the completeness, quality and frequency of routine data** to monitor the nutrition situation, while timely identifying and treating children with malnutrition through active case finding.
- 6 **Expand treatment capacity to every health facility** ahead of the peak of the lean season in Quarter 1, 2025, to prepare for an anticipated increase in wasted children.
- 7 **Urgent action required for immunisation services**, as well as other prevention services in Kunene region, which appears to offset other regions.

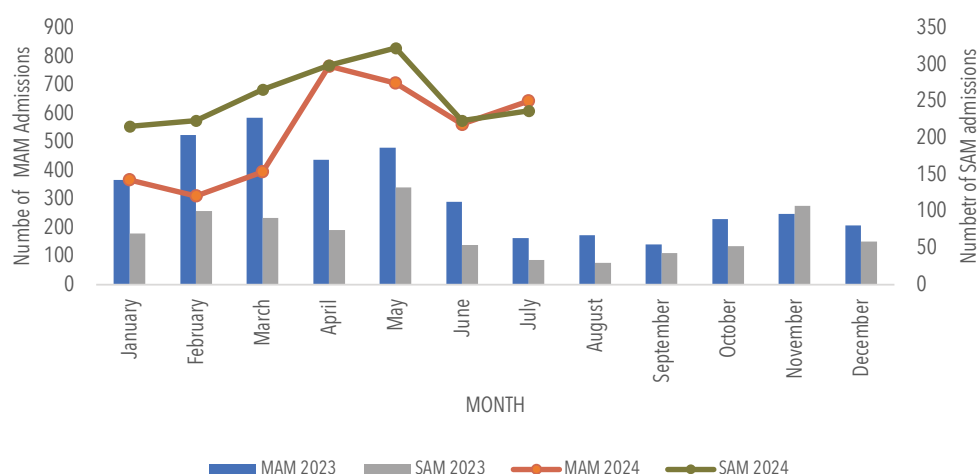


1.1 Background

The current humanitarian situation in southern Africa is linked to climate change. The 2024 El Niño event is the worst to hit Southern Africa in the last 40 years, with severe consequences to the communities already facing challenges due to failed crops and other adverse microeconomic conditions. The impact is characterised by drought, severe food shortages, limited access to clean water, disease outbreaks and loss of livestock. The effect of El Niño is evident across the country and varies across regions. Noting that Namibia suffers from the triple-burden of malnutrition, of over-nutrition (overweight and obesity) that coexist alongside undernutrition (stunting and wasting), and micronutrient deficiencies, the impact of this drought cannot be underestimated.² Almost 1 in 4 children (22.7%) and 7.1% of children under the age of 5 years of age were estimated to be stunted and wasted respectively, while the prevalence of anaemia in women of reproductive age is at 25.2%, and exclusive breastfeeding for children 0-5 months is at 48.3%.³ Marked inequalities exist between linguistic groups - 3 in 4 U5s in San communities are stunted, and 12.6% are wasted (more than double the national average). Additionally, at least one in three households cannot afford a basic nutritious diet, and in certain regions this increases to 70% of the population.⁴

In UN Namibia's newly released drought emergency report,⁵ it is estimated that 1.4 million people (48% of the population) are in acute food insecurity - IPC phases 3 and 4 - and require urgent humanitarian assistance. This is a significant increase from 1.2 million people in the period April- June 2023, and the 491,000 reported in July 2023, according to a recent Integrated Food Security Phase Classification (IPC) analysis report.⁶ This serious deterioration in food security is affecting all 14 regions, with up to 10% of people in Kavango West, Hardap, Kavango East and Omaheke regions categorised in phase 4 (IPC - Emergency phase). Children and women are the most at risk with sub-optimal maternal, infant and young child feeding practices characterised by high food poverty, and driven by limited market access and high food prices, with a potential negative impact on the delivery of quality life-saving health and nutrition services. This situation continues to deteriorate further with no significant rain forecast soon. According to the MHSS district health information systems, trends in admissions and treatment outcomes for severely wasted children have been worsening for the last three years, with Kavango East as the worst affected region (Figure 1).

Figure 1: Integrated Management of Acute Malnutrition (IMAM) programme admission trends, Namibia



The primary drivers of malnutrition in Namibia are increasing food insecurity, unemployment, rising food prices, poor dietary diversity, low birth weight, food environment and sub-optimal feeding practices. Preventive service delivery through the health system, food systems and the social protection system remain inadequate to meet the needs of communities, both in coverage and quality. Lack of access to nutrient-rich foods, especially in marginalised communities, requires food system interventions that provide nutrient-dense foods to children. Furthermore, childhood and adolescent obesity is on the rise, and this Food and Nutrition Security Policy provides an opportunity for action.

1.2 Survey justification

Prior to this SMART survey, Namibia lacked reliable representative data on the nutrition situation, as well as other critical information needed to inform on the drought response. Until recently, the 2013 NDHS provided the only available population-level national nutrition data. The lack of recent data has affected the accuracy of estimating the caseload of children requiring treatment, and efficiency in targeting the nutrition response. The risk of either significantly over- or under-estimating needs could not be avoided, resulting in either over- or under-resourcing key elements of the response plan, i.e., essential WASH, health and nutrition supply chain, human resources for health, service delivery among others.

To generate timely, representative, and reliable data in Namibia, the SMART survey methodology was recommended. SMART is an inter-agency initiative launched in 2002 by a network of organisations and humanitarian practitioners. SMART methodology is based on two vital basic public health indicators for the assessment of the magnitude and severity of a humanitarian crisis: nutrition and mortality.

1.3 Main objective

The objective of the SMART surveys was to generate representative region-level data on the nutrition status of children (6 to 59 months) and women of reproductive age (WRA) for the 14 regions of Namibia. A weighted analysis of the findings determined the national estimates.

1.3.1 Specific objectives

The specific objectives of the SMART surveys included:

1. To estimate the prevalence of wasting (by weight-for-height Z (WHZ) and MUAC), chronic malnutrition (height-for-age Z (HAZ)), and underweight /overweight (weight-for-age (WAZ)) among children 6-59 months.
2. To determine the nutritional status of pregnant and breastfeeding women, iron supplementation and Minimum Dietary Diversity (MDD) among women.
3. To estimate retrospective mortality rates (both crude mortality rates (CMR) and under-five mortality rates (U5MR)) in the target population.
4. To estimate retrospective morbidity (fever, diarrhoea, and cough) among U5 children.
5. To determine the coverage of measles vaccination 1 & 2 dose, BCG, OPV1 & OPV3 and Vitamin A supplementation, and deworming among children 6-59 months and 12-59 months, respectively.
6. To assess IYCF practices among households with children under two years of age in the target population (in addition to child food poverty).
7. To determine WASH safety, access, and practices of the survey population.
8. To assess the current food consumption score, and coping strategy situation of the surveyed population.
9. To formulate recommendations for addressing identified gaps to support advocacy, planning, decision making and monitoring.

2.1 Survey design

The SMART surveys adopted a cross-sectional study using the two-stage cluster sampling based on SMART methodology. Clusters were selected using PPS. Stage one sampling involved sampling of clusters to be included in the survey, while the second stage sampling involved the selection of households (HHs) from the sampled clusters.

2.2 Target groups, inclusion, and exclusion criteria

The target population for the anthropometric survey was children aged 6-59 months, and WRA. Mothers or caregivers were interviewed to obtain information on WASH, childhood morbidity and health-seeking behaviours, measles vaccination, vitamin A supplementation, and IYCF practices (Table 2).

Table 2: Survey indicators and target groups

Key indicators	Survey target
Nutrition status	
Prevalence of wasting, stunting, and underweight	Children 6-59 months
Prevalence of wasting among women of reproductive age	Women 15-49 years
Death rates	
Crude death rate	All household members in the surveyed area
Under 5 death rate	All children under 5 in the surveyed HHs
Food security	
Food Consumption Score (FCS)	All households in the surveyed area
Reduced Coping Strategy Index	All households in the surveyed area
WASH	
Access to safe/improved water for drinking and cooking	All households in the surveyed area
Access to improved sanitation facilities	All households in the surveyed area
Access to a handwashing system	All households in the surveyed area
Access to sufficient quantity of water	All households in the surveyed area
Health	
Child morbidity (e.g. Fever, ARI, Diarrhoea)	Children 6-59 months
Measles, mumps and rubella vaccination	Children 9-59 months
Vitamin A supplementation coverage	Children 6-59 months
Deworming coverage	Children 12-59 months
BCG Coverage	Children 0-59 months
OPV 1	Children 0-59 months
OPV 2	Children 6-59 months
Measles 1	Children 9-59 months
Measles 2	Children 15-59 months

Key indicators	Survey target
IYCF	
Ever breastfed	Children 0-23 months
Early initiation of breastfeeding	Children 0-23 months
Exclusive breastfeeding for the first 2 days	Children 0-5 months
Exclusive breastfeeding under 6 months	Children 0-5 months
Mixed milk feeding under 6 months	Children 0-5 months
Continued breastfeeding 12-23 months	Children 12-23 months
Bottle feeding	Children 0-23 months
Introduction of solid, semi-solid or soft foods 6-8 months	Children 6-8 months
Minimum meal frequency for breastfed children 6-8 months	Children 6-8 months
Minimum meal frequency for breastfed children 9-23 months	Children 9-23 months
Minimum meal frequency for breastfed and non-breastfed children 6-23 months	Children 6-23 months
Minimum meal frequency for non-breastfed children 6-23 months	Children 6-23 months
Minimum dietary diversity	Children 6-23 months
Minimum acceptable diet	Children 6-23 months
Egg and/or flesh food consumption	Children 6-23 months
Sweet beverage consumption	Children 6-23 months
Unhealthy food consumption	Children 6-23 months
Zero vegetable or fruit consumption	Children 6-23 months
Maternal health	
Skilled delivery	Women of reproductive age (15-49 years)
Iron and Folic Acid Supplementation (IFAS)	Women of reproductive age (15-49 years)
Minimum dietary diversity for women (MDD-W)	Women of reproductive age (15-49 years)

2.3 Cut-offs for nutrition indices and malnutrition classification

The analysis of anthropometric data for children 6-59 months was based on the internationally recognised indices from the 2006 WHO Growth Standards. The classification of malnutrition was based on the 2018 WHO/UNICEF classification of malnutrition (Tables 3 and 4).

Table 3: Cut-offs for the indices of WHZ, HAZ, WAZ, and MUAC

Malnutrition Status	Malnutrition Status Classification			
	Acute Malnutrition (WHZ)		Chronic malnutrition (HAZ)	Underweight (WAZ)
	Weight/ Height [WHZ]	MUAC	Height/Age [HAZ]	Weight/Age [WAZ]
Global	WHZ < -2 SD and/or Oedema	MUAC < 125 mm and/or Oedema	HAZ < -2 SD	WAZ < -2 SD
Moderate	WHZ < -2SD to ≥ -3 SD	115 mm ≤ MUAC < 125 mm	HAZ < -2SD to ≥ -3 SD	WAZ < -2SD to ≥ -3 SD
Severe	WHZ < -3 SD and/or Oedema	MUAC < 115 mm and/or Oedema	HAZ < -3 SD	WAZ < -3 SD

Table 4: WHO/UNICEF Classification for the severity of malnutrition by prevalence

	Prevalence Thresholds Level [%] ⁷				
	Very high	High	Medium	Low	Very Low
Wasting [WHZ]	≥ 15	10 – <15	5 – <10	2.5– <5	<2.5
Overweight [WHZ]	≥ 15	10 – <15	5 – <10	2.5– <5	<2.5
Stunting [HAZ]	≥ 30	20 – <30	10 – <20	2.5– <10	<2.5

2.4 Indicator measurements

Nutrition data



Age

Children 6-59 months from the selected HHs were considered eligible for the survey. Age was obtained from official written documents, such as vaccination records or the child health passports. If documentation was unavailable, a local calendar of events was used to estimate age.

Sex

Recorded as either 'f' for female or 'm' for male.

Weight

Standardised SECA scales were used for weight measurement of children between 0 to 59 months. The weight was recorded to the nearest 100g (0.1kg). A direct weighing option was used for older children who could easily stand, while the double weighing option was applied for younger children, or children who could not stand.

Height

Standard, height boards were used for measuring length and height of children. Children less than 24 months were measured lying down, and children greater than, or equal to 24 months were measured standing. The precision of the measurement was 0.1 cm.

Upper Arm Circumference (MUAC)

Measured using a flexible non-elastic tape, midway between the tip of the acromion process, and the tip of the olecranon process of the left arm, with the arm hanging freely by the side, for children, and pregnant and lactating women (PLW). MUAC measurements were recorded to the nearest 0.1cm or 1.0mm.

Bilateral

Assessed by applying a moderate thumb pressure on both feet for three seconds. If oedema is present, a shallow pit remains after releasing pressure from the feet. Only children with bilateral oedema (oedema on both feet) were diagnosed positive for nutritional oedema. The team leader confirmed all cases of oedema, and referred these cases for immediate inpatient care.

Maternal

The nutritional status of WRA was assessed using MUAC measurements, recorded to the nearest 0.1cm or 1.0mm.

Crude and U5 death rates



The survey questionnaire included questions on deaths, and demographic information during the recall period of approximately three months. Specifically, the survey collected the following data:

- Total number of people in the household.
- Number of children under five years.
- Number of people who left the household within the recall period (total and children under five years).
- Number of people who joined the household within the recall period (total and children under five years).
- Number of births in the household within the recall period.
- Number of deaths in the household within the recall period (total and children under five years).
- Cause of deaths.
- Location of deaths.

Water, Sanitation and hygiene (WASH)



WASH behaviour was assessed as follows:

Main source of water for drinking and cooking

Respondents asked to identify their main water sources.

Type of toilet/latrine used

Respondents in all selected HHs asked about the kind of latrine/toilet used.

Sharing of toilet/latrine with other households

Respondents in all selected HHs asked whether they shared their sanitary facility with other households.

Type of handwashing device used by the household

Respondents asked, and observations made on kind of handwashing device that was reported.

Availability of water at the handwashing place

Through observations.

Availability of water at the handwashing place

Through observations.

Morbidity



Retrospective morbidity

Mothers or caregivers were asked about illnesses that affected their children (6-59 months) in the past two weeks prior to the survey date.

Diarrhea

Defined as the passage of three or more loose or liquid stools in a day, and assessed among children 6-59 months by a two-week recall.

Cough (with fast, short, rapid or difficulty breathing)

Assessed among children 6-59 months by a two-week recall. This indicator was used as a proxy for suspected ARI or pneumonia.

Fever (without cough and rash)

Defined as fever in the absence of respiratory symptoms (cough), and assessed among children 6-59 months by a two-week recall.

Vitamin A supplementation, deworming, and measles vaccination

**Measles vaccination**

Assessed among children 9-59 months by checking for the measles vaccine on the EPI card if available, or by asking the caregiver to recall, if no EPI card was available.

Vitamin A supplementation

Assessed among children 6-59 months by checking the EPI card or health card if available, or by asking the caregiver to recall, if no card was available. An image of a vitamin A capsule was shown to the caregiver when asked to recall.

Deworming

Assessed among children 12-59 months by asking the caregiver to recall. A deworming tablet was shown to the caregiver when asked to recall.

Infant and Young Child Feeding (IYCF)



IYCF practices were assessed based on the standard WHO guidelines of 2021 as follows:

1. Breastfeeding indicators

Ever breastfed

Percentage of children born in the last 24 months who were ever breastfed.

Early initiation of breastfeeding

Percentage of children born in the last 24 months who were put to the breast within one hour of birth.

Exclusively breastfed for the first two days after birth

Percentage of children born in the last 24 months who were fed exclusively with breast milk for the first two days after birth.

Exclusively breastfeeding under six months:

Percentage of infants 0-5 months who were fed exclusively with breast milk during the previous day.

Mixed milk feeding under six months

Percentage of infants 0-5 months who were fed formula and/or animal milk in addition to breastmilk during the previous day.

Continued breastfeeding 12-23 months

Percentage of children 12-23 months who were fed breastmilk during the previous day.

Bottle feeding 0-23 months

Percentage of children 0-23 months who were fed from a bottle with a nipple during the previous day.

2. Complementary feeding indicators

Introduction of solid, semi-solid or soft foods 6-8 months

Percentage of infants 6-8 months who consumed solid, semi-solid or soft foods during the previous day.

Minimum dietary diversity 6-23 months

Percentage of children 6–23 months who consumed foods and beverages from at least five out of eight food groups during the previous day.

Minimum meal frequency 6-23 months

Percentage of children 6–23 months who consumed solid, semi-solid, or soft foods (but also including milk feeds for non-breastfed children) the minimum number of times or more during the previous day.

Minimum milk feeding frequency for non-breastfed children 6-23 months

Percentage of non-breastfed children 6–23 months who consumed at least two milk feeds during the previous day.

Minimum acceptable diet

Percentage of children 6–23 months who consumed a minimum acceptable diet during the previous day.

Egg and/or flesh food consumption 6-23 months

Percentage of children 6–23 months who consumed egg and/or flesh foods during the previous day.

Sweet beverage consumption 6-23 months

Percentage of children 6–23 months who consumed a sweet beverage during the previous day.

Unhealthy food consumption 6-23 months

Percentage of children 6–23 months who consumed selected sentinel unhealthy foods during the previous day.

Zero vegetable or fruit consumption 6-23 months

Percentage of children 6–23 months who did not consume any vegetables or fruits during the previous day.

2.5 Sample size determination

The regional-level sample sizes were determined on the SMART+ platform, which has a similar approach to the Emergency Nutrition Assessment (ENA) for SMART software. The surveys were combined, including both the anthropometry and mortality modules, each yielding different household samples. The larger of the two samples was considered the final sample size for each survey. In determining the anthropometry sample size, several parameters were taken into consideration including expected GAM prevalence, desired precision, design effect, average household size, percentage of children under 5, and the percentage of nonresponse. For the mortality sample size, parameters included estimated death rate, desired precision for CMR, design effect to adjust for heterogeneity, recall period in days, average household size and the anticipated nonresponse rate. The total sample size was expressed both in terms of the number of children, and the number of households for anthropometry, and persons to be included, as well as the households for mortality (Tables 5 and 6).

Table 5: Anthropometry sample size calculation per region

Survey domain (Region)	Parameters for anthropometry							
	Estimated prevalence of GAM	Precision	Design effect for WHZ	Number of children to be included	Average number of persons per HH	% U5 in total population	% non-response HHs	Number of HHs to be included
//Kharas	5%	3.0	1.5	331	3.1	10.9%	3%	1122
Erongo	5%	3.0	1.5	331	3.1	11.0%	3%	1112
Hardap	5%	3.0	1.5	331	3.6	11.9%	3%	885
Kavango East	5%	3.0	1.5	331	5.3	15.8%	3%	453
Kavango West	5%	3.0	1.5	331	5.5	16.7%	3%	413
Khomas	5%	3.0	1.5	331	3.3	10.6%	3%	1084
Kunene	5%	3.0	1.5	331	3.8	15.9%	3%	628
Ohangwena	6%	3.0	1.5	393	4.8	16.2%	3%	579
Omaheke	7%	3.0	1.5	393	3.3	15.1%	3%	904
Omusati	6%	3.0	1.5	393	4.2	14.7%	3%	729
Oshana	5%	3.0	1.5	331	3.7	12.7%	3%	807
Oshikoto	6%	3.0	1.5	393	4.1	14.7%	3%	747
Otjozondjupa	5%	3.0	1.5	331	3.6	13.9%	3%	758
Zambezi	5%	3.0	1.5	331	3.7	16.1%	3%	637
Justifications	The estimated GAM prevalence in each region is not expected to exceed the 5% threshold in most of the regions in view of the 2013 DHS and the aggravating factors. ⁸	Based on the estimated GAM prevalence	To cater for little differences between the clusters	Calculated by ENA	Based on region specific average household size in 2023 census report	National proportion of children under five based on 2023 census	Anticipated nonresponse rate and guided by the NHIES 2015/16 and the LFS 2018 response rates.	Calculated by ENA

Table 6: Mortality sample size calculation per region

	Parameters for mortality sample size							
	Estimated prevalence of CDR	Precision	Design effect for CDR	Recall period in days	Number of persons to be included	Average number of persons per HH	% non-response HHs	Number of HHs to be included
//Kharas	0.11	0.2	1.5	110	1568	3.1	3%	522
Erongo	0.11	0.2	1.5	106	1627	3.1	3%	541
Hardap	0.11	0.2	1.5	107	1612	3.6	3%	462
Kavango East	0.11	0.2	1.5	103	1675	5.3	3%	326
Kavango West	0.11	0.2	1.5	102.5	1683	5.5	3%	315
Khomas	0.11	0.2	1.5	97	1778	3.3	3%	556
Kunene	0.11	0.2	1.5	100	1725	3.8	3%	468
Ohangwena	0.11	0.2	1.5	93	1855	4.8	3%	398
Omaheke	0.11	0.2	1.5	106	1627	3.3	3%	508
Omusati	0.11	0.2	1.5	100	1725	4.2	3%	423
Oshana	0.11	0.2	1.5	97	1778	3.7	3%	496
Oshikoto	0.11	0.2	1.5	97	1778	4.1	3%	447
Otjozondjupa	0.11	0.2	1.5	87	1983	3.6	3%	568
Zambezi	0.11	0.2	1.5	109	1583	3.7	3%	441
Justifications	Estimated national CDR	Recommended precision for CDR <0.3/10,000/day	To cater for little differences between the clusters	Based on the memorable event for each region. Counted from the event date to the mid-point of data collection	Calculated by ENA	Based on region specific average household size in 2023 census report	Anticipated nonresponse rate	Calculated by ENA

2.5.1 Number of households per cluster

A cluster was constituted as the predetermined number of households to be surveyed in a day, together with a focus on data quality. To facilitate logistics, each team was expected to complete one cluster per day. The number of HHs to be completed in every cluster, per day, was determined according to the time the team could spend in the field, excluding transportation, other procedures, and break times. With the expected time per interview in the household being 20 minutes, the number of HHs per cluster was determined to be 13 (Table 7). The total amount of time available for survey, after deduction of time spent outside the survey, was approximated to be 400 minutes (600-120-60-20). The number of HHs a team could effectively manage in a day was therefore calculated as follows: $400 / (20+10) = 13.3$, and rounded off to 13.

Table 7: Households per team per day

Parameter	Value (minutes)
Total time per day for field work based on departure at 0700 hrs and return at 1700 hrs	600
Travel time to cluster location (two way)	120
Duration for initial introduction and selection of household	60
Total duration of breaks	20
Travel time from one household to another	10
Average time in the household	20
Number of HHs planned/day/team	13

The total number of HHs in the sample for each survey was then divided by the number of HHS to be completed in one day, to determine the number of clusters to be included for each survey area (region). Table 8 details the total number of children, HHs, and clusters that were determined for each region.

Table 8: Sample sizes summary and clusters per region (survey area)


	Required HHs per cluster ⁹	# of Children	Total HHs	Population	Total HHs	Clusters	Days for data collection
//Kharas	13	331	1122	1568	522	87	15
Erongo	13	331	1112	1627	541	86	15
Hardap	13	331	885	1612	462	69	12
Kavango East	13	331	453	1675	326	35	6
Kavango West	13	331	413	1683	315	32	6
Khomas	13	331	1084	1778	556	84	14
Kunene	13	331	628	1725	468	49	9
Ohangwena	13	393	579	1855	398	45	8
Omaheke	13	393	904	1627	508	70	12
Omusati	13	393	729	1725	423	57	10
Oshana	13	331	807	1778	496	63	11
Oshikoto	13	393	747	1778	447	58	10
Otjozondjupa	13	331	758	1983	568	59	10
Zambezi	13	331	637	1583	441	49	9

2.5.2 Sample size for additional indicators

The larger of the two samples calculated for both the anthropometry and mortality modules was considered as the final sample size for each survey. The assessment of the additional survey indicators (HHs, WASH, morbidity prevalence, measles, vitamin A, deworming, and IYCF) was based on the anthropometry sample size, as it was larger than the mortality sample size across all the survey regions.

2.6 Sampling methodology

2.6.1 First stage sampling (selection of clusters)

The first stage of sampling involved the selection of the determined number of clusters for each region. The National Statistics Agency (NSA), who are the custodians of the sampling frames, supported the selection of the primary sampling units (PSU). The established enumeration areas were used as the PSUs. The required number of clusters were selected by applying the PPS method, with 10% additional clusters selected to be reserve clusters (RCs). These would only be visited if 10% or more clusters, or less than 80% of the children under five years, were impossible to reach during the survey.

In each selected enumeration area, the local leader familiar with the enumeration area was approached and asked to help survey teams to list all the HHs, and randomly select the required number. Selected clusters in urban areas were segmented if they had >150 HHs, and rural clusters were segmented if they had >100 HHs. Cluster segmentation was determined based on existing administrative boundaries, streets, or natural landmarks such as a river, road, or public places like markets, schools, and other public infrastructure.

2.6.2 Second stage sampling (selection of HHs)

The selection of HHs was done using simple random sampling (SRS), with 13 HHs selected in each cluster, across the 14 survey zones. In each cluster, the survey team compiled a list of all HHs with the help of the village guide. Where the list of HHs was already available, the teams updated it to ensure abandoned HHs were not included in the sampling, and that any recent HHs that were not part of the list were included prior to sampling. Team leaders and village leaders used household enumeration lists to randomly select the required HHs. Teams would start the survey from any convenient household among the randomly selected households by administering the survey questionnaires, and taking anthropometric measurements. All children aged 6 to 59 months living in the selected household were included in the anthropometric survey. If more than one eligible child was found in a household, all children were included. Children aged 0-23 months in a selected household were included in the IYCF survey. All selected HHs were asked to respond to questions concerning the other indicators i.e., WASH practices, household hunger, coverage of health programmes, morbidity status and health-seeking, and the measurement of MUAC for WRA.

The household was the basic sampling unit. The survey adopted the household definition as used in the 2023 census, where a household was defined as “a group of people living together (in the same compound), eating together and being under one head, related or unrelated.” The teams also worked with the village leader to ensure compounds with more than one household had the households listed separately.

2.7 Referral

All children identified as meeting the case definition for both moderate, and severe acute malnutrition (SAM), were referred to the nearest health facility offering treatment for acute malnutrition.

2.8 Special cases

- a. No children in the household: Only the household questionnaire was administered. The survey teams were cautioned not to replace a household which had no children.
- b. Abandoned household: All abandoned HHs were removed before household listing and selection.
- c. Absent household: The teams skipped absent HHs and continued to the next household according to the sampling procedure. The absent HHs were revisited before leaving the field. A household was only marked absent after at least two re-visits to the household had been made.
- d. Absent children: If a child was absent at the time of the survey, the team collected the other household-related data, and informed the mother that they would return later that day to look for the missing child, before departure from the survey area.
- e. Children with disability/handicap: All data that was not influenced by a child's disability was collected. The team determined whether all anthropometric indicators could be measured. In cases where it was not possible to measure height and weight, the child was assigned an ID number, and teams recorded data as missing, together with the reason.

A cluster control form was used to record the assessment outcome for every selected household.

2.9 Survey team composition, training and supervision

2.9.1 Survey team composition

For each region, a total of six teams, composed of three persons per team, were engaged. A seventh trained team was on standby, to be engaged if any of the members of the six teams were not available. As deemed necessary in each of the survey areas, this team was included in the data collection, while in instances where the extra members could not form a seventh team, the extra members were engaged to support other teams in the listing of HHs, and further mobilisation of the clusters. Three supervisors supported the teams in each region, with each supervisor supporting two teams. The designated role of each team member was as follows:

Team Leader:

Organise meetings with village leaders and local authorities to conduct cluster mapping and segmentation (if required), ensure complete HHs listing, ensure random HH selection during the second stage of cluster sampling, monitor and supervise anthropometric measurement, conduct household interviews, and complete the cluster control form.

1. **Measurer:** Measure weight, height, oedema, and MUAC of children and WRA, maintenance of measuring equipment, and assist the team leader with cluster mapping and other requested assistance.
2. **Assistant measurer:** Assist the measurer in taking anthropometric measurements, maintenance and transport of measuring equipment while in the field.
3. **Field supervisor:** Technical staff drawn from MHSS provided technical support, including ensuring proper procedures were followed during household selection, ensuring interviews were done correctly and consistently in every household, and ensuring data was captured accurately, and providing feedback to the survey team while in the field.

2.10 Survey team training

In each region, teams underwent a 5-day SMART survey enumerators training focused on the survey objectives, household selection techniques, demonstration of anthropometric measurements, familiarisation with the questionnaire, and a session on how to use the SMARTCollect for data collection and standardisation test. The training incorporated classroom lectures, discussions and practical sessions.

The quality of anthropometric measurements was assessed through a standardisation test which included a minimum of 10 healthy children under the age of 5 years, in each region. Out of the 10 children, 4 were aged 6-23 months to ensure the teams had significant experience in measuring length of infants. During the standardisation test, a team of two enumerators measured each child twice to evaluate the accuracy and precision of measurements.

In each survey area, a field test was conducted on the last day of training to assess survey teams' readiness for data collection. Team composition was based on performance during the standardisation test, to ensure each team had a capable measurer.

2.11 Survey equipment

Weight was measured using SECA electronic scales that allow for indirect measurement of the child's weight. Weighing scales were calibrated every morning before starting data collection. Standard UNICEF height boards were used for measuring height. The mid-upper arm circumference of both children, and PLWs, were measured using non elastic MUAC tapes.

2.12 Data collection

Data collection in 10 survey areas began on September 10, while the remaining four regions started data collection on October 22. Data collection was completed on different dates, based on the number of clusters in each region, with the last date of data collection being September 29. Data collection days in the regions varied from six in Kavango West region, to 15 in //Kharas region.

2.13 Data entry and management

Data was collected offline using SMARTCollect, which is the first tool in the SMART+ Suite. On return from the field, the team leader daily reviewed all saved forms, and submitted the data to the SMART+ platform which is customised to give a quick snapshot of data quality and progress in data collection. This informed feedback to teams before proceeding for data collection on the following day. All survey data was managed on the SMART+ platform, including any necessary data cleaning.

2.14 Quality Assurance

Several measures were employed to ensure data quality, including:

- Using the SMARTCollect application for digital data collection to minimise the possibility of errors when recording data. The application can prompt for remeasurement when values are likely to be flagged.
- A five-day comprehensive training together with standardisation test, and field pre-test for each survey area.
- Field supervision of the survey teams during data collection.
- Calibration and standardisation of the survey equipment.
- Use of cluster control forms to track the assessment outcome for every household.
- Daily plausibility checks and sharing of feedback with teams, for continuous improvement as data collection continued.

2.15 Data analysis, dissemination and report writing.

All indicators generated on the SMART+ indicators were analysed automatically on the SMART+ platform, while all other added indicators were analysed using epi info 7. SMART flags were used to exclude values that were out of range. The preliminary findings were shared with UNICEF and MHSS one week after finalisation of data collection, who then forwarded to other stakeholders as needed. Feedback was incorporated in the preparation of the final report.

2.16 Ethical approval and considerations

Informed consent was obtained from all participants before data collection. Participation in the survey was voluntary. The survey objectives were clearly explained to the respondents before gathering data. Collected data was treated confidentially, with no direct personal identifiers collected. Survey approval was sought from relevant government institutions, MHSS, local authorities, and community leaders.



3.1 Survey response rates

For the survey results to be representative, the survey needs to reach to more than 90% of the planned clusters, while more than 80% of the planned sample size for children was needed for precise estimation of the nutrition situation. The survey achieved more than 90% of the planned clusters, and significantly overachieved the planned sample for children 6-59 months, across all 14 regions of Namibia. Almost all eligible children in the HHs were measured, with minor absenteeism and nonresponse in the urban contexts of Khomas and Otjozondjupa regions. There was notable nonresponse (>10% for refusal and absenteeism) for HHs in //Kharas, Hardap, Khomas and Omusati regions (Table 9).

Table 9: Survey response rates



	HHs planned	HHs reached	% achieved	Children planned	Children reached	% achieved	Eligible children in the HHs	Eligible children measured	Response rate	Clusters planned	Clusters reached	% achieved
//Kharas	1122	1009	89.9	331	488	147.4	492	488	99.1	87	84	96.5
Erongo	1122	1045	93.1	331	536	161.9	537	536	99.8	86	82	95.3
Hardap	885	764	86.3	331	371	112.1	373	371	99.5	69	69	100
Kavango East	455	430	94.5	331	486	146.8	486	483	99.4	35	35	100
Kavango West	416	409	98.3	331	428	129.3	429	428	99.8	32	32	100
Khomas	1092	971	88.9	331	442	133.5	467	442	94.6	84	83	98.8
Kunene	637	597	93.7	331	446	134.7	451	446	98.9	49	49	100
Ohangwena	585	541	92.5	393	484	123.1	484	484	100	45	45	100
Omaheke	904	858	94.9	393	678	172.5	679	678	99.9	70	69	95.7
Omusati	741	665	89.7	393	508	129.2	509	508	99.8	57	57	100
Oshana	819	805	98.3	331	512	154.7	512	512	98.3	63	63	100
Oshikoto	754	744	98.7	393	583	148.3	583	581	99.7	58	58	100
Otjozondjupa	756	740	97.9	331	528	159.5	529	528	94.8	59	59	100
Zambezi	637	627	98.4	331	465	140.5	465	465	100	49	49	100

3.2 Social Demographic

3.2.1 Marital status of the survey respondent

Less than half of the survey respondents were either married (31.2%), or currently living with a man/woman, without being officially married (13.8%). Close to half (41.3%) had never been married, or lived with a man, while a small proportion were widowed, divorced or separated (Table 10).

Table 10: Marital status of the survey respondent, national and per region



	Number of respondents	Currently married	Living with a man/woman	Widowed	Divorced	Separated	Never married or lived with a man/woman
National	10,073	31.2%	13.8%	9.7%	1.9%	2.1%	41.3%
//Kharas	1,007	26.7%	15.4%	6.7%	1.0%	2.4%	47.9%
Erongo	1,045	32.7%	13.0%	3.8%	1.9%	0.4%	48.2%
Hardap	763	24.8%	25.5%	10.0%	2.8%	0.9%	36.0%
Kavango East	427	16.2%	34.0%	15.7%	0.9%	14.1%	19.2%
Kavango West	405	30.1%	31.4%	12.1%	3.2%	5.9%	17.3%
Khomas	876	27.9%	14.5%	3.8%	2.4%	1.4%	50.1%
Kunene	595	30.8%	12.4%	8.7%	3.0%	1.8%	43.2%
Ohangwena	540	37.8%	6.9%	14.1%	0.9%	1.3%	39.1%
Omaheke	865	25.9%	19.7%	5.6%	0.7%	0.7%	47.5%
Omusati	665	31.0%	3.2%	18.0%	1.1%	2.1%	44.7%
Oshana	360	35.7%	4.2%	12.8%	0.8%	0.9%	45.6%
Oshikoto	736	38.0%	6.0%	17.0%	2.0%	1.0%	36.0%
Otjozondjupa	739	24.8%	28.4%	5.4%	2.8%	0.3%	38.3%
Zambezi	625	46.6%	5.0%	7.7%	3.0%	2.6%	35.0%

3.2.2 Main occupation of the household head

Salaried employment was reported as the primary occupation for household heads (24.1%). Crop farming (12.6%) was also notably reported, while close to half (45.4%) of the HHs reported to have varied other sources of income. Government grants, which low earning HHs, as well as vulnerable HHs, heavily relied on, are reported as 'other' sources (Table 11).

Table 11: Main occupation of the household head, national and per region



	Number of respondents	Livestock herding	Crop farming/ Own farm labour	Employed (salaried)	Waged labour (Casual)	Petty trade	Merchant/ trader	Firewood/ charcoal	Fishing	Other
National	8,993	4.2%	12.6%	24.1%	7.0%	4.7%	1.3%	0.5%	0.2%	45.4%
//Kharas	1,007	6.5%	2.2%	33.8%	3.6%	0.5%	0.8%	0.2%	0.1%	52.3%
Erongo	1,044	1.0%	0.9%	40.0%	2.5%	4.7%	0.7%	0.1%	0.7%	49.4%
Hardap	763	12.4%	1.6%	35.9%	7.7%	2.9%	1.2%	0.3%	0.1%	37.9%
Kavango East	427	0.5%	18.0%	10.5%	10.5%	5.6%	0.0%	1.2%	0.0%	53.6%
Kavango West	405	2.2%	74.8%	7.9%	2.0%	3.2%	5.9%	1.0%	0.25%	2.72%
Khomas	876	0.3%	1.7%	43.0%	10.2%	10.7%	3.5%	0.2%	0.0%	30.3%
Kunene	595	13.4%	11.1%	12.9%	3.4%	5.5%	0.5%	2.4%	0.0%	50.8%
Ohangwena	540	0.2%	32.8%	13.9%	3.3%	0.6%	0.0%	0.0%	0.0%	49.3%
Omaheke	865	10.9%	1.6%	22.9%	5.3%	5.4%	1.0%	0.0%	0.0%	52.4%
Omusati	664	3.5%	26.1%	14.6%	1.5%	2.1%	0.3%	0.2%	0.2%	51.7%
Oshana	511	0.0%	11.7%	21.2%	0.9%	0.8%	0.6%	0.4%	0.0%	64.5%
Oshikoto	736	0.7%	8.0%	14.0%	10.1%	3.1%	1.1%	0.3%	0.1%	62.6%
Otjozondjupa	740	9.2%	2.6%	0.1%	11.4%	6.2%	1.2%	1.2%	0.0%	68.1%
Zambezi	626	3.8%	6.2%	9.7%	9.1%	0.0%	0.3%	0.0%	0.8%	70.0%

3.2.3 Household main current source of income

The majority of HHs (26.8%) relied on salaried jobs as their primary source of income, reflecting dependence on formal employment. Business activities were the second most common source at 10.9%, and 'other' (27.9%), varied and informal sources of income were also reported. The proportion of HHs that reported having no income was 18.2%, while hourly job and remittance accounted for 4.4%, and 2.8% respectively (Table 12).

Table 12: Household's main current source of income, national and per region

	Number of respondents	No income	Farming	Fishing	Business	Salaried job	Hourly job	Artisan work	Remittance	Other
National	9,911	18.2%	7.9%	0.2%	10.9%	26.8%	4.4%	0.9%	2.8%	27.9%
//Kharas	1,007	24.0%	7.6%	0.0%	4.8%	36.7%	2.8%	0.1%	0.0%	23.9%
Erongo	1,044	11.5%	1.3%	0.6%	6.8%	41.1%	2.0%	2.4%	1.4%	32.9%
Hardap	764	13.7%	8.9%	0.0%	4.7%	42.7%	3.9%	0.4%	5.9%	19.8%
Kavango East	427	3.5%	17.1%	0.0%	7.5%	11.9%	8.4%	0.0%	2.6%	48.9%
Kavango West	405	29.9%	44.9%	0.7%	11.1%	8.4%	2.72%	1.0%	0.0%	1.2%
Khomas	876	13.0%	2.1%	0.1%	19.0%	46.7%	6.3%	0.6%	2.7%	9.6%
Kunene	595	24.4%	14.5%	0.0%	8.1%	15.3%	2.4%	0.5%	6.2%	28.9%
Ohangwena	538	11.0%	18.2%	0.0%	6.1%	13.0%	2.8%	1.1%	5.9%	41.8%
Omaheke	865	20.2%	8.6%	0.0%	9.3%	31.2%	3.8%	0.6%	2.4%	23.9%
Omusati	664	42.8%	5.6%	5.1%	16.3%	0.8%	0.9%	0.5%	28.2%	0.0%
Oshana	389	8.9%	2.8%	0.1%	15.4%	21.3%	1.4%	1.8%	0.0%	49.2%
Oshikoto	736	30.0%	3.5%	0.0%	9.8%	15.1%	5.2%	0.8%	0.3%	35.3%
Otjozondjupa	783	11.9%	6.5%	0.0%	12.7%	32.2%	8.5%	2.2%	8.8%	17.1%
Zambezi	626	14.5%	6.1%	1.3%	15.7%	13.0%	6.2%	0.2%	1.8%	41.2%

3.3 Anthropometric results (WHO Standards, 2006)

3.3.1 Anthropometric data quality report

The interpretation of the anthropometric findings is key to ensuring that the survey findings are valid. The plausibility (data quality) report in a SMART survey transparently indicates any errors, including the type of errors, based on 10 standard tests (Table 13). The anthropometric data quality was rated as 'excellent' across all regions, except Kavango East, which had an 'acceptable' quality score. In some of the regions, there were notably more older children than younger children (Kavango East, Kavango West, Ohangwena, Omusati and Zambezi), while Kavango East, Ohangwena and Omaheke, recorded notably more girls than boys in the survey sample. The two key tests in the plausibility check (flagged data and standard deviation) had no penalty across all survey areas, which indicates that the anthropometric data was devoid of key mistakes, which can either over-estimate or under-estimate the prevalence of acute malnutrition.

Table 13: Plausibility report of data quality by survey, per region

	Flagged data	Overall Sex ratio	Age ratio (6-29 vs 30-59)	Dig pref score - weight	Dig pref score - height	Dig pref score - MUAC	Standard Dev WHZ	Skewness WHZ	Kurtosis WHZ	Poisson dist WHZ-2	OVERALL SCORE WHZ	Overall scoring
	Score (% of out of range)	Score (P value of chi square)	Score (P value of chi square)	Score (#)	Score (#)	Score (#)	Score (SD)	Score (#)	Score (#)	Score (P value)	%	
												
//Kharas	0 (0.6%)	0 (p=0.299)	0 (p=0.158)	0 (4)	2 (9)	0 (5)	0 (1.01)	0 (0.12)	0 (0.08)	0 (p=0.112)	2	Excellent
Erongo	0 (1.7%)	0 (p=0.966)	0 (p=0.881)	0 (4)	0 (7)	0 (5)	0 (1.06)	0 (0.18)	0 (-0.01)	0 (p=0.835)	0	Excellent
Hardap	0 (0.5%)	0 (0.162)	0 (0.281)	0 (5)	0 (7)	0 (6)	0 (1.08)	0 (0.03)	3 (-0.44)	0 (0.070)	3	Excellent
Kavango East	0 (0.6%)	4 (p=0.046)	4 (p=0.006)	2 (10)	2 (10)	2 (10)	0 (0.94)	0 (0.02)	1 (-0.25)	0 (p=0.951)	15	Acceptable
Kavango West	0 (0.2%)	0 (p=0.595)	4 (p=0.004)	0 (5)	0 (7)	0 (5)	0 (0.96)	0 (-0.01)	1 (-0.25)	0 (p=0.665)	5	Excellent
Khomas	0 (1.1%)	0 (P=0.611)	0 (P=0.821)	0 (6)	0 (6)	2 (10)	0 (1.03)	1 (0.26)	1 (-0.24)	0 (p=0.307)	4	Excellent
Kunene	0 (1.4%)	0 (p=0.187)	0 (p=0.193)	0 (4)	0 (6)	0 (4)	0 (0.96)	0 (-0.09)	0 (0.02)	0 (p=0.449)	0	Excellent
Ohangwena	0 (1.0%)	4 (P=0.001)	4 (P=0.013)	0 (5)	0 (7)	0 (7)	0 (0.94)	0 (-0.12)	0 (0.07)	0 (0.458)	8	Excellent
Omaheke	0 (0.4 %)	2 (p=0.084)	0 (p=0.357)	0 (5)	2 (9)	0 (5)	0 (1.05)	0 (0.06)	0 (-0.07)	0 (p=0.206)	4	Excellent
Omusati	0 (1.2%)	0 (p=0.352)	4 (p=0.001)	0 (3)	0 (6)	0 (5)	0 (0.97)	0 (-0.02)	0 (0.03)	1 (p=0.045)	5	Excellent
Oshana	0 (1.0%)	0 (p=0.185)	0 (p=0.176)	0 (3)	0 (5)	0 (4)	0 (1.02)	0 (0.04)	1 (-0.26)	0 (p=0.119)	1	Excellent
Oshikoto	0 (1.0 %)	0 (p=0.836)	0 (p=0.117)	0 (5)	0 (7)	2 (8)	0 (1.05)	0 (0.06)	0 (-0.17)	5 (p=0.000)	7	Excellent
Otjozondjupa	0 (1.1)	0 (p=0.696)	0 (0.996)	0 (4)	0 (6)	0 (5)	0 (1.05)	0 (-0.15)	0 (-0.16)	5 (<0.001)	5	Excellent
Zambezi	0 (1.5%)	0 (p=0.430)	4 (p=0.004)	0 (3)	0 (3)	0 (3)	0 (0.95)	0 (0.02)	0 (0.03)	0 (p=0.835)	4	Excellent

3.3.2 Prevalence of acute malnutrition based on weight-for-height, by sex

Global acute malnutrition (GAM) was defined as <-2 Z-scores for weight-for-height and/or oedema. Severe acute malnutrition (SAM) was defined as <-3 Z-scores weight-for-height and/or oedema. The Exclusions of Z-scores before analysis were made using SMART flags (WHZ -3 to 3) which are based on the observed mean. The classification for GAM was based on the 2018 WHO/UNICEF classification of malnutrition.

Nationally, the estimated prevalence of wasting for children 6-59 months was 6.7% (6.0 – 7.5), which is at the medium threshold, with both the lower and upper intervals at the medium threshold as well. Boys and girls in the sample were equally wasted. The prevalence of GAM WHZ <-2 and/or oedema in the surveys ranged from low (2.5% (1.5 - 4.0) in Erongo, to high (11.8% (8.5 - 6.3)) in Oshikoto. Overall, five regions showed a low prevalence of GAM, while eight regions were in the medium threshold, and one with a high prevalence (Table 14).

3.3.3 Prevalence of acute malnutrition based on MUAC cut off's and/or oedema, by sex

Mid-Upper Arm Circumference (MUAC) measurements can be done easily, quickly and affordably. In children aged 6-60 months, the MUAC, with simple cut-offs, is at least as predictive of death as WHZ.¹⁰ MUAC is currently not recommended for use among infants aged below 6 months because of a lack of data on its reliability, measurement in practice, and predictive value for death. However, it was reported that in rural Kenya the inter-observer reliability of MUAC among infants aged 0 to 6 months was greater than that of WFHZ.¹¹

The weighted estimate of acute malnutrition based on MUAC shows that only 1.8% of the children 6-59 months in Namibia are likely to be wasted, based on MUAC cut offs of <125 mm. The GAM prevalence based on MUAC (<125 mm) and/or oedema shows proportions of acute malnutrition ranging from 0.2% (0.0 - 1.6 95% CI) in Khomas, to 2.8% (1.4 - 5.3 95% CI) in Omusati (Table 15). The survey observed that only small proportions of children were deemed malnourished based on MUAC, compared to the proportions measured by WHZ. This suggests that MUAC may not be a sensitive indicator to detect acute malnutrition in Namibia.

Table 14: Prevalence of GAM, MAM and SAM based on weight-for-height Z-scores and/or oedema, by sex



	Sex	Number	GAM		Moderate		Severe	
			n	% (95% CI)	n	% (95% CI)	n	% (95% CI)
National	All	6935	446	6.7% (6.0 - 7.5)	380	5.7% (5.1 - 6.4)	66	1.0% (0.7 - 1.3)
	Boys	3411	241	7.4% (6.4 - 8.5)	213	6.6% (5.6 - 7.6)	28	0.8% (0.5 - 1.2)
	Girls	3524	205	6.1% (5.1 - 7.0)	167	5.0% (4.2 - 5.7)	38	1.1% (0.7 - 1.5)
//Kharas	All	482	16	3.3% (2.0 - 5.5)	14	2.9% (1.7 - 4.9)	2	0.4% (0.1 - 1.6)
	Boys	253	11	4.3% (2.4 - 7.7)	10	4.0% (2.1 - 7.2)	1	0.4% (0.1 - 2.8)
	Girls	229	5	2.2% (0.9 - 5.0)	4	1.7% (0.7 - 4.5)	1	0.4% (0.1 - 3.1)
Erongo	All	525	13	2.5% (1.5 - 4.0)	13	2.5% (1.5 - 4.0)	0	0.0% (0.0 - 0.0)
	Boys	261	6	2.3% (1.1 - 4.9)	6	2.3% (1.1 - 4.9)	0	0.0% (0.0 - 0.0)
	Girls	264	7	2.7% (1.3 - 5.4)	7	2.7% (1.3 - 5.4)	0	0.0% (0.0 - 0.0)
Hardap	All	369	29	7.9% (5.3 - 11.6)	29	7.6% (5.0 - 11.3)	1	0.3% (0.0 - 2.0)
	Boys	197	17	8.6% (5.5 - 13.2)	16	8.1% (5.1 - 12.7)	1	0.5% (0.1 - 3.6)
	Girls	172	12	7.0% (3.7 - 12.7)	12	7.0% (3.7 - 12.7)	0	0.0% (0.0 - 0.0)
Kavango East	All	480	21	4.4% (3.0 - 6.3)	21	4.4% (3.0 - 6.3)	0	0.0% (0.0 - 0.0)
	Boys	219	13	5.9% (3.4 - 10.1)	13	5.9% (3.4 - 10.1)	0	0.0% (0.0 - 0.0)
	Girls	261	8	3.1% (1.6 - 5.7)	8	3.1% (1.6 - 5.7)	0	0.0% (0.0 - 0.0)
Kavango West	All	427	14	3.3% (1.9 - 5.5)	12	2.8% (1.7 - 4.5)	2	0.5% (0.1 - 2.0)
	Boys	218	9	4.1% (2.3 - 7.4)	9	4.1% (2.3 - 7.4)	0	0.0% (0.0 - 0.0)
	Girls	209	5	2.4% (0.9 - 6.5)	3	1.4% (0.5 - 4.3)	2	1.0% (0.2 - 3.9)
Khomas	All	435	23	5.3% (3.5 - 7.9)	23	5.3% (3.5 - 7.9)	0	0.0% (0.0 - 0.0)
	Boys	221	19	8.6% (5.4 - 13.3)	19	8.6% (5.4 - 13.3)	0	0.0% (0.0 - 0.0)
	Girls	214	4	1.9% (0.7 - 4.9)	4	1.9% (0.7 - 4.9)	0	0.0% (0.0 - 0.0)
Kunene	All	440	20	4.5% (2.9 - 7.1)	19	4.3% (2.7 - 6.9)	1	0.2% (0.0 - 1.7)
	Boys	206	10	4.9% (2.4 - 9.5)	9	4.4% (2.1 - 9.0)	1	0.5% (0.1 - 3.6)
	Girls	234	10	4.3% (2.2 - 8.2)	10	4.3% (2.2 - 8.2)	0	0.0% (0.0 - 0.0)
Ohangwena	All	479	37	7.7% (5.6 - 10.5)	31	6.5% (4.6 - 9.0)	6	1.3% (0.6 - 2.7)
	Boys	205	18	8.8% (5.4 - 13.9)	16	7.8% (4.7 - 12.6)	2	1.0% (0.2 - 4.0)
	Girls	274	19	6.9% (4.4 - 10.8)	15	5.5% (3.4 - 8.7)	4	1.5% (0.6 - 3.7)
Omaheke	All	675	40	5.9% (4.3 - 8.1)	33	4.9% (3.4 - 7.0)	7	1.0% (0.5 - 2.3)
	Boys	360	25	6.9% (4.7 - 10.1)	23	6.4% (4.3 - 9.5)	2	0.6% (0.1 - 2.2)
	Girls	315	15	4.8% (3.0 - 7.5)	10	3.2% (1.7 - 5.8)	5	1.6% (0.7 - 3.7)
Omusati	All	500	41	8.2% (5.5 - 12.0)	33	6.6% (4.4 - 9.8)	8	1.6% (0.7 - 3.4)
	Boys	240	18	7.5% (4.4 - 12.4)	14	5.8% (3.2 - 10.5)	4	1.7% (0.5 - 5.5)
	Girls	260	23	8.8% (5.7 - 13.5)	19	7.3% (4.7 - 11.2)	4	1.5% (0.6 - 4.1)
Oshana	All	506	36	7.1% (5.0 - 10.0)	34	6.7% (4.6 - 9.6)	2	0.4% (0.1 - 1.6)
	Boys	238	20	8.4% (5.3 - 13.1)	19	8.0% (4.9 - 12.7)	1	0.4% (0.1 - 3.1)
	Girls	268	16	6.0% (3.6 - 9.7)	15	5.6% (3.3 - 9.3)	1	0.4% (0.0 - 2.8)
Oshikoto	All	575	68	11.8% (8.5 - 16.3)	62	10.8% (7.8 - 14.7)	6	1.0% (0.4 - 2.5)
	Boys	286	34	11.9% (7.9 - 17.6)	31	10.8% (7.3 - 15.9)	3	1.0% (0.3 - 3.2)
	Girls	289	34	11.8% (7.7 - 17.5)	31	10.7% (7.0 - 16.1)	3	1.0% (0.3 - 3.2)
Otjozondjupa	All	522	41	7.9% (5.2 - 11.7)	36	6.9% (4.7 - 10.1)	5	1.0% (0.4 - 2.6)
	Boys	255	23	9.0% (5.6 - 14.2)	20	7.8% (4.8 - 12.5)	3	1.2% (0.4 - 3.6)
	Girls	267	18	6.7% (4.3 - 10.4)	16	6.0% (3.9 - 9.2)	2	0.7% (0.1 - 4.9)
Zambezi	All	457	20	4.4% (2.9 - 6.5)	20	4.4% (2.9 - 6.5)	0	0.0% (0.0 - 0.0)
	Boys	220	7	3.2% (1.4 - 6.9)	7	3.2% (1.4 - 6.9)	0	0.0% (0.0 - 0.0)
	Girls	237	13	5.5% (3.3 - 9.1)	13	5.5% (3.3 - 9.1)	0	0.0% (0.0 - 0.0)

Table 15: Prevalence of GAM, MAM, and SAM in children 6-59 months based on MUAC, by sex



	Sex	Number	GAM		Moderate		Severe	
			n	% (95% CI)	n	% (95% CI)	n	% (95% CI)
National	All	6942	130	1.8% (1.4 – 2.2)	110	1.5% (1.2 – 1.9)	20	0.3% (0.1 – 0.4)
	Boys	3413	49	1.3% (0.9 – 1.7)	44	1.2% (0.8 – 1.5)	5	0.1% (0.1 – 0.3)
	Girls	3529	81	2.3% (1.7 – 2.9)	66	1.9% (1.4 – 1.4)	15	0.4% (0.2 – 0.6)
//Kharas	All	488	7	1.4% (0.7 - 2.9)	6	1.2% (0.6 - 2.7)	1	0.2% (0.0 - 1.5)
	Boys	256	5	2.0% (0.8 - 4.6)	5	2.0% (0.8 - 4.6)	0	0.0% (0.0 - 0.0)
	Girls	232	2	0.9% (0.2 - 3.5)	1	0.4% (0.1 - 3.1)	1	0.4% (0.1 - 3.1)
Erongo	All	535	9	1.7% (0.8 - 3.6)	8	1.5% (0.7 - 3.2)	1	0.2% (0.0 - 1.4)
	Boys	266	4	1.5% (0.5 - 4.9)	3	1.1% (0.4 - 3.4)	1	0.4% (0.1 - 2.7)
	Girls	269	5	1.9% (0.8 - 4.4)	5	1.9% (0.8 - 4.4)	0	0.0% (0.0 - 0.0)
Hardap	All	370	6	1.6% (0.7 - 3.6)	5	1.4% (0.6 - 3.2)	1	0.3% (0.0 - 2.0)
	Boys	198	3	1.5% (0.5 - 4.6)	2	1.0% (0.2 - 4.0)	1	0.5% (0.1 - 3.7)
	Girls	172	3	1.7% (0.6 - 5.3)	3	1.7% (0.6 - 5.3)	0	0.0% (0.0 - 0.0)
Kavango East	All	486	13	2.7% (1.6 - 4.5)	10	2.1% (1.2 - 3.6)	3	0.6% (0.1 - 2.7)
	Boys	221	4	1.8% (0.7 - 4.5)	4	1.8% (0.7 - 4.5)	0	0.0% (0.0 - 0.0)
	Girls	265	9	3.4% (1.7 - 6.6)	6	2.3% (1.1 - 4.7)	3	1.1% (0.2 - 5.0)
Kavango West	All	427	11	2.6% (1.4 - 4.8)	9	2.1% (1.0 - 4.4)	2	0.5% (0.1 - 2.0)
	Boys	218	5	2.3% (1.0 - 5.4)	4	1.8% (0.7 - 4.9)	1	0.5% (0.1 - 3.3)
	Girls	208	6	2.9% (1.2 - 6.9)	5	2.4% (0.9 - 6.5)	1	0.5% (0.1 - 3.7)
Khomas	All	441	1	0.2% (0.0 - 1.6)	1	0.2% (0.0 - 1.6)	0	0.0% (0.0 - 0.0)
	Boys	225	0	0.0% (0.0 - 0.0)	0	0.0% (0.0 - 0.0)	0	0.0% (0.0 - 0.0)
	Girls	216	1	0.5% (0.1 - 3.3)	1	0.5% (0.1 - 3.3)	0	0.0% (0.0 - 0.0)
Kunene	All	444	11	2.5% (1.3 - 4.6)	10	2.3% (1.2 - 4.3)	1	0.2% (0.0 - 1.6)
	Boys	208	5	2.4% (0.9 - 6.5)	5	2.4% (0.9 - 6.5)	0	0.0% (0.0 - 0.0)
	Girls	236	6	2.5% (1.1 - 5.6)	5	2.1% (0.9 - 5.1)	1	0.4% (0.1 - 3.0)
Ohangwena	All	484	7	1.4% (0.6 - 3.3)	6	1.2% (0.5 - 3.1)	1	0.2% (0.0 - 1.6)
	Boys	207	1	0.5% (0.1 - 3.5)	1	0.5% (0.1 - 3.5)	0	0.0% (0.0 - 0.0)
	Girls	277	6	2.2% (0.8 - 5.4)	5	1.8% (0.6 - 5.1)	1	0.4% (0.0 - 2.8)
Omaheke	All	676	10	1.5% (0.8 - 2.8)	8	1.2% (0.6 - 2.5)	2	0.3% (0.1 - 1.2)
	Boys	359	4	1.1% (0.4 - 2.9)	4	1.1% (0.4 - 2.9)	0	0.0% (0.0 - 0.0)
	Girls	317	6	1.9% (0.9 - 4.1)	4	1.3% (0.5 - 3.3)	2	0.6% (0.2 - 2.5)
Omusati	All	507	14	2.8% (1.4 - 5.3)	12	2.4% (1.3 - 4.4)	2	0.4% (0.1 - 1.6)
	Boys	244	5	2.0% (0.8 - 4.9)	5	2.0% (0.8 - 4.9)	0	0.0% (0.0 - 0.0)
	Girls	263	9	3.4% (1.6 - 7.3)	7	2.7% (1.3 - 5.5)	2	0.8% (0.2 - 3.0)
Oshana	All	512	13	2.5% (1.4 - 4.6)	11	2.1% (1.1 - 4.2)	2	0.4% (0.1 - 1.6)
	Boys	241	4	1.7% (0.6 - 4.4)	4	1.7% (0.6 - 4.4)	0	0.0% (0.0 - 0.0)
	Girls	271	9	3.3% (1.6 - 6.6)	7	2.6% (1.1 - 5.8)	2	0.7% (0.2 - 3.0)
Oshikoto	All	582	10	1.7% (0.8 - 3.8)	10	1.7% (0.8 - 3.8)	0	0.0% (0.0 - 0.0)
	Boys	289	1	0.3% (0.0 - 2.5)	1	0.3% (0.0 - 2.5)	0	0.0% (0.0 - 0.0)
	Girls	293	9	3.1% (1.4 - 6.4)	9	3.1% (1.4 - 6.4)	0	0.0% (0.0 - 0.0)
Otjozondjupa	All	526	8	1.5% (0.6 - 3.6)	7	1.3% (0.5 - 3.4)	1	0.2% (0.0 - 1.4)
	Boys	258	4	1.6% (0.6 - 4.0)	3	1.2% (0.4 - 3.5)	1	0.4% (0.1 - 2.8)
	Girls	268	4	1.5% (0.5 - 4.6)	4	1.5% (0.5 - 4.6)	0	0.0% (0.0 - 0.0)
Zambezi	All	464	11	2.4% (1.2 - 4.7)	7	1.5% (0.7 - 3.0)	4	0.9% (0.3 - 2.8)
	Boys	223	4	1.8% (0.5 - 5.7)	3	1.3% (0.4 - 4.0)	1	0.4% (0.1 - 3.2)
	Girls	241	7	2.9% (1.4 - 5.9)	4	1.7% (0.6 - 4.4)	3	1.2% (0.4 - 3.8)

3.3.4 Prevalence of combined GAM and SAM based on WHZ and MUAC cut off's (and/or oedema), by sex

The prevalence of combined Global Acute Malnutrition (cGAM) defined as WHZ<-2 and/or MUAC<125 mm, and/or oedema, revealed a slightly higher prevalence than the one recorded for either WHZ or MUAC. The combined prevalence is closer to the WHZ prevalence, which indicates that most of the malnourished children in Namibia can be detected using WHZ, rather than MUAC. The national estimate of cGAM was 7.4%, while for the regions, the combined prevalence ranged from 3.6% in Erongo, to 12.2% in Oshikoto (Table 16).

While some children were assessed as malnourished by both methods, there are children in the survey areas that are only malnourished by either criterion, but not both. There is therefore a need to focus on all criteria while screening and admitting children to the programme, as well as in programme planning.

3.3.5 Prevalence of underweight based on weight-for-age Z (WAZ) scores, by sex

The percentage of children who have low weight-for-age (underweight) can reflect wasting (low weight-for-height), indicating acute weight loss, stunting, or both. Thus, underweight is a composite indicator for both acute and chronic malnutrition.¹²

According to the findings, the prevalence of underweight (10%-<20%) was poor in most of the regions (9) while five regions had a serious underweight prevalence (20% - <30%). These include Hardap (27.8%), Omaheke (25.0%), Omusati (20.4%), Oshikoto (25.3%) and Otjozondjupa (20.8%).

The national estimate of underweight, which is 18.9% (17.6 – 20.1), indicates a poor underweight prevalence (Table 17).

3.3.6 Prevalence of stunting based on height-for-age Z (HAZ) scores, by sex

A child is classified as stunted when their height-for-age is more than two standard deviations below the WHO Child Growth Standards median. Stunting, which is impaired growth and development, usually occurs when children consistently experience poor nutrition and repeated infections.

The survey results show that all survey areas had high, or very high levels of stunting, based on the WHO/ UNICEF 2018 classification of stunting. Stunting levels exceeded the 30% threshold in six regions - //Karas, Oshikoto, Otjozondjupa, Omaheke, Hardap and Omusati.

At the national level, the estimate of stunting indicates a high prevalence, with the upper interval indicating very high levels of stunting (Table 18).

Table 16: Prevalence of combined GAM and SAM based on WHZ and MUAC cut off's, by sex



	Sex	Number	cGAM		cSAM	
			n	% (95% CI)	n	% (95% CI)
National	All	6929	495	7.4% (6.6 – 8.2)	74	1.1% (0.8 – 1.4)
	Boys	3404	256	7.8% (6.7 – 8.9)	30	0.9% (0.5 – 1.3)
	Girls	3525	239	6.9% (6.0 – 7.9)	44	1.3% (0.9 – 1.7)
//Kharas	All	487	21	4.3% (2.8 - 6.6)	3	0.6% (0.2 - 1.9)
	Boys	256	15	5.9% (3.6 - 9.3)	1	0.4% (0.1 - 2.8)
	Girls	231	6	2.6% (1.2 - 5.6)	2	0.9% (0.2 - 3.5)
Erongo	All	535	19	3.6% (2.2 - 5.6)	1	0.2% (0.0 - 1.4)
	Boys	266	9	3.4% (1.6 - 7.1)	1	0.4% (0.1 - 2.7)
	Girls	269	10	3.7% (2.0 - 6.7)	0	0.0% (0.0 - 0.0)
Hardap	All	390	32	8.6% (5.9 - 12.4)	2	0.5% (0.1 - 2.2)
	Boys	194	18	9.0% (5.7 - 14.1)	2	1.0% (0.2 - 4.1)
	Girls	196	14	8.1% (4.7 - 13.8)	0	0.0% (0.0 - 0.0)
Kavango East	All	486	30	6.2% (4.6 - 8.3)	3	0.6% (0.1 - 2.7)
	Boys	221	15	6.8% (4.2 - 10.8)	0	0.0% (0.0 - 0.0)
	Girls	265	15	5.7% (3.5 - 9.1)	3	1.1% (0.2 - 5.0)
Kavango West	All	428	21	4.9% (3.0 - 8.0)	3	0.7% (0.2 - 2.2)
	Boys	219	12	5.5% (3.0 - 9.9)	1	0.5% (0.1 - 3.3)
	Girls	209	9	4.3% (2.1 - 8.7)	2	1.0% (0.2 - 3.9)
Khomas	All	441	24	5.4% (3.6 - 8.1)	0	0.0% (0.0 - 0.0)
	Boys	225	19	8.4% (5.3 - 13.1)	0	0.0% (0.0 - 0.0)
	Girls	216	5	2.3% (0.8 - 6.4)	0	0.0% (0.0 - 0.0)
Kunene	All	446	28	6.3% (4.2 - 9.4)	2	0.4% (0.1 - 1.8)
	Boys	209	13	6.2% (3.3 - 11.5)	1	0.5% (0.1 - 3.5)
	Girls	237	15	6.3% (3.6 - 11.0)	1	0.4% (0.1 - 3.0)
Ohangwena	All	484	39	8.1% (5.9 - 10.9)	7	1.4% (0.7 - 2.9)
	Boys	207	18	8.7% (5.4 - 13.7)	2	1.0% (0.2 - 4.0)
	Girls	277	21	7.6% (4.8 - 11.8)	5	1.8% (0.8 - 4.2)
Omaheke	All	678	44	6.5% (4.8 - 8.7)	8	1.2% (0.6 - 2.5)
	Boys	361	26	7.2% (5.0 - 10.4)	2	0.6% (0.1 - 2.2)
	Girls	317	18	5.7% (3.8 - 8.4)	6	1.9% (0.9 - 4.1)
Omusati	All	507	45	8.9% (6.1 - 12.8)	8	1.6% (0.7 - 3.3)
	Boys	244	19	7.8% (4.7 - 12.7)	3	1.2% (0.3 - 5.3)
	Girls	263	26	9.9% (6.4 - 15.0)	5	1.9% (0.8 - 4.5)
Oshana	All	512	44	8.6% (6.3 - 11.6)	3	0.6% (0.2 - 1.8)
	Boys	241	22	9.1% (6.0 - 13.7)	1	0.4% (0.1 - 3.1)
	Girls	271	22	8.1% (5.4 - 12.1)	2	0.7% (0.2 - 3.0)
Oshikoto	All	582	71	12.2% (8.8 - 16.7)	6	1.0% (0.4 - 2.5)
	Boys	289	34	11.8% (7.8 - 17.4)	3	1.0% (0.3 - 3.1)
	Girls	293	37	12.6% (8.5 - 18.3)	3	1.0% (0.3 - 3.1)
Otjozondjupa	All	528	43	8.1% (5.2 - 12.5)	5	0.9% (0.4 - 2.5)
	Boys	259	24	9.3% (5.7 - 14.9)	3	1.2% (0.4 - 3.5)
	Girls	269	19	7.1% (4.4 - 11.3)	2	0.7% (0.1 - 4.9)
Zambezi	All	484	39	8.1% (5.9 - 10.9)	7	1.4% (0.7 - 2.9)
	Boys	207	18	8.7% (5.4 - 13.7)	2	1.0% (0.2 - 4.0)
	Girls	277	21	7.6% (4.8 - 11.8)	5	1.8% (0.8 - 4.2)

Table 17: Prevalence of global, moderate and severe underweight in children 6-59 months based on WAZ scores, by sex



	Sex	Number	Global underweight		Moderate underweight		Severe underweight	
			n	% (95% CI)	n	% (95% CI)	n	% (95% CI)
National	All	6949	1341	18.9% (17.6 – 20.1)	1020	14.5% (13.5 – 15.5)	321	4.4% (3.7 – 5.0)
	Boys	3418	712	20.0% (18.3 – 21.7)	545	15.5% (14.1 – 17.0)	167	4.5% (3.7 – 5.2)
	Girls	3531	629	17.8% (16.3 – 19.3)	475	13.5% (12.3 – 14.8)	154	4.2% (3.4 – 5.1)
//Kharas	All	483	89	18.4% (13.7 – 24.3)	74	15.3% (11.1 – 20.7)	15	3.1% (1.7 – 5.6)
	Boys	252	57	22.6% (16.6 – 30.1)	47	18.7% (13.2 – 25.7)	10	4.0% (1.9 – 8.2)
	Girls	231	32	13.9% (9.1 – 20.5)	27	11.7% (7.4 – 18.0)	5	2.2% (0.9 – 4.9)
Erongo	All	521	61	11.7% (8.9 – 15.2)	53	10.2% (7.7 – 13.3)	8	1.5% (0.8 – 3.0)
	Boys	255	30	11.8% (8.1 – 16.9)	28	11.0% (7.6 – 15.6)	2	0.8% (0.2 – 3.1)
	Girls	266	31	11.7% (8.4 – 15.9)	25	9.4% (6.5 – 13.4)	6	2.3% (1.0 – 4.9)
Hardap	All	367	102	27.8% (22.7 – 33.6)	71	19.3% (14.9 – 24.7)	31	8.4% (5.7 – 12.4)
	Boys	197	59	29.9% (23.4 – 37.4)	41	20.8% (14.8 – 28.4)	18	9.1% (5.9 – 14.0)
	Girls	170	43	25.3% (19.1 – 32.7)	30	17.6% (12.1 – 25.0)	13	7.6% (4.5 – 12.8)
Kavango East	All	480	71	14.8% (12.2 – 17.8)	56	11.7% (9.4 – 14.4)	15	3.1% (1.7 – 5.5)
	Boys	219	33	15.1% (11.8 – 19.0)	26	11.9% (8.9 – 15.6)	7	3.2% (1.3 – 7.5)
	Girls	261	38	14.6% (10.8 – 19.3)	30	11.5% (8.4 – 15.6)	8	3.1% (1.4 – 6.4)
Kavango West	All	426	64	15.0% (11.8 – 18.9)	50	11.7% (8.8 – 15.6)	14	3.3% (2.1 – 5.2)
	Boys	218	40	18.3% (12.6 – 26.0)	29	13.3% (8.3 – 20.6)	11	5.0% (2.9 – 8.7)
	Girls	208	24	11.5% (8.6 – 15.3)	21	10.1% (7.3 – 13.8)	3	1.4% (0.5 – 4.4)
Khomas	All	432	75	17.4% (13.0 – 2.8)	63	14.6% (10.9 – 19.3)	12	2.8% (1.3 – 5.9)
	Boys	219	42	19.2% (12.8 – 7.7)	35	16.0% (10.7 – 23.2)	7	3.2% (1.4 – 7.0)
	Girls	213	33	15.5% (11.2 – 21.1)	28	13.1% (9.1 – 18.6)	5	2.3% (0.8 – 6.4)
Kunene	All	441	75	17.0% (13.6 – 21.0)	59	13.4% (10.6 – 16.8)	16	3.6% (2.1 – 6.3)
	Boys	207	39	18.8% (14.1 – 24.8)	31	15.0% (10.8 – 20.3)	8	3.9% (2.0 – 7.5)
	Girls	234	36	15.4% (11.3 – 20.6)	28	12.0% (8.5 – 16.5)	8	3.4% (1.5 – 7.6)
Ohangwena	All	480	95	19.8% (16.4 – 23.7)	80	16.7% (13.6 – 20.3)	15	3.1% (2.1 – 4.7)
	Boys	204	38	18.6% (13.0 – 26.0)	34	16.7% (11.8 – 22.9)	4	2.0% (0.7 – 5.0)
	Girls	276	57	20.7% (16.7 – 25.3)	46	16.7% (12.9 – 21.2)	11	4.0% (2.4 – 6.6)
Omaheke	All	669	167	25.0% (20.6 – 29.9)	123	18.4% (15.0 – 22.4)	44	6.6% (4.9 – 8.7)
	Boys	355	93	26.2% (20.2 – 33.2)	70	19.7% (14.8 – 25.7)	23	6.5% (4.4 – 9.5)
	Girls	314	74	23.6% (19.1 – 28.6)	53	16.9% (13.4 – 21.0)	21	6.7% (4.4 – 9.9)
Omusati	All	504	103	20.4% (16.4 – 25.1)	81	16.1% (12.8 – 19.9)	22	4.4% (2.5 – 7.5)
	Boys	242	49	20.2% (15.0 – 26.7)	41	16.9% (12.5 – 22.6)	8	3.3% (1.5 – 7.0)
	Girls	262	54	20.6% (15.6 – 26.8)	40	15.3% (11.4 – 20.1)	14	5.3% (2.8 – 10.0)
Oshana	All	507	100	19.7% (16.0 – 24.1)	85	16.8% (13.4 – 20.8)	15	3.0% (1.8 – 4.7)
	Boys	237	56	23.6% (18.9 – 29.2)	48	20.3% (15.8 – 25.6)	8	3.4% (1.8 – 6.3)
	Girls	270	44	16.3% (12.0 – 21.8)	37	13.7% (10.0 – 18.5)	7	2.6% (1.3 – 5.2)
Oshikoto	All	578	146	25.3% (20.4 – 30.8)	108	18.7% (15.0 – 23.0)	38	6.6% (4.7 – 9.2)
	Boys	287	74	25.8% (20.1 – 32.4)	57	19.9% (15.2 – 25.6)	17	5.9% (3.7 – 9.5)
	Girls	291	72	24.7% (18.8 – 31.8)	51	17.5% (12.7 – 23.7)	21	7.2% (4.4 – 11.7)
Otjozondjupa	All	520	108	20.8% (15.9 – 26.6)	77	14.8% (11.4 – 19.0)	31	6.0% (3.6 – 9.8)
	Boys	253	56	22.1% (16.8 – 28.6)	40	15.8% (11.5 – 21.3)	16	6.3% (3.7 – 10.6)
	Girls	267	52	19.5% (13.9 – 26.6)	37	13.9% (9.9 – 19.1)	15	5.6% (2.9 – 10.6)
Zambezi	All	457	51	11.2% (8.4 – 14.7)	40	8.8% (6.5 – 11.8)	11	2.4% (1.4 – 4.1)
	Boys	219	23	10.5% (7.2 – 15.0)	19	8.7% (6.1 – 12.3)	4	1.8% (0.7 – 4.8)
	Girls	238	28	11.8% (7.6 – 17.7)	21	8.8% (5.4 – 14.0)	7	2.9% (1.4 – 6.0)

Table 18: Prevalence of global, moderate and severe stunting in children 6-59 months based on HAZ Scores by sex



	Sex	Number	Global stunting		Moderate stunting		Severe stunting	
			n	% (95% CI)	n	% (95% CI)	n	% (95% CI)
National	All	6933	2100	29.5% (28.0 – 30.9)	1463	21.2% (20.0 – 22.4)	637	8.3% (7.5 – 9.1)
	Boys	3410	1149	32.5% (30.5 – 34.4)	781	22.8% (21.1 – 24.5)	368	9.6% (8.5 – 10.7)
	Girls	3523	951	26.7% (24.8 – 28.5)	682	19.6% (18.1 – 21.1)	269	7.1% (6.0 – 8.1)
//Kharas	All	471	160	34.0% (28.5 - 39.9)	100	21.2% (16.9 - 26.4)	60	12.7% (9.6 - 16.7)
	Boys	244	91	37.3% (30.7 - 44.4)	54	22.1% (16.7 - 28.8)	37	15.2% (10.6 - 21.3)
	Girls	227	69	30.4% (23.5 - 38.2)	46	20.3% (14.7 - 27.3)	23	10.1% (6.9 - 14.6)
Erongo	All	512	137	26.8% (22.5 - 31.5)	110	21.5% (17.8 - 25.6)	27	5.3% (3.3 - 8.3)
	Boys	250	72	28.8% (23.2 - 35.1)	60	24.0% (19.0 - 29.8)	12	4.8% (2.7 - 8.5)
	Girls	262	65	24.8% (19.4 - 31.1)	50	19.1% (14.5 - 24.7)	15	5.7% (3.3 - 9.8)
Hardap	All	367	156	42.5% (35.9 - 49.4)	96	26.2% (21.4 - 31.5)	60	16.3% (12.8 - 20.6)
	Boys	198	86	43.4% (35.1 - 52.1)	49	24.7% (19.3 - 31.1)	37	18.7% (13.6 - 25.0)
	Girls	169	70	41.4% (33.2 - 50.1)	47	27.8% (20.9 - 36.0)	23	13.6% (9.4 - 19.3)
Kavango East	All	472	137	29.0% (24.2 - 34.4)	99	21.0% (17.2 - 25.3)	38	8.1% (5.4 - 11.8)
	Boys	211	64	30.3% (24.9 - 36.4)	44	20.9% (16.5 - 26.1)	20	9.5% (6.3 - 14.0)
	Girls	261	73	28.0% (21.3 - 35.8)	55	21.1% (15.8 - 27.5)	18	6.9% (3.7 - 12.6)
Kavango West	All	419	99	23.6% (19.6 - 28.2)	68	16.2% (12.9 - 20.2)	31	7.4% (5.1 - 10.6)
	Boys	212	63	29.7% (24.2 - 35.8)	45	21.2% (16.7 - 26.5)	18	8.5% (5.5 - 13.0)
	Girls	207	36	17.4% (13.2 - 22.5)	23	11.1% (7.5 - 16.2)	13	6.3% (3.6 - 10.9)
Khomas	All	425	122	28.7% (23.5 - 34.6)	91	21.4% (17.1 - 26.4)	31	7.3% (4.8 - 10.9)
	Boys	219	71	32.4% (25.5 - 40.2)	53	24.2% (18.6 - 30.8)	18	8.2% (4.9 - 13.5)
	Girls	206	51	24.8% (18.1 - 32.8)	38	18.4% (12.9 - 25.7)	13	6.3% (3.5 - 11.0)
Kunene	All	428	119	27.8% (23.6 - 32.4)	86	20.1% (16.5 - 24.2)	33	7.7% (5.3 - 11.1)
	Boys	200	70	35.0% (29.0 - 41.5)	46	23.0% (17.5 - 29.6)	24	12.0% (8.1 - 17.3)
	Girls	228	49	21.5% (16.2 - 28.0)	40	17.5% (12.9 - 23.4)	9	3.9% (2.0 - 7.7)
Ohangwena	All	476	123	25.8% (21.3 - 31.0)	102	21.4% (17.1 - 26.5)	21	4.4% (2.9 - 6.7)
	Boys	200	49	24.5% (17.4 - 33.4)	40	20.0% (13.5 - 28.5)	9	4.5% (2.3 - 8.7)
	Girls	276	74	26.8% (21.9 - 32.4)	62	22.5% (17.8 - 27.9)	12	4.3% (2.5 - 7.3)
Omaheke	All	647	235	36.3% (31.0 - 42.0)	158	24.4% (20.3 - 29.1)	77	11.9% (9.0 - 15.6)
	Boys	344	138	40.1% (33.4 - 47.2)	95	27.6% (22.2 - 33.8)	43	12.5% (8.7 - 17.7)
	Girls	303	97	32.0% (25.5 - 39.3)	63	20.8% (15.9 - 26.7)	34	11.2% (7.6 - 16.2)
Omusati	All	499	161	32.3% (26.9 - 38.1)	124	24.8% (20.4 - 29.9)	37	7.4% (4.9 - 11.0)
	Boys	239	83	34.7% (27.1 - 43.3)	65	27.2% (20.2 - 35.6)	18	7.5% (4.6 - 12.1)
	Girls	260	78	30.0% (24.4 - 36.2)	59	22.7% (18.1 - 28.1)	19	7.3% (4.0 - 12.9)
Oshana	All	504	113	22.4% (17.9 - 27.7)	79	15.7% (12.1 - 20.1)	34	6.7% (4.9 - 9.2)
	Boys	235	63	26.8% (20.8 - 33.8)	46	19.6% (14.2 - 26.4)	17	7.2% (4.4 - 11.6)
	Girls	269	50	18.6% (13.4 - 25.2)	33	12.3% (8.4 - 17.6)	17	6.3% (3.9 - 10.1)
Oshikoto	All	566	175	30.9% (26.8 - 35.3)	133	23.5% (20.0 - 27.4)	42	7.4% (5.5 - 10.0)
	Boys	278	96	34.5% (28.6 - 41.0)	72	25.9% (21.1 - 31.4)	24	8.6% (6.0 - 12.3)
	Girls	288	79	27.4% (22.3 - 33.2)	61	21.2% (16.4 - 26.9)	18	6.3% (4.0 - 9.7)
Otjozondjupa	All	515	176	34.2% (28.2 - 40.7)	123	23.9% (20.1 - 28.2)	53	10.3% (6.9 - 15.0)
	Boys	252	94	37.3% (30.9 - 44.2)	64	25.4% (20.2 - 31.4)	30	11.9% (8.2 - 17.1)
	Girls	263	82	31.2% (23.6 - 39.9)	59	22.4% (17.4 - 28.5)	23	8.7% (4.8 - 15.3)
Zambezi	All	456	107	23.5% (19.3 - 28.2)	92	20.2% (16.4 - 24.6)	15	3.3% (2.0 - 5.4)
	Boys	220	54	24.5% (18.9 - 31.2)	46	20.9% (15.8 - 27.2)	8	3.6% (1.8 - 7.3)
	Girls	236	53	22.5% (16.9 - 29.2)	46	19.5% (14.6 - 25.5)	7	3.0% (1.5 - 6.0)

3.4 Death rates and demographic results

The assessment of mortality was done retrospectively, with the recall period being approximately 90 days for the regions, as recommended by the SMART methodology. The exact number of days differed for each region, with each using separate recall events, and data collection being done on separate dates. Generally, crude death rates across the survey areas were below the WHO emergency threshold of 1/10,000/day, and below the alert levels of 0.5/10,000/day (Table 19).

The demographic part of the mortality survey informed on key parameters such as average household size, proportion of children under five years in the survey sample, in-migration and out-migration (Table 20).

Table 19: Crude and U5 death rates, by region

	Crude mortality rate (total deaths /10,000 people / day)		U5 mortality rates (deaths in children U5 / 10,000 children U5/ day)		Mid-interval population	Number of HHs
	Rate [CI]	Design Effect	Rate [CI]	Design Effect		
//Kharas	0.24 (0.11-0.50)	1.15	0.22 (0.04-1.25)	1	3597.5	1009
Erongo	0.03 (0.00-0.16)	1	0.00 (0.00-4.68)	1	3419.5	1045
Hardap	0.28 (0.11-0.74)	1.75	0.28 (0.05-1.61)	1	2643	764
Kavango East	0.19 (0.08-0.45)	1	0.00 (0.00-10.52)	1	2512	429
Kavango West	0.25 (0.12-0.51)	1	0.00 (0.00-11.60)	1	2353	399
Khomas	0.17 (0.08-0.35)	1	0.00 (0.00-4.86)	1	3740.5	864
Kunene	0.53 (0.30-0.92)	1	0.45 (0.07-2.67)	2.03	2455.5	594
Ohangwena	0.22 (0.11-0.47)	1	0.21 (0.03-1.26)	1	2873	540
Omaheke	0.27 (0.15-0.47)	1	0.26 (0.07-0.98)	1	3524	858
Omusati	0.35 (0.15-0.81)	1.83	0.21 (0.03-1.23)	1.02	3056	665
Oshana	0.21 (0.10-0.42)	1	0.00 (0.00-6.61)	1	3639.5	805
Oshikoto	0.28 (0.13-0.59)	1.31	0.00 (0.00-6.78)	1	3330	744
Otjozondjupa	0.29 (0.09-0.93)	2.64	0.40 (0.1-1.51)	1.01	2591	740
Zambezi	0.17 (0.06-0.50)	1	0.23 (0.04-1.36)	1	1871	627

Table 20: Demographic profile of the population in the survey areas, by region

	Population parameters			
	Average HH Size	U5 Prop (%)	In - migration	Out - migration
//Kharas	3.61	15.15	9.47	3.74
Erongo	3.28	17.46	3.39	3.92
Hardap	3.49	15.81	7.24	9.44
Kavango East	5.90	20.98	2.63	6.22
Kavango West	5.90	20.85	3.83	13.28
Khomas	4.32	14.33	4.96	6.04
Kunene	4.13	21.05	3.71	14.17
Ohangwena	5.46	18.62	2.54	14.32
Omaheke	4.11	21.31	4.18	4.31
Omusati	4.60	18.75	6.08	12.83
Oshana	4.6	16.4	3.72	19.02
Oshikoto	4.52	20.27	10.18	24.18
Otjozondjupa	3.57	22.84	8.34	16.31
Zambezi	3.05	26.51	12.47	1.67

3.5 Other survey results

3.5.1 Water, sanitation, and hygiene (WASH)

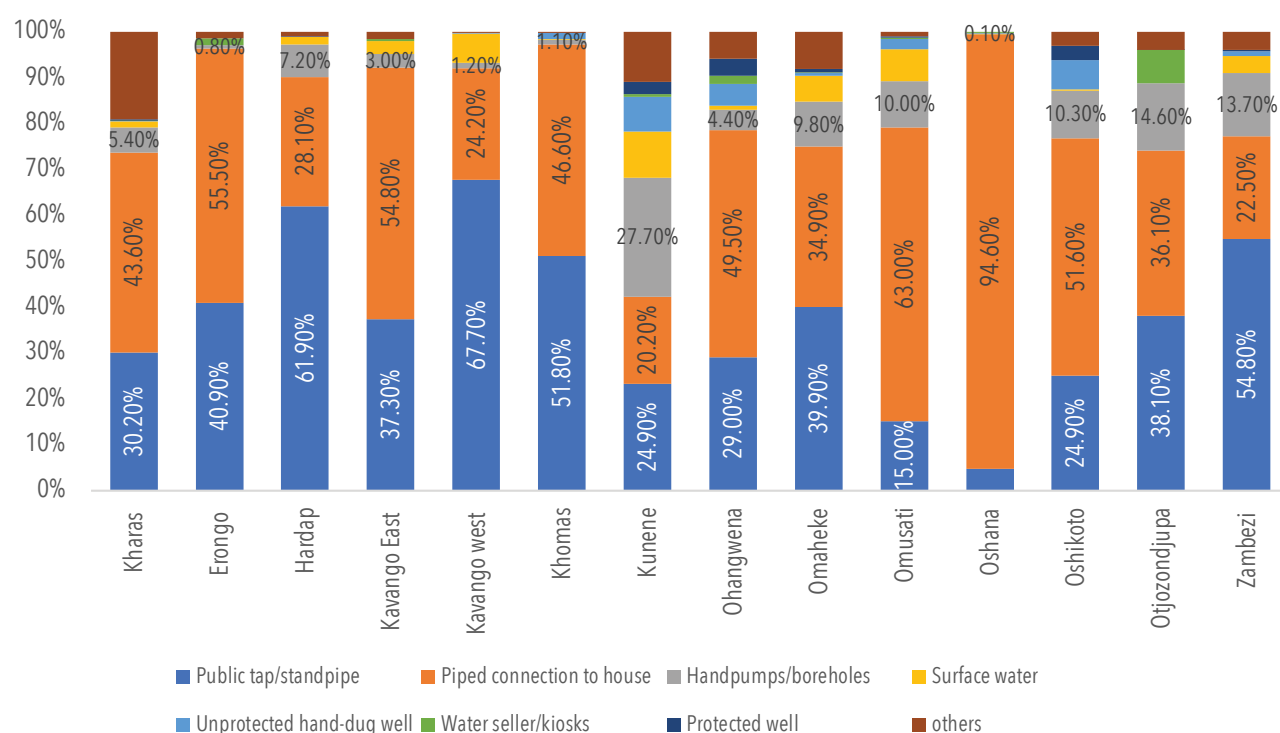
The development of water supply, sanitation and hygiene (WASH) is a vital component of humanitarian programmes. Over the last decade, several scoping and systematic studies have concluded that interventions in humanitarian crises involving WASH can bring substantial health and social benefits to affected vulnerable communities.^{13,14} The survey assessed some key WASH indicators, including access to drinking and cooking water, access to sanitation facilities, and handwashing device and agent.

3.5.1.1 Water access

Safe and promptly accessible water is significant for general wellbeing. Improved water supply and sanitation, and better administration of water assets, improves financial development, and contribute greatly to poverty reduction. Sustainable Development Goal (SDG) Target 6.1 calls for universal and equitable access to safe and affordable drinking water. (WHO, October 2019 Bulletin).

The reported main sources of water for drinking and cooking are public taps, and piped connections to households. These two water sources combined are the main water source for more than two thirds of HHs in the regions, except for Kunene, where less than half of the HHs receive water from these two sources. The most reported water source in Kunene was handpumps/boreholes, with about a quarter of HHs (27.7%) obtaining water from this source (Figure 2).

Figure 2: Main sources of water for drinking and cooking, by region



The survey assessed that most HHs used water from safe or protected sources, ranging from 77.3% in Kunene to 99.7% in Oshana. In all the regions except //Kharas and Kunene, more than 90% of the HHs surveyed had accessed water from safe or protected sources.

The survey also assessed the proportion of HHs that used domestic water collected from protected/treated sources, using protected containers only, and in adequate quantities. This serves as an indication of the proportion of the population having access to adequate quantities of safe water. About half of the HHs had access to adequate safe water, except in //Kharas and Kunene where 48.6%, and 41.4% respectively had access to adequate potable water (Table 21).

Table 21: Access to safe and sufficient water quantity, nationally and by region



	Access to safe/improved water for drinking and cooking		Access to sufficient quantity of water	
	Protected/treated water sources	Unprotected/untreated water sources	Proportion of households that use domestic water collected from protected/treated sources with protected containers only	
			≥ 15 lpppd	< 15 lpppd
National	93.9% (92.8-95.0)	6.1% (5.0-7.2)	56.1% (54.5-57.6)	43.9% (42.4-45.5)
//Kharas	79.8%	20.1%	48.6%	51.4%
Erongo	98.9%	1.1%	50.4%	49.6%
Hardap	97.5%	2.5%	61.2%	38.8%
Kavango East	96.7%	3.3%	59.1%	40.9%
Kavango West	93.1%	6.9%	61.8%	38.2%
Khomas	99.8%	0.2%	52.8%	47.2%
Kunene	77.3%	22.7%	41.4%	58.6%
Ohangwena	90.8%	9.2%	60.3%	39.7%
Omaheke	90.2%	9.6%	53.4%	46.6%
Omusati	90.3%	9.7%	56.8%	43.2%
Oshana	99.7%	0.3%	63.4%	36.6%
Oshikoto	90.5%	9.2%	50.9%	49.1%
Otjozondjupa	96.1%	3.9%	54.9%	45.1%
Zambezi	93.0%	7.0%	63.3%	36.7%

3.5.1.2 Access to a specific handwashing station

Handwashing with soap is the most effective way for preventing life threatening diarrhoeal diseases.¹⁵ Having a specific handwashing station at home helps in promoting positive handwashing practices. Handwashing with soap and water helps prevent the spread of infectious diseases that are spread from one person to another by contaminated hands.

The proportion of HHs with a specific handwashing station varied across the regions with Khomas and Hardap recording 57.8% and 53.5% respectively. In all other regions, the proportions were below 50%, with some regions such as Kavango West (11.6%), Kunene (11.4%) and Zambezi (5.5%) having extremely low proportions. This translates to only small proportions of HHs likely to be practicing handwashing during critical moments. Further observations showed about two thirds of HHs having water and soap at the handwashing stations, with Ohangwena being the outlier region in this regard, at 20.7% (Table 22).

Table 22: Access to handwashing device, nationally and by region



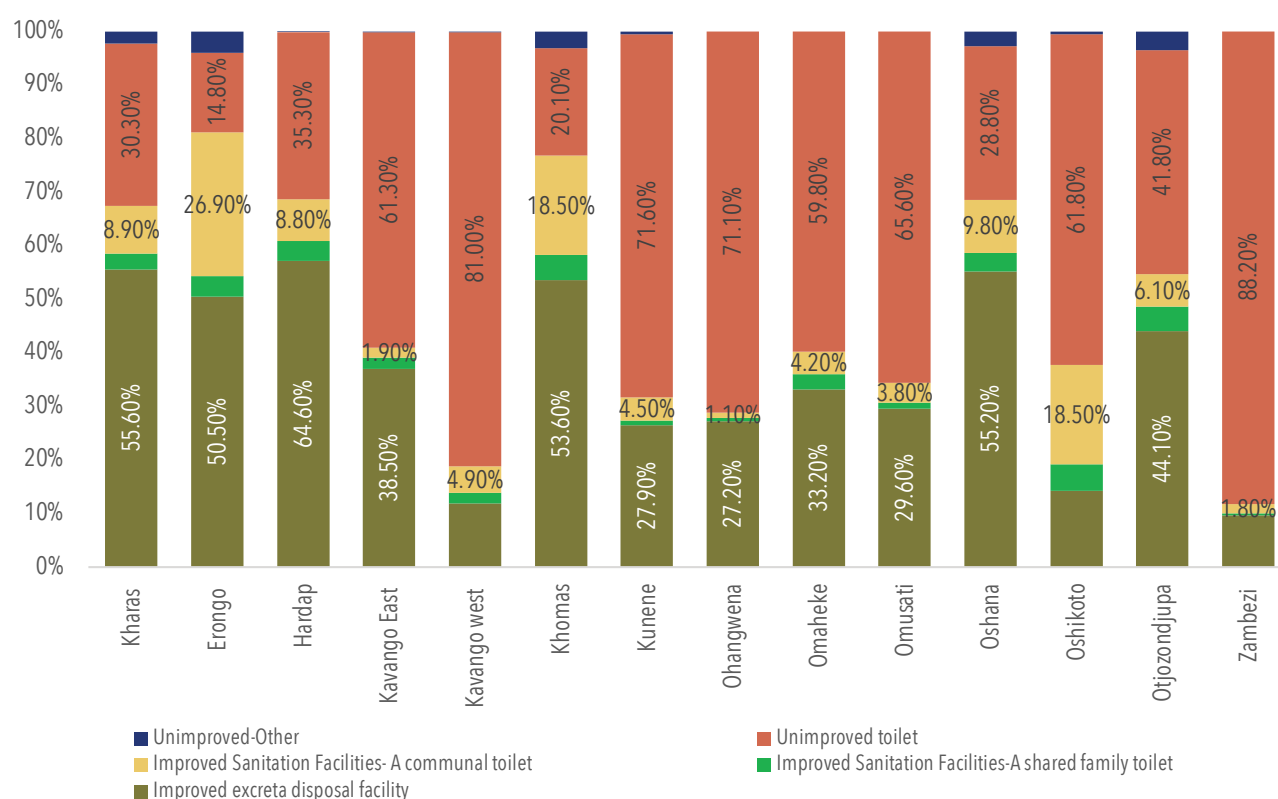
	Type of handwashing device						Water and soap availability at handwashing station		
	Number of respondents	HH with a specific handwashing device	Sink with tap water	Buckets with taps	Pouring device	Other	Water availability for handwashing	Soap availability for handwashing	Soap and water availability
National	10,028	32.6% (30.1-35.1)	64.7% (60.4-69.0)	12.7% (9.8-15.6)	7.9% (6.0-9.8)	14.7% (11.5-18.0)	86.8% (83.9-89.7)	72.9% (69.7-76.2)	71.1% (67.7-74.5)
//Kharas	1007	48.8%	80.2%	14.3%	2.2%	3.3%	97.6%	87.2%	86.4%
Erongo	1045	49.3%	83.9%	12.2%	0.6%	3.3%	99.4%	93.8%	93.4%
Hardap	763	53.5%	54.6%	22.2%	0.2%	23.0%	87.2%	65.3%	64.5%
Kavango East	429	25.4%	37.6%	15.6%	8.3%	38.5%	99.1%	66.1%	66.1%
Kavango West	405	11.6%	42.6%	19.1%	38.3%	0.0%	85.1%	48.9%	48.9%
Khomas	875	57.8%	75.5%	16.6%	6.7%	1.2%	95.1%	78.4%	77.0%
Kunene	594	11.4%	66.2%	7.4%	20.6%	5.9%	85.5%	79.7%	75.4%
Ohangwena	540	24.9%	19.4%	3.0%	4.5%	73.1%	25.9%	20.7%	20.7%
Omaheke	134	15.5%	82.1%	6.7%	9.0%	2.2%	97.8%	52.6%	52.6%
Omusati	663	15.4%	39.2%	11.8%	42.2%	6.9%	70.6%	634.0%	60.4%
Oshana	792	38.3%	36.6%	8.9%	11.6%	24.6%	70.6%	77.2%	65.7%
Oshikoto	736	19.2%	43.3%	8.5%	22.0%	26.2%	93.7%	82.4%	81.0%
Otjozondjupa	740	30.5%	86.7%	16.6%	3.5%	2.2%	86.7%	5580.0%	55.3%
Zambezi	626	5.5%	80.3%	2.8%	0.3%	11.1%	97.2%	77.8%	77.8%

3.5.1.3 Access to sanitation facilities

Sanitation is defined as access to, and use of, facilities and services for the safe disposal of human urine and faeces. Safe practice entails preventing human contact with human excreta at all steps of the sanitation service chain, from toilet capture and containment through emptying, transport, treatment (in-situ or off-site) and final disposal or end use.¹⁶

The results show mixed findings with more than half the HHs in //Kharas (55.6%), Erongo (50.5%), Hardap (64.6%), Khomas (53.6%) and Oshana (55.2%) having access to improved sanitation facilities. Use of unimproved sanitation facilities was common in the other regions, with the highest in Kavango West and Zambezi, at 81.0% and 88.2% respectively (Figure 3).

Figure 3: Access to improved sanitation facilities



3.5.2 Vitamin A supplementation and deworming

3.5.2.1 Deworming

Deworming of children routinely helps to combat soil-transmitted helminths that worsen child nutritional status through intestinal bleeding, loss of appetite, and malabsorption of micronutrients. Periodic treatment (deworming) of children, supported with improvement of water and sanitation, and health education can reduce the transmission of *Schistosoma*, and soil-transmitted helminth infections.¹⁷ According to the Namibian deworming guidelines, all children aged 12-59 months should be dewormed every six months. The assessment of deworming was therefore done retrospectively, by checking the child health passport, and asking caregivers of all children aged 12-59 months whether their children had received deworming tablets in the six months prior to the survey date. In most of the regions, the

proportion of dewormed children was lower than the WHO recommendation of 80%, except for Erongo (90.2%), Omaheke (83.9%) and Omusati (81.6%). The national deworming prevalence was estimated at 74.8%.

3.5.2.2 Vitamin A coverage

Vitamin A supplementation (VAS) boosts a child's immunity while reducing child morbidity and mortality in the long term. Low VAS coverage is associated with a high prevalence of childhood illnesses VAS is therefore critical, not only for eliminating vitamin A deficiency as a public-health problem, but also as a central element for child survival.

VAS was assessed among children 6-59 months by checking records in the child health passport, over the past 6 months. Where passports were not available, primary caregivers were probed on whether their children had been supplemented, with the visual aid of a vitamin A sample to help them recall. The coverage of VAS among children 6-59 months was above the WHO-recommended threshold of 80% in five regions, including //Kharas (83.0%), Erongo (87.5%), Ohangwena (89.6%) Omusati (80.3%), and Oshana (81.4%). Whereas the other regions were closer to the target, Kavango West (65.5%) and Kunene region (46.8%) underperformed. Kunene region is likely to have been limited by geographical challenges due to the long distances required to access to health services. At national level, 78.8% of children had been supplemented with Vitamin A, with 9.6% only able to recall the supplementation, with no recorded documentation available. As shown in Table 23, there were notable proportions of children 6-59 months whose supplementation status was only confirmed by recall, due to the absence of health passports.

Table 23: Coverage of Vitamin A, deworming and measles, nationally and by region

	Children 6-59 months who received vitamin A last 6 months				Children 12-59 months who received deworming last 6 months		
	Yes, card	Yes, recall	No or don't know	N	Yes	No	N
 National	69.1% (67.1 – 71.1)	9.6% (8.6 – 10.6)	21.2% (19.4 – 23.0)	6949	74.8% (72.6 – 77.0)	25.2% (23.0 – 27.4)	5720
//Kharas	73.2% (66.6-78.9)	9.8% (6.5-14.4)	17.1% (12.6-22.8)	416	77.4% (70.5- 83.1)	22.6% (16.9-29.5)	448
Erongo	83.2% (78.7-87.0)	4.3% (2.6-7.0%)	12.5% (9.2 -16.7%)	537	90.2% (85.8- 93.3)	9.8% (6.7- 14.2)	438
Hardap	68.9% (62.2-74.9)	8.8% (5.4-14.2)	22.3% (16.5-29.3)	373	79.0% (72.2-84.5)	21.0% (15.5-27.8)	310
Kavango East	66.7% (55.7 - 76.1)	6.40% (4.0 - 10.1)	27.0% (17.9 - 38.5)	486	44.9% (31.7- 58.9)	55.1% (41.1–68.3)	414
Kavango West	59.0% (49.0-68.2)	6.5% (4.0-10.4)	34.5% (25.7- 44.5)	429	60.3% (47.4-71.8)	39.7% (28.2-52.6)	317
Khomas	64.7% (57.5-71.3)	10.9% (8.3-14.3)	24.4% (18.7-31.2)	467	76.1% (69.6-81.6)	23.9% (18.4-30.4)	360
Kunene	37.0% (29.6-45.0)	9.8% (6.2-15.0)	53.2% (44.9-61.4)	449	50.8% (40.7-60.9)	49.2% (39.1-59.3)	309
Ohangwena	82.4% (76.6-87.1)	7.2% (4.6-11.2)	10.3% (6.7%-15.6%)	484	16.8% (10.9-25.0%)	83.2% (7.0%-89.1)	417
Omaheke	66.9% (61.0-72.3)	13.0% (9.7- 17.1)	20.2% (15.5-25.9)	679	83.9% (78.4- 88.2)	16.1% (11.8-21.6)	522
Omusati	75.2% (69.4-80.3)	5.1% (3.0-8.6)	19.6% (15.3-24.9)	509	81.5% (75.4-86.3)	18.5% (13.7-24.6)	426
Oshana	71.4% (65.6-76.7)	10.0% (7.1-13.9)	18.6% (13.6-24.9)	511	76.8% (70.0-82.4)	23.2% (17.6-30.0)	435
Oshikoto	68.4% (63.2-73.1)	11.0% (8.3- 14.5)	20.6% (16.6 – 25.3)	582	72.3% (66.5-77.4)	27.7% (22.6–33.5)	512
Otjozondjupa	59.7% (52.2 - 66.9)	15.1% (10.1–22.0)	25.1% (10.1 -22.0)	529	68.7% (60.0-76.3)	31.3% (23.7-40.0)	428
Zambezi	68.8% (58.9 – 77.3)	5.6% (3.6 – 8.7)	25.6% (18.0 – 35.1)	465	64.0% (53.9–73.0)	36.0% (27.0–46.1)	378

3.5.2.3 BCG, OPV and Measles immunisation

Immunisation is the most cost-effective single preventive health intervention (WHO, 2015). Expanding access to immunisation is crucial to achieving 14 of the 17 SDGs, and is one of the most far-reaching health interventions, closely reflecting the ethos of the SDGs: “leaving no one behind”.¹⁸

The survey assessed the coverage of Bacillus Calmette–Guérin vaccine (BCG), oral polio vaccines (OPV1 and 3), and the coverage of measles vaccination for both the first and the second doses. The findings for BCG show that all regions were above the 90% WHO target except for Kunene region. The assessment of OPV 1 for children 6-59 months, which is also a measure of access to immunisation services, showed Kunene performing poorly, with only 59% having the immunisation confirmed by card, and another 12.7% having the OPV1 vaccination confirmed by recall. Coverage of OPV 3 was similar to that of OPV1, with Kunene still showing worryingly low figures. Notably, the proportion of survey respondents that could only confirm their OPV vaccination by recall, ranged from 4.3% in Omusati for OPVA, and 4.1% in //Kharas and 36.2% in Kunene for OPV 2 (Table 24).

The assessment of measles vaccination was based on the immunisation schedule for Namibia, which prescribes that all children should be vaccinated with the first dose of measles at 9 months, and a follow up dose as from 15 months. Coverage for the first measles dose was above 80% for all regions (both by card and by recall), except for Kunene which cumulatively had only 61.7% coverage. Coverage for measles 2 was slightly lower than measles 1, with Kunene again showing notably low proportions. The national weighted estimate showed measles coverage above 80% for the first dose (both by card and by recall), while coverage of the second dose was just below the 80% mark (Table 25).

Table 24: BCG and OPV vaccination, nationally and by region

	Children 0-59 months who received BCG			Children 6-59 months who received OPV1			Children 6-59 months who received OPV3		
	Yes scar	No Scar	N	Yes, card	Yes, recall	No or don't know	Yes, card	Yes, recall	No or don't know
 National	92.3% (91.3 – 93.2)	4.3% (3.6 – 5.0)	6999	82.6% (81.2 – 83.9)	9.2% (8.2 – 10.2)	8.2% (7.2 – 9.2)	81.0% (79.5 – 82.4)	8.9% (7.9 – 10.0)	10.1% (9.0 – 11.2)
//Kharas	94.1% (91.9-95.9)	5.9% (4.1-8.1)	529	87.6% (84.4-90.3)	9.8% (7.4-12.6)	2.6% (1.5 – 4.4)	86.6% (83.4-89.4)	9.3% (7.0-12.2)	4.1% (2.6-6.1)
Erongo	96.4% (94.6 – 97.6)	0.5% (0.1-1.6)	585	88.1% (85.0-90.6)	4.5% (3.0-6.6)	7.5% (5.5-10.0)	87.4% (84.1-90.2)	5.0% (3.3-7.4)	7.6% (5.5-10.4)
Hardap	93.3% (90.6-95.3)	6.7% (4.7-9.4)	443	82.3% (78.1-85.9)	8.9% (6.4-12.2)	8.8% (6.4-12.2)	80.7% (76.3-84.4)	8.6% (6.1-11.9)	10.7% (8.0-14.3)
Kavango East	95.8% (94.0 – 97.5)	4.20% (2.7 – 6.0)	567	84.8% (81.5 – 88.3)	9.1% (6.4 – 11.7)	6.2% (3.9 – 8.4)	83.5% (80.1 – 86.9)	9.3% (6.5 – 11.9)	7.2% (4.8 – 9.6)
Kavango West	84.1% (80.8-86.9)	11.4% (9.0-14.3)	553	82.3% (78.4-85.6)	5.6% (3.8-8.2)	12.1% (9.4-15.6)	81.1% (77.1-84.5)	5.6% (3.8-8.2)	13.3% (10.4-16.9)
Khomas	87.3% (84.5-89.7)	5.6% (4.3-8.0)	615	78.8% (74.8-82.2)	11.4% (8.8-14.6)	9.87% (7.5-12.9)	76.7% (72.6-80.3)	10.3% (7.8-13.4)	13.1% (10.3-16.4)
Kunene	79.8% (76.3-83.4)	14.5% (11.3-17.6)	492	59.0% (54.4-63.5)	12.7% (9.9-16.0%)	28.3% (24.3-32.6)	52.4% (47.8-57.0)	11.3% (8.7-14.5%)	36.2% (31.9-40.7)
Ohangwena	93.3% (91.3-95.2)	6.7% (4.8-8.7)	608	88.5% (85.9-91)	7.1% (5.1-9.2)	4.4% (2.8-6)	88.9% (86.4-91.4)	6.7% (4.7-8.7)	4.4% (2.8-8)
Omaheke	90.3% (88.1-92.4)	9.7% (7.5-11.8)	846	79.2% (76.2-82.4)	13.8% (11.1-16.3)	6.9% (5.0-8.9)	78.6% (75.5-81.8)	13.4% (10.7-16.1)	8.0% (5.8-10.0)
Omusati	92.6% (90.4-94.4)	4.2% (2.8-5.9)	648	90.0% (87.1-92.4)	4.3% (2.8-6.4)	5.7% (3.5-8.9)	89.0% (86.1-91.5)	4.5% (3.0-6.6)	6.5% (4.0-10.1)
Oshana	96.2% (94.5 – 97.4)	2.6% (1.6 – 4.1)	664	87.7% (84.5 – 90.3)	10.4% (8.0 – 13.3)	2.0% (1.1 – 3.6)	86.9% (83.7 – 89.6)	10.4% (8.0 – 13.3)	2.7% (1.6 – 4.6)
Oshikoto	95.8% (94.2-97.4)	4.2% (2.6-5.8)	621	84.7% (81.8-87.6)	10.1% (7.7-12.6)	5.2% (3.4-7.0)	83.3% (80.3 – 86.4)	9.8% (7.4 – 12.2)	6.9% (4.8-8.9)
Otjozondjupa	89.3% (86.8-91.7)	10.7% (8.3-13.2)	644	73.2% (69.7-76.7)	15.9% (13-18.8)	10.8% (8.4-13.3)	69.8% (66.2-73.5)	15.7% (12.9-18.6)	14.4% (11.6-17.2)
Zambezi	92.2% (89.7-94.2)	5.4% (3.8-7.7)	552	81.7% (77.9-85.0)	8.0% (5.8-10.8)	10.3% (7.9-13.4)	78.7% (74.7-82.2)	8.0% (5.8-10.8)	13.3% (10.5-16.7)

Table 25: Measles vaccination, nationally and by region



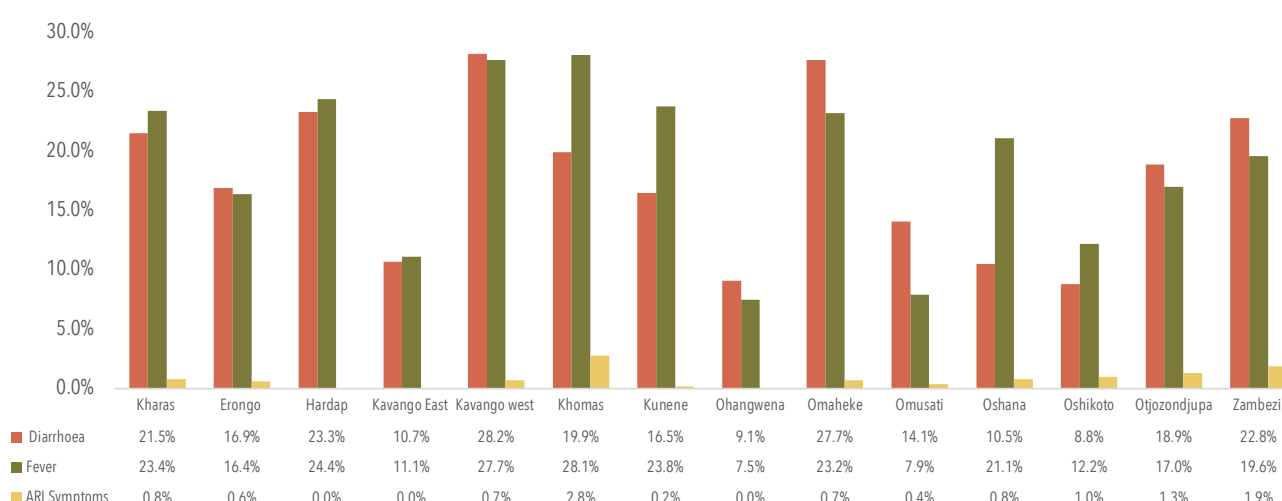
	Children 9-59 months who received measles vaccine				Children 15-59 months who received measles vaccine dose 2			
	Yes, card	Yes, recall	No or don't know	N	Yes, card	Yes, recall	No or don't know	N
National	79.5% (78.0 – 81.0)	8.9% (7.8 – 9.9)	11.6% (10.4 – 12.8)	6686	72.6% (70.9 – 74.4)	9.0% (7.9-10.0)	18.4% (16.9 – 19.9)	5998
//Karas	84.3% (79.2-88.4)	10.6% (7.3-15.1)	5.1% (3.4-7.5)	472	72.9% (68.7-76.7)	11.2% (8.6-14.3)	15.9% (12.8-19.4)	472
Erongo	86.1% (81.8-89.6)	3.9% (2.4-6.3)	10.0% (7.0-14.0)	512	80.2% (76.3-83.6)	3.7% (2.3-5.9)	16.1% (13.0-19.8)	459
Hardap	78.3% (72.1-83.5)	8.1% (5.0-12.6)	13.6% (9.6-18.9)	311	79.0% (70.0-83.2)	9.1% (6.3-12.8)	12.0% (8.8-16.1)	309
Kavango East	82% (77.9 - 85.5)	8.8% (6.0 - 12.7)	8.6% (6.0 - 12.2)	466	72.9% (68.5-77.3)	9.7% (6.8-12.6)	17.4% (13.7-21.2)	431
Kavango West	79.1% (73.2-83.9)	6.1% (3.4 -10.6)	14.8% (10.8-20.1)	411	66.9% (62.0-71.5)	5.6% (3.7-8.4)	27.5% (23.2-32.2)	375
Khomas	73.9% (67.9- 79.2)	11.1% (8.2-15.0)	15.0% (11.0-20.1)	441	65.8% (61.0-70.2)	10.7% (8.0-14.0)	23.6% (19.7-27.9)	403
Kunene	51.0% (42.4-59.7)	10.7% (6.9-16.3)	32.8% (30.0-47.2)	429	38.9% (34.4-43.6)	8.6% (6.2-11.6)	52.4% (47.7-57.1)	429
Ohangwena	87.9% (83.1-91.5)	6.7% (4.3-10.2)	5.4% (3.3-8.8)	464	86.1% (83.3-88.8)	8% (5.8 - 11.1)	5.9% (4.1 - 7.8)	388
Omaheke	77.1% (72.3-81.2)	13.3% (9.7-18.1)	9.6% (7.2-12.8)	645	68.4% (64.7-71.9)	11.8% (9.1-14.4)	19.8% (16.8-22.9)	645
Omusati	87.7% (78.8-93.2)	3.3% (1.2-8.7)	9.3% (4.4-17.6)	490	81.8% (78.2-85.1)	4.3% (2.8-6.4)	13.9% (9.9-18.9)	490
Oshana	84.9% (80.4-88.5)	10.2% (7.1-14.4)	4.9% (2.9-8.2)	490	84.4% (80.7 -87.6)	11.2% (8.5-14.5)	4.4% (2.8 - 6.8)	430
Oshikoto	82% (77.9 - 85.5)	10.3% (7.7 - 13.5)	7.7% (5.3 - 11.3)	556	75% (71.2-78.7)	10.8% (8.1-13.5)	14.3% (11.1-17.0)	511
Otjozondjupa	67.1% (60.4-73.2)	14.8% (9.6-22.0)	18.1% (13.2-24.3)	508	58.6% (54.7-62.5)	14.1% (11.4-16.9)	27.3% (23.8-30.8)	502
Zambezi	77.8% (69.6 – 84.3)	7.0% (4.6 – 10.6)	15.2% (9.4 – 23.4)	442	77.3% (73.3-81.2)	6.9% (4.8-9.8)	15.8% (12.5-19.7)	406

3.5.3 Children's morbidity and caregivers' health-seeking behaviour

Malnutrition makes a person more susceptible to infection, and on the other hand, infection contributes to malnutrition, which causes a vicious cycle of malnutrition and infections. A sick person's nutrition is further aggravated by diarrhoea, malabsorption, loss of appetite, diversion of nutrients for the immune response, and urinary nitrogen loss, all of which can lead to nutrient losses, and further damage to defence mechanisms.¹⁹ These, in turn, cause reduced dietary intake. It was therefore important to assess morbidity in the survey, and determine its possible effect on malnutrition.

Morbidity among all children aged 6-59 months was assessed, based on caregiver recall on whether the child had suffered any of the three specific morbidities (diarrhoea, fever, and acute respiratory infection (ARI)), in the two weeks prior to the survey. The assessment of diarrhoea showed a prevalence ranging from 8.8% in Oshikoto to 28.2% Kavango West. Almost similar proportions were noted for children with fever, ranging from 7.5% in Ohangwena to 28.1% in Khomas. Very small prevalences were observed for children with ARI symptoms across all regions, not exceeding 1.9% in Zambezi. The national estimates indicate that 16.3% (15.1 – 17.4) had diarrhoea, 17.3% (15.9 – 18.6) had fever, and only a small proportion of children 0.9% (0.6 – 1.2) had ARI symptoms (Figure 4).

Figure 4: Child morbidities



The survey also sought to understand the treatment-seeking practices of caregivers when their children were sick. The assessment was based on the three morbidities, to determine if the type of morbidity determined the treatment-seeking patterns. For children that were reported to have suffered from diarrhoea, the caregiver was questioned on the management of the diarrhoeal episode with both zinc and oral rehydration solution (ORS). Treatment-seeking was generally low for all morbidities across all regions, as follows: diarrhoea - less than 50% across all the regions; fever – from 21.5% in //Kharas to 83.3% in Kavango East, with most of the regions reporting about half of all children seeking treatment. Management of diarrhoea cases ranged from 34% in Oshana to 60.4% in //Kharas, while those managed with zinc only ranged from 16.5% in Omaheke to 36.5% in Kavango East. Management with both ORS and zinc was very low, ranging from 13.6% in Ohangwena to 34.6% in Kavango East (Table 26).

Table 26: Health-seeking behaviour by caregivers with sick children, nationally and by region

	Diarrhea				Fever		ARI Symptoms	
	Treatment		ORS given	Zinc Supplement	Both ORS and Zinc		Treatment	
	Yes		Yes	Yes	Yes	N	Yes	N
National	42.6% (39.2 – 46.0)		51.9% (48.2 – 55.5)	27.4% (24.2 – 30.6)	22.2% (19.2 – 25.3)	1238	56.3% (52.9 – 59.8)	1298
//Karas	37.7% (27.8-48.8)		60.40% (50.7 -69.3)	18.9% (10.9-30.8)	16.0% (9.2-26.4)	106	21.5% (17.6-26.1)	23.4% (18.5-29.2)
Erongo	33.0% (23.9-43.4)		52.7% (42.3-62.9)	24.2% (16.3-34.2)	25.3% (17.3-35.4)	91	56.8% (46.1-66.9)	33.3% (8.1-73.8)
Hardap	35.6% (24.4-48.6)		49.4% (39.4-59.5)	27.6% (18.3-39.3)	26.4% (17.4-39.7)	87	45.1% (35.1-55.5)	NA
Kavango East	50.0% (33.9 - 66.1)		59.6% (42.8 - 74.5)	36.5% (20.6 - 56.1)	34.6% (18.7 - 55.0)	52	83.3% (72.3 - 90.5)	N/A
Kavango West	49.6% (39.5-59.7)		50.4% (39.4-61.4)	31.4% (23.8-40.2)	23.1% (15.8-32.6)	121	58.0% (46.3-68.8)	66.7% (0.9-99.8)
Khomas	40.9% (30.3-52.4)		52.7% (40.8-64.3)	22.6% (14.4-33.6)	19.4% (11.6-30.4)	93	60.3% (51.1-68.8)	69.2% (41.0-87.9)
Kunene	39.2% (27.6-52.1)		37.8% (26.7-50.4)	27.0% (17.1-39.9)	23.0% (13.6-36.1)	74	57.0% (46.6-66.8)	100.0%
Ohangwena	52.3% (32.7-67)		36.4% (19.8-56.9)	20.5% (10.0-37.2)	13.6% (5.3-30.7)	23	58.3% (38.6-75.7)	N/A
Omaheke	38.3% (29.4- 48.0)		50.0% 40.5-59.5)	16.5% (10.7-24.6)	15.4% (9.8-23.4)	188	52.2% (43.0-61.3)	80.0% (8.5-99.4)
Omusati	49.3% (37.4-61.3)		49.3% (37.4%-61.3)	35.2% (23.6-48.9)	19.7% (10.7-33.4)	72	55.0% (41.2 -68.1)	0.00%
Oshana	42.6% (29.7-56.5)		63.0% (48.4- 75.5)	44.4% (31.7 – 58.0)	37.0% (25.6-50.2)	54	45.4% (34.0-57.2)	50%
Oshikoto	33.3% (20.7- 48.9)		49.0% (33.9-64.3)	35.3% (23.0-49.9)	27.5% (16.1-42.8)	51	49.3% (37.0-61.7)	50.0% (13.4-86.6)
Otjozondjupa	40% (30.5-50.3)		60% (45.3-73.1)	25% (17.3-34.7)	20% (12.7-30.0)	100	52.2% (39.6-64.6)	42.9% (10.2-83.2)
Zambezi	46.2% (35.9-56.8)		51.9% (41.3-62.3)	28.3% (18.5-40.8)	24.5% (15.6-36.4)	49	52.7% (37.4-67.5)	77.8% (31.1 – 96.5)



3.5.4 Infant and young child feeding (IYCF) practices

IYCF practices directly affect the health, development and nutritional status of children less than two years of age and, ultimately, impacts on child survival. Improving IYCF practices in children 0–23 months of age is therefore critical to improved nutrition, health and development. Adequate nutrition during infancy and early childhood is essential to ensure the growth, health, and development of children to their full potential. Poor nutrition increases the risk of illness, and is directly, or indirectly, responsible for deaths in children less than 5 years of age.²⁰

Inappropriate nutrition can also lead to childhood obesity, which is an increasing public health problem in many countries. The first two years of life provide a critical window of opportunity for ensuring children's appropriate growth, and development through optimal feeding. Based on evidence of the effectiveness of interventions, achievement of universal coverage of optimal breastfeeding could prevent 13% of deaths occurring in children less than 5 years of age globally, while appropriate complementary feeding practices would result in an additional 6% reduction in under-five mortality.²¹

The 2024 SMART surveys sought to understand the IYCF indicators in the regions, based on the WHO/UNICEF 2021 set of indicators. These were however analysed as proxies, as the sample for children 0-23 months was based on children within HHs selected for the anthropometry survey, hence it was a challenge to get adequate samples for precise estimates.

Table 27: Breastfeeding practices among infant and young children 0-23 months survey area, nationally and by region



	Ever breastfed	Early initiation of breastfeeding	Exclusively breastfed for the first 2 days after birth	Exclusive breastfeeding under 6 months	Mixed milk feeding under 6 months	Continued breastfeeding 12-23 months	Bottle feeding 0-23 months
National	87.7% (85.9-89.5)	63.6% (60.7-66.5)	75.6% (73.3-77.8)	49.0% (44.2-53.8)	20.7% (16.6-24.9)	36.0% (33.1-39.0)	34.1% (31.7-36.4)
//Karas	86.7% (79.2-91.8)	68.4% (57.7-77.4)	66.8% (58.9-73.9)	50.0% (33.9-66.1)	28.9% (16.7-45.2)	36.2% (26.8-46.8)	31.6% (24.0-40.3)
Erongo	92.8% (88.3-95.6)	53.8% (42.9-64.5)	76.5% (68.7-82.8%)	53.4% (38.5-67.1)	24.5% (14.6-38.1)	39.1% (28.6-50.8)	39.8% (32.7-47.4)
Hardap	88.2% (81.2-92.8)	54.9% (41.2-67.9)	75.2% (67.5-81.5)	59.1% (34.7-79.7)	9.1% (2.0-32.6)	45.2% (34.0-56.9)	35.3% (27.2-44.3)
Kavango East	83.5% (71.9-91.0)	76.2% (65.1-84.6)	63.4% (48.3-76.3)	52.0% (26.3-76.7)	24.0% (7.4-55.4)	38.6% (26.7-52.0)	33.5% (26.0-42.0)
Kavango West	93.0% (86.0-96.7)	86.1% (77.0-91.9)	77.2% (68.9-83.9)	54.4% (37.5-69.7)	5.4% (0.7-31.6)	54.4% (42.7-65.8)	38.0% (28.6-48.4)
Khomas	90.2% (85.2-93.7)	52.2% (44.0-60.3)	76.4% (70.2-81.1)	25.0% (13.2-42.2%)	55.6% (34.4-74.9)	45.5% (36.8-54.5)	44.9% (37.1-52.9)
Kunene	83.0% (72.0-90.2)	52.4% (37.6-66.8)	70.4% (60.1-78.9)	58.5% (39.3-75.4)	19.5% (8.7-38.3)	27.50% (19.2-37.6)	37.0% (28.2-46.8)
Ohangwena	80.8% (69.9-88.4)	77.3% (66.5-85.4)	72.7% (62.4-81.0)	68% (40.5-86.9)	8.0% (2.1-26.5)	33% (23.4-44.2)	19.2% (12.3-28.6)
Omaheke	89.7% (83.8-93.6)	73.7% (65.5-80.5)	84.0% (77.3-88.9)	58.5% (39.8-75.0)	11.3% (5.4-22.3)	34.2% (26.8-42.5)	43.9% (35.5-52.6)
Omusati	94.9% (90.9-97.2)	69.5% (57.3-79.5)	85.9% (80.0-90.2)	61.1% (42.6-76.9)	5.6% (1.3-21.2)	26.8% (17.9-38.2)	29.9% (21.4-40.2)
Oshana	81.4% (73.8-87.2)	68.2% (58.8-76.4)	68.2% (59.0-76.3)	53.1% (38.7-66.9)	26.5% (14.9-42.8)	26.6% (18.5-36.6)	46.9% (39.7-54.3)
Oshikoto	89.6% (83.9-93.4)	41.3% (31.6-51.8)	78.7% (69.1-85.9)	51.3% (35.2-67.1)	7.7% (2.3-22.9)	23.2% (17.4-30.2)	27.0% (20.6-34.5)
Ojozondjupa	83.7% (75.2-89.7)	55.0% (45.3-64.4)	78.5% (69.7-85.3)	48.6% (33.3-64.1)	11.4% (4.1-28.0)	41.4% (30.8-52.9)	34.0% (26.3-42.6)
Zambezi	90.7% (83.8-94.8)	86.3% (77.9-91.9)	80.1% (73.5-85.4)	87.5% (68.4-95.8)	0.0% (0.0-0.0)	35.1% (25.9-45.5)	11.8% (7.2-18.7)

3.5.4.1 Breastfeeding practices

Even though the proportion of children ever breastfed was above 80% for all regions, it is notable that proportions ranging from 7% in Kavango West to 19.2% in Ohangwena did not initiate breastfeeding at all. The survey did not assess the reasons for not initiating breastfeeding, and it is critical that further assessment is undertaken soon, to determine why infants were denied the opportunity to ever breastfeed. Timely initiation of breastfeeding within the first hour of birth varied greatly by survey, but was lower than the recommended target of $\geq 80\%$ in all regions, except Kavango West (86.1%) and Zambezi (86.3%). Further, the proportion of children exclusively breastfed within the first 2 days of birth was below 80% in all the survey areas except Omusati, Omaheke and Zambezi at 85.9%, 84.0% and 80.1% respectively. Exclusive breastfeeding (EBF) rates within the first six months after birth were much lower across all the regions. Zambezi (80.1%) was the only region that appeared to have a significant proportion of children being exclusively breastfed at the time of the survey, while Khomas had only 25% of children exclusively breastfed. EBF in the other regions ranged from 50% in //Karas to 61.1% in Omusati.

Notable proportions of children under 6 months practiced mixed feeding, except in Zambezi where the rate was 0%. Khomas had the highest rate of mixed feeding at 55.6%. Most of the population assessed in Khomas was urban based, predominantly in informal settlements.

Continued breastfeeding among children 12-23 months across the regions was well below the recommended $\geq 80\%$ target. Bottle feeding of children 0-23 months was most practiced in Oshana and Khomas, at 46.9% and 44.9% respectively, with notable proportions also observed in other regions (Table 27).

Table 28: Complementary feeding practices among children 6-23 months by survey area



	Introduction of solid, semi-solid or soft foods	Minimum dietary diversity	Minimum meal frequency children 6-23 months	Minimum milk feeding frequency for non-breastfed children 6-23	Minimum acceptable diet	Egg and or flesh food consumption	Sweet beverage consumption	Unhealthy food consumption	Zero vegetable or fruit consumption
National	78.5%	63.6% (60.7-66.5)	75.6% (73.3-77.8)	49.0% (44.2-53.8)	20.7% (16.6-24.9)	36.0% (33.1-39.0)	34.1% (31.7-36.4)	25.5% (23.0-28.1)	53.7% (50.5-56.8)
//Kharas	60.0% (34.9-80.8)	24.1% (16.8-33.1)	43.0% (34.5-52.0)	51.3% (38.4-64.0)	16.5% (10.7-24.4)	43.7% (33.9-54.0)	41.1% (31.8-51.1)	31.0% (23.2-40.1)	51.9% (43.0-60.7)
Erongo	83.3% (59.3-94.5)	26.7% (19.8-35.0)	36.6% (28.4-45.7)	54.8% (43.8-65.4)	14.5% (9.6-21.5)	65.1% (56.6-72.8)	59.3% (52.0-66.2)	55.8% (46.8-64.5)	50.6% (41.4-59.7)
Hardap	92.3% (58.9-99.0)	22.1% (14.6-32.2)	39.7% (29.1-51.4)	45.3% (30.3-61.3)	13.0% (7.2-22.3)	68.7% (59.0-77.0)	71.8% (62.0-79.8)	49.6% (39.1-60.2)	59.5% (48.3-69.9)
Kavango East	90.0% (52.5-98.7)	20.9% (11.1-35.8)	38.8% (25.6-54.0)	29.9% (16.3-48.3)	15.8% (7.6-30.2)	41.0% (28.5-54.8)	33.1% (19.9-49.7)	5.8% (2.7-12.0)	56.1% (38.8-72.0)
Kavango West	61.1% (39.7-79.0)	8.3% (4.1-15.9)	22.3% (15.2-31.5)	13.0% (5.4-28.1)	2.5% (0.8-7.7)	25.6% (18.0-35.2)	14.0% (8.3-22.8)	9.9% (5.3-17.9)	61.2% (47.4-73.3)
Khomas	80.0% (57.3-92.3)	24.9% (16.2-36.2)	48.5% (39.9-57.3)	50.7% (37.6-63.6)	12.4% (6.7-21.9)	48.5% (38.5-58.7)	51.5% (40.8-62.0)	38.5% (30.1-47.5)	54.4% (44.6-64.0)
Kunene	70.0% (42.2-88.2)	9.5% (4.5-19.0)	43.2% (33.4-53.6)	29.5% (21.4-39.3)	4.7% (1.9-11.2)	37.2% (27.4-48.1)	11.5% (6.4-19.8)	9.5% (6.4-19.8)	82.4% (72.4-89.4)
Ohangwena	80% (58.3-92.0)	14.3% (6.6-28.2)	25.9% (18.9-34.3)	7.9% (3.3-17.7)	4.8% (1.9-11.4)	38.8% (28.9-49.7)	17% (9.8-28.0)	8.8% (3.2-22.1)	52.4% (39.8-64.7)
Omaheke	73.5% (55.8-86.0)	7.7% (4.3-13.3)	30.6% (22.5-40.2)	28.6% (19.6-39.6)	2.4% (0.8-6.7)	34.0% (26.7-42.1)	32.1% (23.9-41.4)	11.0% (6.7-17.6)	85.6% (79.8-90.0)
Omusati	73.7% (45.9-90.2)	12.8% (7.1-21.9)	32.6% (22.3-44.9)	20.8% (12.8-31.9)	5.7% (2.2-13.9)	43.3% (33.6-53.5)	28.4% (19.9-38.7)	12.8% (7.0-22.1)	74.5% (65.2-81.9)
Oshana	81.8% (57.8-93.7)	29.0% (22.0-37.1)	50.6% (41.0-60.2)	33.7% (23.6-45.5)	16.0% (10.6-23.6)	65.4% (55.4-74.2)	40.7% (31.9-50.2)	33.3% (23.9-44.3)	43.2% (33.7-53.2)
Oshikoto	73.1% (54.4-86.1)	5.2% (2.7-10.1)	47.6% (38.1-57.4)	14.0% (8.4-22.6)	4.2% (1.9-8.9)	41.4% (32.1-51.3)	19.9% (13.0-29.3)	3.7% (1.6-8.3)	52.4% (42.4-62.1)
Otjozondjupa	90% (65.7-97.7)	11.5% (6.6-19.3)	29.9% (22.1-39.0)	30.1% (21.5-40.5)	3.4% (1.3-8.6)	35.1% (26.7-44.5)	35.6% (27.2-45.1)	23.0% (15.5-32.7)	74.7% (65.5-82.1)
Zambezi	73.9% (49.9-89.0)	2.9% (0.9-9.4)	24.1% (16.8-33.3)	15.3% (8.6-25.7)	1.5% (0.4-5.7)	19.7% (12.8-29.0)	13.9% (7.5-24.2)	4.4% (2.0-9.1)	64.2% (53.2-73.9)

3.5.4.2 Complementary feeding practices

At the age of 6 months, children should be introduced to solid, semi-solid or soft foods to complement their mother's breastmilk. The assessment of the introduction to complementary foods for children aged 6-8 months showed mixed findings, with only six out of the 14 regions having achieved 80% or more of the children being introduced to the recommended foods. The proportion was lowest in //Kharas and Kavango West, at 60.0% and 61.1% respectively. Across all survey areas, the dietary diversity for children 6-23 months was generally low, with 5.2% in Oshikoto, and not exceeding 29% in Oshana. The minimum meal frequency for children 6-23 months was also unacceptably low, not exceeding 50.6% in Oshana, with the minimum milk feeding frequency for non-breastfed children being as low as 14% in Oshikoto, and not exceeding 54.8% in Erongo. It is important to note that there was a notable proportion of children in the survey who were never breastfed. Across all regions, the minimum acceptable diet was very low, varying between 1.5% in Zambezi to 16.5% in //Kharas.

Despite communities ordinarily consuming a lot of fresh foods, the consumption among children 6-23 months was notably low, below 80% across all regions, and much lower in some regions such as Zambezi (19.7%) and Kavango West (25.6%). The consumption of vegetables or fruits was also very low (Table 28).

3.5.4.3 Child food poverty

UNICEF defines child food poverty as children's inability to access, and consume, a nutritious and diverse diet in early childhood. Child food poverty is an important indicator that reflects the diversity and adequacy of children's diets, which is essential for their growth, development, and long-term health. This indicator is measured by the number of food groups a child consumes, with severe food poverty defined as consuming two or fewer groups, moderate poverty as three to four groups, and no food poverty as five or more groups.

The analysis of child food poverty shows that more than half of the surveyed children 6-23 months had experienced food poverty, with 40.6% having severe food poverty, while 26.3% had moderate food poverty. This indicates that many children are not meeting the minimum dietary requirements for healthy growth and development. Only 33.1% of children consumed five or more food groups as recommended.

Table 29: Child food poverty, nationally and by region

	N	0-2 food groups/day (severe child food poverty)	3-4 food groups/day (moderate child food poverty)	>5 food groups/day (not experiencing child food poverty)
National	2198	40.6% (37.5-43.8)	26.3% (24.0-28.7)	33.1% (29.9-36.1)
//Kharas	196	56.1% (49.1-62.9)	24.5% (18.9-30.9)	19.4% (14.3-25.3)
Erongo	172	25.6% (19.5-32.7)	44.2% (36.9-51.7)	30.2% (23.8-37.6)
Hardap	131	27.5% (20.5-35.8)	42.7% (34.5-51.4)	29.8% (22.5-38.2)
Kavango East	164	44.5% (36.7-52.2)	42.6% (35.0-50.4)	12.8% (7.5-18.1)
Kavango West	121	62.8% (53.6-71.4)	28.9% (21.1-37.9)	8.3% (4.0-14.7)
Khomas	169	36.7% (29.4-44.4)	38.5% (31.1-46.2)	24.8% (18.5-32.0)
Kunene	148	64.9% (57.2-72.6)	25.0% (18.0-32.0)	10.1% (5.3-15.05)
Ohangwena	100	37% (33.2-40.8)	43% (39.1-46.9)	20% (16.8-23.2)
Omaheke	209	58.8% (52.0-65.4)	22.5% (17.3-28.7)	18.7% (13.9-24.6)
Omusati	176	67.0% (59.9-73.7)	23.3% (17.5-29.9)	9.7% (6.0-14.7)
Oshana	162	24.7% (18.6-32.0)	32.7% (25.9-40.4)	42.6% (35.2-50.4)
Oshikoto	228	65.8% (59.5-72.0)	32.0% (26.1-38.3)	2.2% (0.3-4.2)
Otjozondjupa	174	52.9% (48.9-56.8)	35.6% (31.8-39.4)	11.5% (9-14)
Zambezi	137	70.8% (62.6-77.9)	17.5% (12.0-24.9)	11.7% (7.2-18.3)

3.5.5 Nutritional status of women of reproductive age

3.5.5.1 Physiological status and age

Understanding the physiological status of women of reproductive age (WRA) is crucial for effective maternal and child health programming, as nutritional needs change significantly during pregnancy and lactation. Of the WRA assessed, 76.1% were neither pregnant nor lactating, while 7.5% were pregnant and 38.1% lactating with an infant less than 6 months, while 61.9% were lactating with an infant older than 6 months (Table 30).

Table 30: Physiological status for WRA (15-49 years), nationally and by region

	N	Physiological status of WRA			
		Non-pregnant, non-lactating	Pregnant	Lactating with an infant less than 6 months	Lactating with an infant greater than 6 months
National	9,855	76.1% (75.0 – 77.3)	7.5% (6.9-8.2)	38.1% (35.3-41.0)	61.9% (59.0-64.7)
//Kharas	964	82.1% (79.1 - 84.7)	3.3% (2.3 - 4.6)	38.8% (31.0 - 47.4)	61.2% (52.6 - 69.0)
Erongo	1,131	84.5% (81.8 - 86.9)	3.9% (2.8 - 5.4)	40.5% (32.1- 49.4)	59.5% (50.6 - 67.9)
Hardap	616	78.7% (74.1 - 82.6)	6.8% (4.9 - 9.4)	34.1% (23.2 - 47.0)	65.9% (53.0 - 76.8)
Kavango East	614	76.8% (71.9 - 81.2)	7.7% (6.0 - 9.8)	42.7% (33.0 - 53.0)	57.3% (47.0 - 67.0)
Kavango West	486	68.6% (63.6- 73.1)	8.4% (6.1 -11.3)	37.3% (26.6- 49.3)	62.7% (50.7- 73.4)
Khomas	1136	83.0% (80.2 - 85.5)	5.0% (3.9- 6.5)	29.5% (20.9 -39.8)	70.5% (60.2- 79.1)
Kunene	526	71.1% (65.5 - 76.2)	9.4% (6.9-12.7)	45.6% (34.9, 56.8)	54.4% (43.2 - 65.1)
Ohangwena	478	73.2% (68.0 - 77.8)	5.1% (3.4 - 7.4)	36.9% (27.3 - 47.6)	63.1% (52.4 - 72.7)
Omaheke	808	73.9% (69.9 - 77.5)	6.4% (4.9 - 8.2)	37.9% (31.0 - 45.3)	62.1% (54.7 - 69.0)
Omusati	551	75.0% (70.3 - 79.3)	6.9% (4.8 - 10.0)	40.0% (31.3 - 49.3)	60.0% (50.7 - 68.7)
Oshana	863	82.4% (79.1 - 85.2)	4.2% (3.0 - 5.9)	49.1% (37.0 - 61.3)	50.9% (38.7 - 63.0)
Oshikoto	612	78.2% (74.2 - 81.8)	4.9% (3.3 - 7.4)	40.2% (31.7 - 49.3)	59.8% (50.7 - 68.3)
Otjozondjupa	632	73.9% (69.1 - 78.1)	6.6% (4.7 - 9.2)	30.1% (22.2 - 39.4)	69.9% (60.6 - 77.8)
Zambezi	505	70.3% (66.0- 74.3)	9.6% (7.3 - 12.4)	39.8% (31.4 - 48.9)	60.2% (51.1 - 68.6)

Table 31: Skilled attendant at delivery

	Number of women with a live birth under five years	Skilled Provider			Other provider or no assistance				
		Doctor	Nurse/midwife	Auxiliary midwife	Community health worker	Traditional birth attendant	Relative/friend	Other	No one
 National	6257	63.6% (60.7-66.5)	75.6% (73.3-77.8)	49.0% (44.2-53.8)	20.7% (16.6-24.9)	36.0% (33.1-39.0)	34.1% (31.7-36.4)	25.5% (23.0-28.1)	53.7% (50.5-56.8)
//Kharas	622	10.0% (6.9 - 14.2)	74.9% (69.7 - 79.5)	1.1% (0.4 - 3.1)	0.2% (0.0 - 1.1)	1.8% (0.9 - 3.4)	1.6% (0.9 - 2.9)	10.1% (6.1 - 16.4)	0.3% (0.1 - 1.3)
Erongo	714	11.2% (8.4 - 14.9)	78.9% (74.6 - 82.5)	0.0%	0.1% (0.0 - 1.0)	0.7% (0.3 - 1.7)	0.4% (0.1 - 1.3)	8.7% (5.6 - 13.3)	0.0%
Hardap	428	13.3% (9.2 - 18.9)	77.1% (70.9 - 82.3)	0.0%	0.2% (0.0 - 1.7)	1.4% (0.5 - 3.9)	2.1% (1.0 - 4.5)	5.6% (3.0 - 10.3)	0.2% (0.0 - 1.8)
Kavango East	438	9.6% (6.7 - 13.6)	71.5% (64.6 - 77.4)	0.2% (0.0 - 1.7)	0.0%	0.5% (0.1 - 3.5)	1.8% (0.7 - 4.5)	16.2% (10.5 - 24.1)	0.2% (0.0 - 1.7)
Kavango West	378	8.7% (5.7 - 13.2)	80.2% (74.5 - 84.8)	0.3% (0.0 - 2.0)	0.0%	2.1% (1.0 - 4.3)	6.9% (3.8 - 12.2)	0.3% (0.0 - 2.0)	1.6% (0.4 - 6.4)
Khomas	539	23.7% (18.2 - 30.4)	71.8% (64.5 - 78.1)	0.4% (0.1 - 1.5)	0.0%	0.2% (0.0 - 1.3)	2.0% (1.2 - 3.5)	1.3% (0.3 - 5.4)	0.6% (0.2 - 1.7)
Kunene	324	5.2% (2.7 - 9.9)	74.4% (65.0 - 81.9)	0.0%	0.0%	2.2% (0.9 - 5.2)	15.4% 9.7 - 23.6)	1.9% (0.5 - 7.1)	0.9% (0.3 - 2.8)
Ohangwena	325	2.8% (1.4 - 5.5)	82.5% (74.2 - 88.5)	0.0%	0.0%	0.9% (0.2 - 3.9)	2.8% (1.3 - 5.7)	10.5% (5.7 - 18.3)	0.6% (0.1 - 4.4)
Omaheke	471	11.0% (7.8 - 15.3)	78.1% (72.8 - 82.6)	0.8% (0.3 - 2.2)	0.0%	0.0%	7.2% (4.7 - 11.0)	0.4% (0.1 - 1.7)	2.3% (1.2 - 4.4)
Omusati	349	8.6% (5.4 - 13.4)	75.6% (70.0 - 80.5)	0.3% (0.0 - 2.0)	0.0%	1.4% (0.6 - 3.3)	4.6% (2.3 - 9.0)	8.6% (4.9 - 14.8)	0.9% (0.3 - 2.7)
Oshana	488	12.9% (9.3 - 17.7)	74.2% (64.2 - 82.2)	0.0%	0.4% (0.1 - 1.7)	0.8% (0.3 - 2.2)	0.8% (0.3 - 2.2)	10.7% (5.7 - 18.9)	0.2% (0.0 - 1.5)
Oshikoto	365	10.4% (7.3 - 14.6)	78.4% (72.2 - 83.5)	0.3% (0.0 - 2.0)	0.0%	4.4% (2.6 - 7.4)	4.1% (2.4 - 7.0)	1.4% (0.6 - 3.2)	1.1% (0.4 - 2.8)
Otjozondjupa	324	5.2% (2.7 - 9.9)	74.4% (65.0 - 81.9)	0.0%	0.0%	2.2% (0.9 - 5.2)	15.4% (9.7 - 23.6)	1.9% (0.5 - 7.1)	0.9% (0.3 - 2.8)
Zambezi	364	5.8% (3.0 - 10.9)	84.3% (78.1 - 89.0)	0.3% (0.0 - 2.0)	0.3% (0.0 - 2.0)	3.6% (1.7 - 7.4)	1.9% (0.6 - 6.4)	0.3% (0.0 - 2.1)	3.6% (1.6 - 8.0)

3.5.5.2 Skilled attendant at delivery

Access to skilled care during childbirth is critical for preventing maternal and neonatal complications, and ensuring safe delivery. The survey data reveals that most of the births among the surveyed population in the past 5 years were attended by a skilled health care provider, with nurses/midwives assisting most of the deliveries (76.9%). Specific points of assistance as reported in the surveys are shown in Table, as well as the regional proportions.

3.5.5.3 Minimum dietary diversity for women

The Minimum Dietary Diversity for Women (MDD-W) is an important indicator used to assess the adequacy of women's diets, by measuring the number of food groups consumed. It helps gauge the potential for meeting essential nutrient requirements (FAO and FHI 360, 2016).

The national weighted estimate shows that of the assessed women 15-49 years, 62.6% achieved MDD-W. Even though the national estimate shows a good performance, only three regions recorded a proportion higher than 50%. These include Erongo (63.9%), Hardap (65.5%), and Oshana at 60.7%. Other regions performed poorly, with proportions as low as 7.7% in Kavango East and 7.2% in Omaheke.

Table 32: Minimum dietary diversity for women, nationally and by region



	N	5 groups and above	Less than 5 groups
National	10,094	62.6% (61.0-64.2)	37.4% (35.8-39.0)
//Kharas	374	35.8% (31.1 - 40.8)	64.2% (59.2 - 68.9)
Erongo	1045	63.9% (60.9 - 66.8)	36.1% (33.2 - 39.0)
Hardap	616	65.5% (62.3 - 68.6)	34.5% (31.4 - 37.7)
Kavango East	333	23.7% (19.0-28.5)	76.3% (71.5-80.9)
Kavango West	261	7.7% (4.7 -11.6)	92.3% (88.4-95.3)
Khomas	519	21.6% (18.3 - 25.3)	78.4% (74.7 -81.7)
Kunene	299	15.1% (11.3 -19.4)	84.9% (80.6 - 88.7)
Ohangwena	472	21.9% (19.9 - 27.5)	76.3% (72.5 - 80.1)
Omaheke	783	7.2% (5.6 - 9.2)	92.9% (90.8 - 94. 5)
Omusati	283	21.9% (17.4 - 27.0)	78.1% (73.0 - 82.6)
Oshana	863	60.7% (57.2-64.0)	39.3% (36.0-42.8)
Oshikoto	286	10.8% (7.2-14.5)	89.2% (85.6-93.0)
Otjozondjupa	632	9.8% (8.7-11.3)	90.2% (89.7-93.2)
Zambezi	432	47.9% (44.0-51.8)	52.1% (48.2-56.0)

Table 33: Iron and folic acid supplementation (IFAS), nationally and by region


	Proportion of WRA who took IFAS	Duration		
		Less than 90 days	90-180 days	Above 180 days
National	75.8%	76.1% (75.0 – 77.3)	7.5% (6.9 - 8.2)	38.1% (35.3 - 41.0)
//Kharas	97.2%	62.3% (55.6-68.7)	16.9% (12.3 - 22.5)	18.4% (13.5 - 24.1)
Erongo	95.4%	16.9% (14.8 -19.2)	1.6% (1.0 - 2.5)	81.5% (79.1 - 83.7)
Hardap	84.9%	5.4% (3.8 -7.4)	5.5% (4.0 - 7.6)	89.1% (86.4 - 91.3)
Kavango East	95.5%	35.4% (27.0-43.9)	40.9% (32.3-49.6)	23.6% (16.0-31.2)
Kavango West	71.0%	19.6% (13.5 - 26.9)	71.0% (62.9 -78.1)	9.5% (5.3 - 15.4)
Khomas	70.0%	30.0% (24.0 – 36.5)	44.6% (37.9 – 51.4)	25.4% (19.8 – 31.8)
Kunene	93.5%	26.4% (19.2 - 33.6)	45.8% (37.7 -54.0)	27.1% (19.8 - 34.3)
Ohangwena	83.7%	16.4% (10 -22.8)	68.8% (60.7-76.8)	14.8% (8.7 - 21.0)
Omaheke	92.9%	17.4% (13.1 - 23.3)	59.9% (54.0 -65.7)	22.0% (17.9 - 28.0)
Omusati	92.7%	23.0% (16.6 - 30.5)	49.6% (41.4 - 57.9)	27.3% (20.5 - 35.2)
Oshana	94.8%	14.9% (12.7- 7.5)	4.1% (2.9-5.6)	81.0% (78.2-83.5)
Oshikoto	84.9%	5.9% (1.7% -10.1)	45.8% (36.7-54.9)	48.3% (39.3-57.4)
Otjozondjupa	73.9%	17.1% (9.9 - 24.4)	41.9% (32.5 - 51.3)	41.0% (31.5 - 50.4)
Zambezi	86.3%	6.9% (5.0-9.5)	21.8% (18.4-25.6)	71.3% (67.2-75.1)

3.5.5.4 Iron and folate supplementation during pregnancy

Iron and folate supplementation (IFAS) during pregnancy is a crucial indicator of maternal nutrition, aimed at preventing anaemia and supporting fetal development. Guidelines recommend daily supplementation for at least 90 days to reduce the risks of iron deficiency anaemia, birth complications, and low birth weight. In this survey, the assessment of IFAS was done on all WRA in the households who had a live birth or carried a pregnancy to term in the past 2 years. About two thirds (75.8%) of the women had taken IFAS at least once in the previous pregnancy or childbirth, 2 years prior to the survey. A combined proportion of 72.7% had taken IFAS for 90 or more days, which is the recommended duration, to ensure the intended results (Table 33).

Table 34: Nutrition status among women of reproductive age, nationally and by region

	Prevalence of acute malnutrition among PLW with infant < 6 months			Prevalence of acute malnutrition among non-pregnant and non-lactating WRA (15-49 years)		N
	GAM (MUAC < 230 mm)	SAM (MUAC < 210 mm)	No of PBW	GAM among WRA (MUAC <230 mm)	SAM among WRA (MUAC < 210 mm)	Number of non-pregnan/ non-lactating WRA
National	15.3% (12.9 – 17.7)	3.0% (1.9 – 4.0)	1,234	14.6% (13.5 – 15.6)	3.9% (3.3 – 4.5)	6,344
//Kharas	25.3% (17.4-35.3)	7.2% (3.4-14.6)	83	13.0% (10.2-16.4)	5.0% (3.4-7.5)	733
Erongo	9.4% (4.1-20.0)	0.0% (0-0)	64	8.5% (6.2-11.5%)	1.3% (0.6-2.9)	553
Hardap	25.4% (16.1-37.5)	4.2% (1.3-12.8)	71	14.5% (11.1-18.9)	3.5% (2.1-6.0)	454
Kavango East	17.9% (11.2- 27.2)	1.2% (0.2 - 8.6)	84	16.7% (13.4 - 20.7)	2.2% (1.0 - 4.7)	454
Kavango West	11.3% (6.0-20.2)	3.8% (1.2-11.5)	80	13.1% (8.9-18.8)	3.2% (1.8-5.7)	313
Khomas	13.5% (7.1-24.2)	2.7% (0.6-10.8)	74	9.9% (7.8-12.4)	2.6% (1.6-4.3)	680
Kunene	8.5% (3.6-18.3)	1.1% (0.1-7.9)	85	13.0% (9.6-17.3)	2.5% (1.3-4.6)	362
Ohangwena	16.1% (8.8-27.6)	1.6% (0.2-11.5)	62	20.4% (16.1%-25.5)	6.7% (4.5-10.0)	343
Omaheke	26.6% (18.1-37.1)	11.0% (5.5- 21.0)	112	20.9% (17.2-25.3)	8.8% (6.4-12.1)	592
Omusati	13.5% (6.9-24.7)	2.7% (0.6-10.6)	74	17.6% (14.0- 21.8)	7.4% (2.4-8.8)	387
Oshana	13.2% (7.2-22.8)	1.1% (0.2-7.6)	182	16.4% (13.3-19.9)	4.6% (3.3-6.4)	702
Oshikoto	16.9% (9.0 - 29.4)	5.6% (2.1 - 14.0)	71	13.9% (10.8 -17.7)	3.6% (2.1 - 6.3)	468
Otjozondjupa	21.8% (11.8-36.7)	7.7% (3.2-17.3)	78	12.2% (7.8-18.5)	4.8% (2.8-8.1)	459
Zambezi	7.9% (3.4 – 7.2)	1.1% (0.1 – 8.1)	151	8.6% (6.1 – 12.1)	1.4% (0.6 – 3.4)	353

3.5.5.5 Nutrition status by MUAC

Maternal diet at preconception and during pregnancy has a significant effect on the outcome of pregnancy, and fetal growth. SPHERE 2018 recommends classification of MUAC GAM at <230 mm, 185-229 mm for MAM and <185 mm SAM.²² Namibia IMAM guidelines classify wasting in women as MUAC <230mm, with women <210mm, severely wasted. The management protocols for pregnant and lactating women (PLW) recommends admission of all PLW with children <6 months to the supplementary feeding programme.

The prevalence of acute malnutrition among WRA, in the pregnant and lactating, and non-pregnant and non-lactating categories was three to five times higher than the prevalence noted in children 6-59 months. The national prevalence of acute malnutrition in the former was 15.3%, with 3.0% severely wasted, while the latter recorded 14.6%, with 3.9% severely wasted (Table 34).

3.5.6 Food security and livelihoods

3.5.6.1 Food Consumption Score (FCS)

The Food Consumption Score (FCS) is a crucial composite indicator used to evaluate dietary diversity, food frequency, and the nutritional value of foods consumed by households. It provides insights into the overall food security situation within a population. The FCS is calculated by assigning weights to different food groups, based on their nutritional importance, and summing the frequency of consumption over a reference period. The categorisation of HHs based on their Food Consumption Score helps classify food security levels into three main groups: acceptable, borderline, and poor. An acceptable FCS reflects sufficient dietary diversity, and frequent consumption of essential food groups, indicating a relatively stable food security situation. The borderline category denotes HHs at risk, as their food consumption patterns are not as robust and could easily be compromised by external shocks. The poor category signifies severe food insecurity, where HHs have extremely limited dietary diversity, and an inadequate intake of critical nutrients. In the surveys, the majority of HHs (67.3%) had an acceptable score, while 23% and 9.7% had a borderline, and poor score respectively (Table 35).

Table 35: Food consumption score, nationally and by region

	Number of households	Food consumption score by category		
		Acceptable (FCS > 35)	Borderline (21.5 ≤ FCS ≤ 35)	Poor (FCS ≤ 21)
 National	10,056	67.3% (65.8-68.9)	23.0% (21.7-24.2)	9.7% (8.8-10.6)
//Kharas	998	69.4% (63.5 - 74.8)	19.7% (16.2 - 23.9)	10.8% (8.2 - 14.2)
Erongo	1,044	85.0% (80.9 - 88.3)	10.8% (8.4 - 13.8)	4.2% (2.9 - 6.2)
Hardap	761	63.5% (57.8 - 68.8)	24.2% (20.5 - 28.3)	12.4% (9.7 - 15.6)
Kavango East	426	44.8% (35.9-54.1)	38.3% (31.4-45.6)	16.9% (11.3-24.6)
Kavango West	404	30.4% (24.0 - 37.7)	42.6% (36.0 - 49.4)	27.0% (19.6 - 35.9)
Khomas	870	80.7% (76.3 - 84.4)	13.7% (10.7 - 17.3)	5.6% (3.9 - 8.0)
Kunene	495	20.4% (17.3 - 23.5)	22.7% (19.5-26.0)	56.9% (53.1-60.7)
Ohangwena	539	69.2% (62.4 - 75.2)	27.1% (21.7 - 33.3)	3.7% (2.2 - 6.3)
Omaheke	865	45.1% (39.1 - 51.2)	32.9% (29.0 - 37.1)	22.0% (17.5 - 27.2)
Omusati	661	64.6% (58.6 - 70.2)	28.4% (24.1 - 33.3)	7.0% (4.3 - 11.0)
Oshana	791	87.5% (83.8 - 90.4)	10.4% (7.9 - 13.4)	2.1% (1.2 - 3.7)
Oshikoto	727	61.6% (55.8 - 67.1)	30.4% (25.6 - 35.7)	8.0% (5.4 - 11.7)
Otjozondjupa	733	68.9% (61.9 - 75.1)	18.7% (14.6 - 23.7)	12.4% (8.5 - 17.8)
Zambezi	619	54.0% (46.4 - 61.3)	34.1% (28.6 - 40.0)	12.0% (8.6 - 16.4)

3.5.6.2 Reduced Coping Strategy Index (rCSI)

The Reduced Coping Strategy Index (rCSI) measures the stress level of HHs due to food shortages, based on the frequency of specific consumption-based coping strategies, used in the past seven days. These strategies, indicative of food insecurity, include relying on less preferred and/or less expensive foods, borrowing food, or seeking help from friends or relatives, limiting portion sizes at mealtimes, reducing the number of meals eaten in a day, and reducing adult consumption so that children can eat.

The survey findings show that almost half (47.1%) of the households in the survey sample have started employing negative coping strategies, with the most deployed being the reliance on less preferred and/or less expensive foods. At least a quarter or more of HHs employed either of the other four strategies as shown in Table 36. The findings also indicate strained household food security in the regions.

Table 36: Negative coping strategies, nationally and by region

	Number of HHs	Negative coping strategies employed by households				
		Rely on less preferred and/or less expensive foods	Borrow food, or rely on help from a friend or relative	Limit portion sizes at mealtime	Reduce the number of meals eaten in a day	Reduce consumption by adults so children could eat
National	10,036	47.1% (45.1-49.1)	27.2% (25.7-28.6)	39.3% (37.4-41.1)	37.1% (35.3-39.0)	25.0% (23.6-26.4)
//Kharas	998	48.8% (43.0 - 54.6)	29.8% (26.1 - 33.8)	38.9% (33.9 - 44.1)	40.2% (34.7 - 45.9)	20.4% (16.8 - 24.6)
Erongo	1,044	42.4% (35.9 - 49.3)	22.5% (19.0 - 26.3)	31.5% (26.5 - 36.9)	32.2% (27.3 - 37.6)	18.7% (15.2 - 22.7)
Hardap	761	56.9% (49.8 - 63.7)	24.1% (19.7 - 29.1)	34.3% (28.7 - 40.4)	29.5% (24.1 - 35.6)	17.5% (13.3 - 22.8)
Kavango East	426	51.3% (41.6 - 60.8)	38.7% (29.6 - 48.7)	52.7% (42.7 - 62.4)	40.7% (31.4 - 50.6)	37.8% (28.7 - 47.7)
Kavango West	404	55.3% (46.8 - 63.5)	37.3% (31.6 - 43.4)	67.9% (60.9 - 74.2)	59.0% (51.2 - 66.4)	48.6% (41.5 - 55.8)
Khomas	870	60.2% (54.7 - 65.5)	27.3% (22.9 - 32.3)	49.7% (43.8 - 55.6)	47.1% (41.4 - 52.8)	24.6% (20.9 - 28.7)
Kunene	495	37.6% (33.9 - 41.4)	41.5% (37.7 - 45.4)	61.3% (57.5 - 65.1)	56.9% (53.1 - 60.7)	60.3% (56.5 - 64.1)
Ohangwena	539	47.5% (39.3 - 55.9)	22.0% (17.1 - 27.8)	33.8% (26.3 - 42.3)	31.4% (24.2 - 39.7)	30.4% (25.0 - 36.3)
Omaheke	865	41.2% (34.2 - 48.5)	36.6% (31.5 - 42.1)	40.7% (34.5 - 47.3)	43.1% (37.0 - 49.4)	23.6% (18.8 - 29.3)
Omusati	661	25.9% (20.1 - 32.7)	15.8% (11.6 - 21.2)	28.1% (22.9 - 33.8)	24.3% (19.5 - 29.8)	20.2% (16.1 - 25.1)
Oshana	791	52.0% (44.0 - 60.0)	18.5% (15.0 - 22.5)	27.7% (22.6 - 33.4)	28.3% (23.0 - 34.2)	16.0% (12.3 - 20.7)
Oshikoto	727	27.0% (21.9 - 32.8)	15.4% (11.7 - 19.9)	29.5% (24.3 - 35.3)	26.1% (21.3 - 31.6)	15.9% (13.0 - 19.4)
Otjozondjupa	733	48.7% (40.5 - 57.0)	27.3% (22.2 - 33.0)	33.0% (26.6 - 40.1)	35.6% (28.8 - 43.0)	20.5% (16.2 - 25.7)
Zambezi	619	47.3% (40.3 - 54.3)	50.2% (44.4 - 55.9)	47.7% (40.5 - 54.9)	42.8% (35.6 - 50.4)	39.9% (34.0 - 46.1)

3.5.6.3 Social protection

The national weighted result shows that more than half of the households (58.4%) are not enrolled on any social protection scheme, while 41.6% are benefiting from one or more schemes. Among the beneficiaries, the pension fund was the most utilised. Other notable forms of support included Harambe (food banks), National Student Financial Assistance Fund (NSFAF), and various grants - disability, child welfare, orphans and vulnerable children, social grants, and drought relief food grants. The schemes varied per region (Table 37).

Table 37: Social protection coverage, nationally and by region

	N	YES	NO
	Yes	Yes	Yes
National	10,084	41.6% (40.1-43.2)	58.4% (56.8-59.9)
//Karas	1008	67.3%	32.7%
Erongo	1044	26.6%	73.4%
Hardap	764	22.8%	66.2%
Kavango East	427	53.6%	46.4%
Kavango West	405	74.1%	25.9%
Khomas	875	21.4%	78.6%
Kunene	595	59.3%	40.7%
Ohangwena	539	55.1%	44.9%
Omaheke	865	51.8%	48.2%
Omusati	664	58.6%	41.4%
Oshana	791	41.6%	58.4%
Oshikoto	736	58.8%	41.2%
Otjozondjupa	739	33.7%	66.3%
Zambezi	626	33.1%	66.9%

3.5.7 School enrolment

Most children aged 5-18 years (84.1%) were reportedly enrolled in school at the time of the survey. Reasons for the small proportion that was not enrolled (15.9%), varied widely, with the age of the child contributing to the given response. For most of the young children (4-6 years), the reason given for non-enrolment was the child being deemed too young (50.9%) to be in school, while older children were not enrolled because of family labour responsibilities (3.0%), no education grants (11.4%), and there being no school nearby for their educational level (Table 38).

Table 38: School enrolment for children 4-18 years, nationally and by region

	Number of HHs	% not enrolled in school	Reasons for not being enrolled in school for children aged 4-17 years												Teacher absenteeism	Others
			Chronic sickness	Family labour responsibilities	Weather (rain, floods, storms)	Working outside home	Moved from school area	No food in the schools	No education grant/fees	Household doesn't see value of schooling	Too young to be in school	No school nearby	Pregnant/taking care of own child			
 National	12,701	(2195) 15.9%	(76) 3.3%	(61) 3.0%	(4) 0.2%	(8) 0.4%	(59) 3.0%	(7) 0.4%	(259) 11.4%	(61) 2.8%	(1,140) 50.9%	(127) 6.3%	(30) 1.5%	(3) 0.1%	(347) 16.8%	
//Kharas	981	(131) 13.4%	(5) 3.8%	(1) 0.8%	0.0%	(2) 1.5%	0.0%	0.0%	(16) 12.2%	0.0%	0.0%	(4) 3.1%	0.0%	0.0%	(32) 24.4%	
Erongo	1051	(126) 12.0%	(5) 4.1%	(1) 0.8%	0.0%	0.0%	0.0%	0.0%	(28) 23.0%	(3) 2.5%	(58) 47.5%	(6) 4.9%	(1) 0.8%	0.0%	(20) 16.4%	
Hardap	668	(129) 19.3%	(3) 2.3%	(2) 1.6%	0.0%	(1) 0.8%	0.8%	0.0%	(19) 14.8%	(1) 0.8%	(77) 0.2%	(2) 1.6%	(2) 1.6%	0.0%	(20) 15.6%	
Kavango East	930	(168) 18.1%	(6) 3.6%	0.0%	0.0%	0.0%	(11) 6.6%	(4) 2.4%	(24) 14.4%	(1) 0.6%	(102) 61.1%	(10) 6.0%	(2) 1.2%	0.0%	(6) 3.6%	
Kavango West	874	(144) 16.5%	(8) 5.6%	(7) 4.9%	0.0%	0.0%	(4) 2.78%	(1) 0.7%	(2) 1.39%	0.0%	(103) 71.5%	(12) 8.3%	(2) 1.4%	(1) 0.7%	(3) 2.1%	
Khomas	942	(123) 13.1%	(2) 1.6%	(1) 0.8%	0.0%	(1) 0.8%	0.8%	0.0%	(19) 15.6%	(4) 3.3%	(70) 57.4%	(6) 4.9%	(1) 0.8%	0.0%	(16) 13.1%	
Kunene	595	(272) 37.4%	(7) 2.6%	(11) 4.0%	0.0%	(1) 0.4%	(1) 0.4%	0.0%	(56) 20.6%	(30) 11.0%	(95) 34.9%	(1) 3.3%	(1) 0.4%	0.0%	(60) 22.1%	
Ohangwena	1101	(134) 12.2%	(30) 2.2%	(2) 1.5%	0.0%	(2) 1.5%	(10) 7.5%	0.0%	(5) 3.7%	(4) 3.0%	(70) 52.2%	(8) 6.0%	(4) 3.0%	(1) 0.7%	(25) 18.7%	
Omaheke	966	(296) 31%	(14) 4.7%	(3) 1.0%	(2) 0.7%	0.0%	(14) 4.7%	0.0%	(34) 11.5%	(4) 1.4%	(172) 58.3%	(15) 5.1%	(5) 1.7%	0.0%	(32) 10.8%	
Omusati	595	(114) 10.6%	(4) 3.5%	(11) 9.6%	0.0%	0.0%	(8) 7.0%	0.0%	(5) 4.4%	(4) 3.5%	0.0%	(12) 10.5%	(2) 1.8%	0.0%	(68) 59.6%	
Oshana	1080	(68) 6.3%	(1) 1.5%	(4) 6.0%	0.0%	0.0%	(5) 7.5%	0.0%	(4) 6.0%	0.0%	(42) 62.7%	(3) 4.5%	(1) 1.5%	0.0%	(7) 10.5%	
Oshikoto	1055	(119) 11.3%	(3) 2.5%	(4) 3.4%	0.0%	(1) 0.8%	0.0%	0.0%	(13) 11.0%	(4) 3.4%	(56) 47.5%	(17) 14.4%	(3) 2.5%	0.0%	(17) 14.4%	
Otjozondjupa	700	(204) 29.1%	(8) 3.9%	(11) 5.4%	0.0%	0.0%	(2) 1.0%	(2) 1.0%	(27) 13.2%	(4) 2.0%	(109) 53.4%	(17) 8.3%	(2) 1.0%	0.0%	(22) 10.8%	
Zambezi	557	(170) 30.5%	(7) 4.2%	(3) 1.8%	0.0%	0.0%	(2) 1.2%	0.0%	(7) 4.2%	(2) 1.2%	(117) 69.6%	(6) 3.6%	(4) 2.4%	0.0%	(19) 11.3%	



Acute malnutrition

The weighted estimate of GAM indicates a medium threshold of wasting in Namibia based on WHZ scores. The observed prevalence of Acute malnutrition in the regions ranges from low (2.5%) in Erongo, to high (11.8%) in Oshikoto. Half of the regions in the country indicate a medium threshold, with six regions being on a low threshold, and one region being classified as high. The analysis of all children who are malnourished, by all the criteria in the survey, shows that the prevalence of combined GAM (cGAM) is still low to high within the regions, with a majority of children malnourished based on WHZ, and only few malnourished by MUAC.²³

The current assessments are based on the first SMART surveys ever to be conducted in Namibia, with the most recent anthropometric data contained in NDHS 2013. Interpretation of the nutrition situation is therefore only based on the current data, by classifying the regions based on the current prevalence of malnutrition, without detecting what change might have occurred, as it is not feasible to compare the current findings to the NDHS 2013 findings. The surveys were however conducted within the lean season, when the effects of the drought were likely to be evident. The impact of drought on the nutrition status of children will be prolonged, with a likely worsening situation expected in Q1 of 2025. This presents an opportunity for programmers and decision makers to put measures in place to manage the situation, and mitigate the situation.

The prevalence of acute malnutrition among PLW, as well as in non-pregnant and non-lactating women aged 15-49 years, can be described as high, with the prevalence of wasting (<230mm) among the PLW ranging from 7.9% in Zambezi to 26.6% in Omaheke, while in the non-pregnant and non-lactating group, the prevalence ranged from 8.5% in Erongo to 20.9% in Omaheke. Even though there are no globally recognized thresholds for acute malnutrition for this group, the prevalence is noted to be three or more times higher than that of children 6-59 months, which ranges from 2.5% to 11.8%.

Chronic malnutrition

The national estimates for stunting indicate that Namibia has a high stunting rate. Almost half of the regions recorded a very high stunting prevalence, with other regions recording a high prevalence. Even though the SMART survey findings may not be relatable to the NDHS 2013 findings, the findings from the 2024 surveys speak to the 2013 NDHS results, where most of the regions had a high, or very high, stunting prevalence. This may indicate stunting as a chronic issue in the country, with more efforts needed to address the probable causes in the different regions. There may also be a need to conduct a nutrition causal analysis to further understand the precise causes of stunting in the survey areas, as well as give practical solutions based on the findings.

Food security and livelihoods

The survey findings show that most HHs have an acceptable food consumption score (FCS). However, while it is noted that communities in Namibia consume high levels of meat and meat products, including wild meat, which have the highest score on the determination of the FCS, this does not necessarily indicate a diversified diet. The assessment of households' coping strategies showed that significant

proportions of HHs across all regions had applied the five negative coping strategies, with the most employed strategies being to rely on less preferred foods, and reducing the number of meals per day. This indicates the initial stages of the effects of the ongoing drought, in relation to household food security.

Death rates

Generally, the crude death rates in all the regions were below the WHO emergency threshold of 1/10,000/day, as well as below 0.5/10,000/day, which are classified as alerts as per the SPHERE recommendations. Similarly, the U5 death rates were below the WHO emergency threshold of 2/10,000/day in all the survey areas.

Infant and young child feeding practices

The proxy IYCF indicators assessed in the survey reflect poor childcare practices in the community, with all regions showing poor performance in both the breastfeeding indicators, as well as the complimentary feeding indicators. Breastfeeding practices are poorly practiced, with less than 90% of mothers initiating breastfeeding in a timely manner, across all regions. Surprisingly, about 10% of children in each region had never been breastfed, hence a significant proportion missing out on the key benefits of breastmilk, and the chance of missing out on adequate milk feeds likely to worsen the nutrition situation for this sensitive group of children. Exclusive breastfeeding for children under six months was also low, ranging from 25% in Khomas to 68% in Ohangwena. Across all regions less than a third of children under six months had practiced mixed feeding. More than half (55.6%) of children <6 months practiced mixed feeding in Khomas. This may indicate that mixed feeding is predominantly practiced among urban populations. Bottle feeding was however practiced across all population types, with proportions ranging from 19% in Zambezi to 44.9% in Khomas, with continued breastfeeding being low, and not exceeding half the children, except in Kavango West (54.4%).

In some regions, low proportions of children 6-8 months were introduced to solid, semi solid and soft foods in a timely manner. These include //Kharas (60%), Kavango West (61.1%), Kunene (70.0%), Ohangwena (73.5%), Oshikoto (73.1%) and Zambezi at 73.9%. With almost half of the regions delaying introduction to these foods, and notable proportions having not been introduced in the other regions, this group is exposed to very low nutrient intake, which can manifest in both acute and chronic nutritional status. Child intake was generally poor, with a minimum meal frequency below 50% in all regions, except in Oshana at 50.6%. MDD was extremely low, ranging from 2.9% in Zambezi to 24.9% in Khomas, with extremely low proportions of children 6-23 months achieving the minimum acceptable diet, 16.5% in //Kharas, and as low as 1.5% in Zambezi. As a result, more than half of all children across the regions are experiencing either moderate or severe child food poverty. The consumption of vegetables and fruits was very low, as well as the consumption of fresh foods, hence a likelihood that children may also be exposed to both macro- and micronutrient deficiencies.

Overall, a notable proportion of children in Namibia appear to have a delayed introduction to soft, semi soft or solid foods with almost a quarter of the children 6-8 months having a delayed introduction, and 78.5% introduced to these foods in a timely manner. Across the regions, the proportions vary, albeit with similar performance, however regions such as //Kharas (60.0%), Kavango West (61.1%), and Kunene (70.0%) show the most worrying performance on this indicator. For children 6-23 months who were on complimentary food, the frequency of the meals was not ideal, with only 39.1% of children being fed at the recommended frequencies. All regions had less than 50% of the desired frequency, except Oshana at just 50.6%. Diet diversity is extremely low, with the national average at 16.9% of children having a diversified diet and only 8.7% having had the minimum acceptable diet. Despite the Namibian population

traditionally being consumers of fresh foods, less than half (44.5%) of all children had consumed fresh foods, while the consumption of sweet beverages (35.3%), unhealthy foods (25.5%), and the lack of vegetables or fruits in the children's diets (53.7%) were notable. Urban populations were more likely to give children sweet beverages and unhealthy foods.

The analysis of child food poverty shows that more than half of children across all regions have food poverty, either moderate (3 – 4 food groups a day), or severe poverty (0-2 food groups a day). This indicates that most children in Namibia are deprived of adequate nutrition, which may be associated with low household income, or limited access to food or cultural practices around food consumption. With these current findings, Namibian children are exposed to malnutrition, with the risk of deficiency for both macro- and micronutrients. Children who suffer from child food poverty are also likely to be exposed to morbidities, due to their bodies having a weaker immune system.

Water, sanitation, and hygiene (WASH)

Most HHs in the surveyed areas get their drinking and cooking water from protected sources, and free from contaminants. It is encouraging to see many HHs having a sufficient supply of safe water. The proportion of HHs consuming adequate, and safe amounts of water, was notably above 50% in all the survey areas, except in Kunene (41.4%), and //Kharas (48.6%). Almost half of HHs (48.0%) in Namibia have water from a piped connection at their house, or the neighbor's house, with other major water sources reported as being public taps/standpipes (36.3%). These two main water sources are an indication of relative water safety, and the majority of communities are cushioned against common water-borne diseases from contaminated water that occur during times of drought, with the accompanying acute and chronic water shortages. However, only about a third (32.6%) of surveyed HHs had a specific handwashing device in their homes, with 71.1% of those having soap and water present. This indicates a gap in proper handwashing in most households.

Child immunisation, Vitamin A and deworming

The assessment of BCG vaccination shows that most children in Namibia initiate immunisation services, with 96.6% of children 0-59 months having received the BCG vaccine, and 92.3% have this either documented, or physically evident, with a scar. Similarly, the proportion of children who received the OPV vaccine was above 80% for both OPV1 and OPV3, with only a small proportion having received the vaccine, but not having the child health passport to prove it. Both the first and second doses of the measles vaccination were above 80% (considering by card and recall). SPHERE 2018 recommends a coverage of >95%, hence coverage for OPV and measles in most regions falls slightly short of this target. The proportion recalled was not due to the vaccine not being recorded, but due to the caregiver not having a child booklet available at the time of assessment. Documentation of the health services provided to children is therefore likely to be happening ideally across all health facilities in the country.

Coverage of Vitamin A supplementation was lower than the WHO target of >80% in most of the regions, with the national weighted estimate showing about a third of children 6-59 months having received Vitamin A supplements in the 6 months prior to the survey. Similar proportions of children 12-59 months were observed for deworming. Kunene region notably performed poorly for immunisation services, which may be linked to limited access to services occasioned by the rough terrain and poor road network, and the vastness of the area.

Morbidity and health-seeking behaviour

There were no major differences in the morbidities observed across the regions, with diarrhoea ranging from 8.8% in Oshikoto to 28.2% in Kavango West. Fever prevalence ranged from 7.9% in Omusati to 28.1% in Khomas, while the prevalences of ARI symptoms were generally low across all regions, not going beyond 2.8% in Khomas. The prevalence may not be considered high, with an average of 16.3% of children suffering from diarrhoea. However small the proportion is, this should be a matter of concern, considering the effect of diarrhoea on the nutrition status of the U5 child. Poor treatment-seeking, not just of diarrhoea (42.6%), but also of fever (56.3%), is very concerning. This may be ascribed to several reasons not assessed in the survey, but a presumption by caregivers that the illnesses was not serious enough to warrant treatment-seeking. The practice of managing diarrhoea with both zinc and ORS was low, at 22.2%. About half of children (51.9%) were treated with ORS alone, while zinc was used to treat 27.4%. Combining zinc and ORS in the management of diarrhoea is a concept being advocated for in the country, ensuring eventual widespread practice by all health facilities, which is not currently the case.

Maternal health

Most of deliveries in Namibia are conducted by skilled providers, with nurses/midwives providing these services. Hospital deliveries ensure that mothers receive adequate support, and to ensure growth and development of the infant and young child. Interestingly, more than half (62.6%) of WRA achieved the MDD-W (5 or more food groups), even though the proportions varied widely across regions. The findings here are in stark contrast to what was observed for the same indicator among children 6-23 months, which highlights a likely cultural issue around feeding for infants and young children, with some foods likely not to be given to children, but reserved for adults.

About two thirds (75.8%) of women who had given birth in the last two years had taken iron and folic acid supplementation during their pregnancy. Amongst these women, more than two thirds reported to have taken IFAS for the minimum recommended period of 90 days or more.

The prevalence of acute malnutrition nationally and in most regions is moderate, with the exception of one, which is high. There is no existing data to inform the change in the nutrition situation that may have been occasioned by the ongoing drought, therefore the results have been interpreted in consideration of the global thresholds for GAM. The situation in Oshikoto however shows that urgent action is needed to address the low nutrition prevalence, as well as preventing the situation from further deterioration. Otjozondjupa and Omusati had a medium threshold, but with the distribution of wasting within the region showing clusters of high prevalence. Therefore, the two regions should seek to identify areas that are worse affected, and probable reasons. There should be heightened focus in these regions to ensure that the situation is addressed. Worth noting is that almost half of the regions in the country had a medium threshold of wasting, with the upper interval on the high threshold, which indicates a likelihood of the situation being on the high threshold. The lean season is expected to peak in the first quarter of 2025, with more cases of wasting likely to be recorded if action is not taken to address the situation. To address the relatively high prevalence of wasting among WRA, there is need to institutionalise the supplementary feeding programme, with adequate screening of this group as well.

Almost a third of the children in Namibia are likely to be stunted, with the national stunting estimate being 29.5% (28.0 – 30.9). Some regions exhibited higher prevalence, with almost half of the country showing critical levels. Based on the previous NDHS findings, Namibia has recorded high levels of stunting. However, the situation seems to be worsening, with action needed to address stunting in the long term, calling for a multisectoral approach to address the issue, which has more dire implications for the child than wasting.

The food consumption score for HHs is adequate. However, negative coping is implemented in many cases, which may indicate early signs of strain related to food security. It is likely that the situation may not improve soon, and therefore the most affected households need to be identified, and cushioned with food security programmes. Too many children are eating less than the recommended amounts, with the minimum quality and frequency of food required for their development, which puts them at increased risk of malnutrition and other illnesses. Even though consumption for young children may not be directly related to household food insecurity, this is a matter of concern that needs to be addressed as part of future food security strategies.

The IYCF indicators unveil serious gaps in IYCF practices among caregivers, in both breastfeeding and complimentary practices. Nationally, less than half (49.0%) of children 0-5 months were exclusively breastfed, while early initiation to breastfeeding was also considerably low at 63.6%. Continued breastfeeding for children 12 – 23 months was only at 36%, which shows that most children are being weaned off the breast at around one year of age, while bottle feeding practice was reported at 34.1%. All of the complimentary feeding indicators show poor and inadequate consumption by children 6-23 months, which is likely to directly expose these children to malnutrition.



Survey findings	Possible contributing factors	Recommendation
Moderate prevalence of wasting nationally, and high prevalence in Oshikoto region Pockets of malnutrition in Oshikoto, Otjozondjupa and Omusati regions High levels of acute malnutrition among WRA, both PLW and non-PLW	- Inadequate dietary intake by young children (under five years). - Weak mechanisms for detection and referral of malnourished children. - Inadequate training of health workers on the management of acute malnutrition. - Poor consumption of diversified diets among WRA.	Initiate treatment of acute malnutrition across all the regions with medium or high prevalence of GAM.
		Strengthen the CMAM programme in areas of high prevalence, with adequate reporting to monitor the trends.
		Increase advocacy efforts for more investment for nutrition interventions from government and donor networks.
		Identify hotspot areas for malnutrition in Oshikoto, Omusati and Otjozondjupa regions to conduct mass screening and referral of malnourished children, using all the admission criteria (WHZ, Oedema and MUAC).
		Build treatment capacity closer to the children: every health facility in the identified regions should provide treatment services, including providing skills to treat, equipment to monitor nutritional status, and the supplies needed to treat.
Notable proportions employing negative coping strategies	- Lack of food at the household level due to a poor harvest due to drought. - Low purchasing power at the household level.	Provide emergency food rations to affected households with PLW and children under two. This needs to factor in the calorie composition and quantity to ensure the households, including young children get a diversified diet.
		Provide high energy-high protein supplements for PLW and young children from vulnerable households.
Poor IYCF practices among caregivers, especially in the urban population Low intake of diversified diets and low proportion consuming a minimum acceptable diet Consumption of sweet foods and unhealthy foods in urban populations Low consumption of fresh foods, fruits and vegetables.	- Cultural practices around young child feeding. - Unavailability of diversified foods at household level due to the drought, and/or low income households. - Lack of adequate knowledge about childcare and feeding, as well as knowledge on healthy feeding.	Strengthen the conveying of key IYCF messages at both health facility and community level.
		Scale up IYCF programming in urban areas to mitigate against consumption of unhealthy foods and sweet beverages.
		In all affected areas, link low income households to food security and social protection interventions.
		Scale up support to mother groups for improved knowledge transmission in the community, while keeping them engaged with income generating activities such as kitchen gardens, which can help avail diversified foods for young children.
		Micronutrient supplementation for children 6-59 months.

Survey findings	Possible contributing factors	Recommendation
Low Vitamin A supplementation, deworming and measles vaccination.	Poor documentation services at both the health facility and lack of documentation for community level activities.	Increase health campaigns to improve coverage of vitamin A supplementation, deworming, and measles vaccination especially in less accessible areas of Kunene region.
		Procurement of adequate supplies of Vitamin A and deworming tablets.
Low practice in the use of zinc and ORS in management of diarrhoea	Inadequate training of health workers on the management of diarrhoea with zinc, as part of the routine treatment.	Procurement of adequate zinc tablets at health facilities.
		Train all healthcare providers on the management of diarrhoea with zinc and ORS.
		Mobilise the community on the management of diarrhoea with zinc and ORS, including home-made therapies, as well as treatment-seeking for diarrhoea in health facilities.
Poor handwashing practice by the households	Low sensitisation of the community on handwashing.	Training of community members on setting up handwashing stations, using locally available resources such as tippy taps.
		Scale up education on handwashing at the community level using different media such as radio, IEC materials in public places and community resource persons.

Annex 1: Selected clusters for the 14 regions

Enumeration Area Number	Constituency	Region name	ea_subt	hh_count
081101003	Oshikango	Ohangwena	Town	93
080699001	Okongo	Ohangwena	Communal Land	65
080901004	Ondobe	Ohangwena	Town	91
080199010	Eenhana	Ohangwena	Communal Land	85
080699010	Okongo	Ohangwena	Communal Land	69
080999009	Ondobe	Ohangwena	Communal Land	79
080699016	Okongo	Ohangwena	Communal Land	81
080601019	Okongo	Ohangwena	Village	108
080601022	Okongo	Ohangwena	Village	95
080399020	Engela	Ohangwena	Communal Land	79
081299013	Oshikunde	Ohangwena	Settlement	74
080299031	Endola	Ohangwena	Communal Land	78
080699033	Okongo	Ohangwena	Communal Land	80
080799021	Omulonga	Ohangwena	Communal Land	86
081299019	Oshikunde	Ohangwena	Communal Land	72
080599027	Ohangwena	Ohangwena	Communal Land	85
080901028	Ondobe	Ohangwena	Town	81
080299045	Endola	Ohangwena	Communal Land	87
080699048	Okongo	Ohangwena	Settlement	76
080999035	Ondobe	Ohangwena	Communal Land	76
080301050	Engela	Ohangwena	Town	87
080799035	Omulonga	Ohangwena	Communal Land	85
081199044	Oshikango	Ohangwena	Communal Land	80
080699059	Okongo	Ohangwena	Communal Land	89
080999048	Ondobe	Ohangwena	Communal Land	62
081101054	Oshikango	Ohangwena	Town	97
080299065	Endola	Ohangwena	Communal Land	82
081099050	Ongenga	Ohangwena	Settlement	68
080199073	Eenhana	Ohangwena	Communal Land	70
080799055	Omulonga	Ohangwena	Communal Land	77
081299041	Oshikunde	Ohangwena	Communal Land	80
080899029	Omundaungilo	Ohangwena	Communal Land	85
080299080	Endola	Ohangwena	Communal Land	88
081299044	Oshikunde	Ohangwena	Communal Land	89
080999064	Ondobe	Ohangwena	Communal Land	85
080599065	Ohangwena	Ohangwena	Communal Land	71
080601092	Okongo	Ohangwena	Village	94
080199096	Eenhana	Ohangwena	Communal Land	88

Enumeration Area Number	Constituency	Region name	ea_subt	hh_count
081299049	Oshikunde	Ohangwena	Communal Land	78
080799077	Omulonga	Ohangwena	Communal Land	75
080699106	Okongo	Ohangwena	Communal Land	76
080499045	Epembe	Ohangwena	Communal Land	83
081299054	Oshikunde	Ohangwena	Settlement	78
080499047	Epembe	Ohangwena	Communal Land	77
080999088	Ondobe	Ohangwena	Communal Land	86
080999089	Ondobe	Ohangwena	Communal Land	69
081199091	Oshikango	Ohangwena	Communal Land	89
080299107	Endola	Ohangwena	Communal Land	87
080799090	Omulonga	Ohangwena	Communal Land	87
081101097	Oshikango	Ohangwena	Town	81
070499002	Opuwo Rural	Kunene	Communal Land	89
070199005	Epupa	Kunene	Communal Land	77
070199006	Epupa	Kunene	Communal Land	61
070501004	Opuwo Urban	Kunene	Town	87
070599012	Opuwo Urban	Kunene	Communal Land	78
070301011	Khorixas	Kunene	Town	95
070799011	Sesfontein	Kunene	Settlement	73
070799022	Sesfontein	Kunene	Communal Land	82
070601011	Outjo	Kunene	Municipality	95
070199018	Epupa	Kunene	Communal Land	81
070299006	Kamanjab	Kunene	Commercial Farm	53
070799030	Sesfontein	Kunene	Communal Land	77
070301014	Khorixas	Kunene	Town	80
070601026	Outjo	Kunene	Municipality	82
070399017	Khorixas	Kunene	Commercial Farm	56
070399029	Khorixas	Kunene	Commercial Farm	59
070301038	Khorixas	Kunene	Town	96
070301047	Khorixas	Kunene	Town	85
070399058	Khorixas	Kunene	Conservancy	62
070501022	Opuwo Urban	Kunene	Town	87
070501031	Opuwo Urban	Kunene	Town	90
070501039	Opuwo Urban	Kunene	Town	87
070501048	Opuwo Urban	Kunene	Town	88
070501057	Opuwo Urban	Kunene	Town	82
070599066	Opuwo Urban	Kunene	Communal Land	81
070599076	Opuwo Urban	Kunene	Communal Land	84
070499028	Opuwo Rural	Kunene	Communal Land	83
070699032	Outjo	Kunene	Commercial Farm	60
070601042	Outjo	Kunene	Municipality	95
070601050	Outjo	Kunene	Municipality	90
070601058	Outjo	Kunene	Municipality	90

Enumeration Area Number	Constituency	Region name	ea_subt	hh_count
070299011	Kamanjab	Kunene	Commercial Farm	48
070199028	Epupa	Kunene	Communal Land	76
070201029	Kamanjab	Kunene	Village	89
070299042	Kamanjab	Kunene	Commercial Farm	57
070199038	Epupa	Kunene	Communal Land	79
070199048	Epupa	Kunene	Communal Land	73
070199058	Epupa	Kunene	Communal Land	86
070199067	Epupa	Kunene	Communal Land	86
070499038	Opuwo Rural	Kunene	National Park	82
070499047	Opuwo Rural	Kunene	Communal Land	81
070499057	Opuwo Rural	Kunene	Communal Land	74
070599088	Opuwo Urban	Kunene	Communal Land	83
070599098	Opuwo Urban	Kunene	Communal Land	82
070501107	Opuwo Urban	Kunene	Town	83
070799039	Sesfontein	Kunene	Communal Land	80
070799052	Sesfontein	Kunene	Commercial Farm	56
070399070	Khorixas	Kunene	Commercial Farm	57
070399083	Khorixas	Kunene	Conservancy	64
070301092	Khorixas	Kunene	Town	96
070299058	Kamanjab	Kunene	Commercial / Resettlement Farm	60
070201070	Kamanjab	Kunene	Village	82
070699073	Outjo	Kunene	Commercial Farm	59
070601084	Outjo	Kunene	Municipality	81
130499003	Omatako	Otjozondjupa	Settlement	66
130499022	Omatako	Otjozondjupa	Conservancy	95
130499042	Omatako	Otjozondjupa	Commercial Farm	63
130499061	Omatako	Otjozondjupa	Commercial Farm	60
130499081	Omatako	Otjozondjupa	Commercial Farm	67
130499101	Omatako	Otjozondjupa	Commercial Farm	59
130201005	Okahandja	Otjozondjupa	Municipality	85
130201018	Okahandja	Otjozondjupa	Municipality	82
130201032	Okahandja	Otjozondjupa	Municipality	98
130201046	Okahandja	Otjozondjupa	Municipality	94
130201061	Okahandja	Otjozondjupa	Municipality	115
130201075	Okahandja	Otjozondjupa	Municipality	95
130201089	Okahandja	Otjozondjupa	Municipality	89
130201103	Okahandja	Otjozondjupa	Municipality	89
130201117	Okahandja	Otjozondjupa	Municipality	92
130201131	Okahandja	Otjozondjupa	Municipality	85
130201144	Okahandja	Otjozondjupa	Municipality	89
130201160	Okahandja	Otjozondjupa	Municipality	89
130201173	Okahandja	Otjozondjupa	Municipality	71
130201190	Okahandja	Otjozondjupa	Municipality	73

Enumeration Area Number	Constituency	Region name	ea_subt	hh_count
130601001	Otiwarongo	Otjozondjupa	Municipality	96
130601008	Otiwarongo	Otjozondjupa	Municipality	96
130199012	Grootfontein	Otjozondjupa	Commercial Farm	69
130101028	Grootfontein	Otjozondjupa	Municipality	83
130101041	Grootfontein	Otjozondjupa	Municipality	93
130101055	Grootfontein	Otjozondjupa	Municipality	81
130101068	Grootfontein	Otjozondjupa	Municipality	88
130601014	Otiwarongo	Otjozondjupa	Municipality	93
130601022	Otiwarongo	Otjozondjupa	Municipality	86
130799015	Tsumkwe	Otjozondjupa	Conservancy	70
130699031	Otiwarongo	Otjozondjupa	Commercial Farm	51
130399011	Okakarara	Otjozondjupa	Conservancy	84
130799025	Tsumkwe	Otjozondjupa	Conservancy	61
130601052	Otiwarongo	Otjozondjupa	Municipality	93
130699065	Otiwarongo	Otjozondjupa	Settlement	87
130601070	Otiwarongo	Otjozondjupa	Municipality	96
130601080	Otiwarongo	Otjozondjupa	Municipality	93
130601094	Otiwarongo	Otjozondjupa	Municipality	102
130601107	Otiwarongo	Otjozondjupa	Municipality	92
130601120	Otiwarongo	Otjozondjupa	Municipality	80
130601133	Otiwarongo	Otjozondjupa	Municipality	88
130699148	Otiwarongo	Otjozondjupa	Settlement	85
130399020	Okakarara	Otjozondjupa	Conservancy	71
130399035	Okakarara	Otjozondjupa	Conservancy	85
130399051	Okakarara	Otjozondjupa	Conservancy	60
130301066	Okakarara	Otjozondjupa	Town	91
130301080	Okakarara	Otjozondjupa	Town	75
130399095	Okakarara	Otjozondjupa	Conservancy	88
130501023	Otavi	Otjozondjupa	Town	100
130501036	Otavi	Otjozondjupa	Town	81
130799031	Tsumkwe	Otjozondjupa	Conservancy	65
130799048	Tsumkwe	Otjozondjupa	Communal Land	85
130799065	Tsumkwe	Otjozondjupa	Conservancy	83
130399119	Okakarara	Otjozondjupa	Conservancy	71
130301134	Okakarara	Otjozondjupa	Town	80
130399150	Okakarara	Otjozondjupa	Conservancy	79
130399166	Okakarara	Otjozondjupa	Conservancy	80
130101117	Grootfontein	Otjozondjupa	Municipality	80
130101133	Grootfontein	Otjozondjupa	Municipality	86
130199150	Grootfontein	Otjozondjupa	Commercial Farm	65
130599069	Otavi	Otjozondjupa	Commercial Farm	52
130599084	Otavi	Otjozondjupa	Settlement	87
130601160	Otiwarongo	Otjozondjupa	Municipality	99

Enumeration Area Number	Constituency	Region name	ea_subt	hh_count
130601173	Otiwarongo	Otjozondjupa	Municipality	70
130601187	Otiwarongo	Otjozondjupa	Municipality	95
090301004	Gobabis	Omaheke	Municipality	84
090301010	Gobabis	Omaheke	Municipality	80
090301016	Gobabis	Omaheke	Municipality	88
090301022	Gobabis	Omaheke	Municipality	101
090301028	Gobabis	Omaheke	Municipality	108
090301033	Gobabis	Omaheke	Municipality	99
090399039	Gobabis	Omaheke	Commercial / Resettlement Farm	61
090301047	Gobabis	Omaheke	Municipality	88
090301052	Gobabis	Omaheke	Municipality	91
090301058	Gobabis	Omaheke	Municipality	99
090301064	Gobabis	Omaheke	Municipality	100
090301070	Gobabis	Omaheke	Municipality	87
090301075	Gobabis	Omaheke	Municipality	99
090301081	Gobabis	Omaheke	Municipality	106
090301087	Gobabis	Omaheke	Municipality	90
090301092	Gobabis	Omaheke	Municipality	90
090301098	Gobabis	Omaheke	Municipality	102
090301103	Gobabis	Omaheke	Municipality	86
090301109	Gobabis	Omaheke	Municipality	95
090301115	Gobabis	Omaheke	Municipality	90
090301121	Gobabis	Omaheke	Municipality	84
090799007	Otjombinde	Omaheke	Communal Land	85
090799015	Otjombinde	Omaheke	Commercial Farm	59
090799024	Otjombinde	Omaheke	Commercial Farm	62
090601002	Otjinene	Omaheke	Village	80
090299002	Epukiro	Omaheke	Communal Land	83
090299009	Epukiro	Omaheke	Communal Land	73
090499004	Kalahari	Omaheke	Settlement	76
090499006	Kalahari	Omaheke	Commercial Farm	63
090299015	Epukiro	Omaheke	Communal Land	79
090601009	Otjinene	Omaheke	Village	102
090499016	Kalahari	Omaheke	Settlement	68
090499025	Kalahari	Omaheke	Commercial Farm	65
090199008	Aminius	Omaheke	Communal Land	81
090299018	Epukiro	Omaheke	Settlement	83
090499033	Kalahari	Omaheke	Settlement	73
090599007	Okorukambe	Omaheke	Commercial / Resettlement Farm	60
090499037	Kalahari	Omaheke	Commercial Farm	56
090199019	Aminius	Omaheke	Communal Land	78
090499039	Kalahari	Omaheke	Settlement	75

Enumeration Area Number	Constituency	Region name	ea_subt	hh_count
090599018	Okorukambe	Omaheke	Commercial / Resettle- ment Farm	59
090601014	Otjinene	Omaheke	Village	94
090601016	Otjinene	Omaheke	Village	81
090699022	Otjinene	Omaheke	Communal Land	80
090699028	Otjinene	Omaheke	Communal Land	80
090601035	Otjinene	Omaheke	Village	79
090699041	Otjinene	Omaheke	Communal Land	80
090199027	Aminius	Omaheke	Communal Land	86
090199035	Aminius	Omaheke	Communal Land	81
090199043	Aminius	Omaheke	Commercial Farm	63
090199050	Aminius	Omaheke	Settlement	77
090199057	Aminius	Omaheke	Communal Land	82
090599024	Okorukambe	Omaheke	Settlement	73
090599032	Okorukambe	Omaheke	Commercial / Resettlement Farm	63
090599040	Okorukambe	Omaheke	Settlement	70
090301123	Gobabis	Omaheke	Municipality	90
090301129	Gobabis	Omaheke	Municipality	92
090301135	Gobabis	Omaheke	Municipality	95
090301141	Gobabis	Omaheke	Municipality	85
090501049	Okorukambe	Omaheke	Village	79
090599054	Okorukambe	Omaheke	Commercial Farm	62
090599062	Okorukambe	Omaheke	Commercial Farm	65
090499051	Kalahari	Omaheke	Commercial Farm	60
090499059	Kalahari	Omaheke	Commercial Farm	62
090499068	Kalahari	Omaheke	Commercial Farm	54
090199065	Aminius	Omaheke	Settlement	79
090199072	Aminius	Omaheke	Commercial Farm	65
090199080	Aminius	Omaheke	Commercial Farm	55
090199088	Aminius	Omaheke	Communal Land	82
090799040	Otjombinde	Omaheke	Communal Land	81
090799048	Otjombinde	Omaheke	Settlement	77
090799055	Otjombinde	Omaheke	Commercial Farm	51
090699046	Otjinene	Omaheke	Communal Land	74
090699053	Otjinene	Omaheke	Communal Land	79
090699060	Otjinene	Omaheke	Communal Land	79
090299033	Epukiro	Omaheke	Communal Land	78
060301019	Katutura East	Khomas	Municipality	86
060301038	Katutura East	Khomas	Municipality	100
060601001	Samora Machel	Khomas	Municipality	94
060601022	Samora Machel	Khomas	Municipality	93
060601042	Samora Machel	Khomas	Municipality	100
060601062	Samora Machel	Khomas	Municipality	90

Enumeration Area Number	Constituency	Region name	ea_subt	hh_count
060601082	Samora Machel	Khomas	Municipality	93
060601102	Samora Machel	Khomas	Municipality	96
060601122	Samora Machel	Khomas	Municipality	99
060601142	Samora Machel	Khomas	Municipality	99
060601162	Samora Machel	Khomas	Municipality	98
060601181	Samora Machel	Khomas	Municipality	93
060601201	Samora Machel	Khomas	Municipality	96
060601221	Samora Machel	Khomas	Municipality	98
060601241	Samora Machel	Khomas	Municipality	98
060601261	Samora Machel	Khomas	Municipality	99
060601281	Samora Machel	Khomas	Municipality	95
060601302	Samora Machel	Khomas	Municipality	93
060601322	Samora Machel	Khomas	Municipality	112
060601342	Samora Machel	Khomas	Municipality	98
060601363	Samora Machel	Khomas	Municipality	96
060501009	Moses//Garob	Khomas	Municipality	90
060501030	Moses//Garob	Khomas	Municipality	90
060501051	Moses//Garob	Khomas	Municipality	94
060501072	Moses//Garob	Khomas	Municipality	95
060501093	Moses//Garob	Khomas	Municipality	92
060501114	Moses//Garob	Khomas	Municipality	91
060501135	Moses//Garob	Khomas	Municipality	95
060501155	Moses//Garob	Khomas	Municipality	101
060501175	Moses//Garob	Khomas	Municipality	95
060501196	Moses//Garob	Khomas	Municipality	96
060501217	Moses//Garob	Khomas	Municipality	89
060501238	Moses//Garob	Khomas	Municipality	92
060501259	Moses//Garob	Khomas	Municipality	92
060501280	Moses//Garob	Khomas	Municipality	86
060501301	Moses//Garob	Khomas	Municipality	85
060501323	Moses//Garob	Khomas	Municipality	90
060701020	Tobias Hainyeko	Khomas	Municipality	90
060701041	Tobias Hainyeko	Khomas	Municipality	96
060701062	Tobias Hainyeko	Khomas	Municipality	86
060701083	Tobias Hainyeko	Khomas	Municipality	93
060701146	Tobias Hainyeko	Khomas	Municipality	86
060701165	Tobias Hainyeko	Khomas	Municipality	103
060701186	Tobias Hainyeko	Khomas	Municipality	91
060701207	Tobias Hainyeko	Khomas	Municipality	96
061001009	Windhoek West	Khomas	Municipality	96
061001028	Windhoek West	Khomas	Municipality	87
061001046	Windhoek West	Khomas	Municipality	104
061001064	Windhoek West	Khomas	Municipality	117
061001083	Windhoek West	Khomas	Municipality	103

Enumeration Area Number	Constituency	Region name	ea_subt	hh_count
061001103	Windhoek West	Khomas	Municipality	105
061001121	Windhoek West	Khomas	Municipality	192
061001140	Windhoek West	Khomas	Municipality	99
061001159	Windhoek West	Khomas	Municipality	105
061001178	Windhoek West	Khomas	Municipality	92
060999003	Windhoek Rural	Khomas	Commercial Farm	60
060901024	Windhoek Rural	Khomas	Municipality	91
060901047	Windhoek Rural	Khomas	Municipality	95
060999070	Windhoek Rural	Khomas	Commercial Farm	62
060901091	Windhoek Rural	Khomas	Municipality	99
060999115	Windhoek Rural	Khomas	Commercial Farm	63
060999142	Windhoek Rural	Khomas	Settlement	60
060901167	Windhoek Rural	Khomas	Municipality	99
060999192	Windhoek Rural	Khomas	Commercial Farm	56
060201007	Katutura Central	Khomas	Municipality	116
060201025	Katutura Central	Khomas	Municipality	110
060201043	Katutura Central	Khomas	Municipality	81
060201062	Katutura Central	Khomas	Municipality	116
060201080	Katutura Central	Khomas	Municipality	101
060401019	Khomasdal	Khomas	Municipality	103
060401037	Khomasdal	Khomas	Municipality	94
060401055	Khomasdal	Khomas	Municipality	97
060401074	Khomasdal	Khomas	Municipality	99
060401092	Khomasdal	Khomas	Municipality	99
060401111	Khomasdal	Khomas	Municipality	109
060401130	Khomasdal	Khomas	Municipality	92
060401146	Khomasdal	Khomas	Municipality	122
060401164	Khomasdal	Khomas	Municipality	94
060401181	Khomasdal	Khomas	Municipality	120
060801001	Windhoek East	Khomas	Municipality	99
060801020	Windhoek East	Khomas	Municipality	105
060801038	Windhoek East	Khomas	Municipality	122
060801057	Windhoek East	Khomas	Municipality	96
060801077	Windhoek East	Khomas	Municipality	93
060801096	Windhoek East	Khomas	Municipality	94
060801116	Windhoek East	Khomas	Municipality	90
060101001	John Pandeni	Khomas	Municipality	92
060101022	John Pandeni	Khomas	Municipality	109
060101042	John Pandeni	Khomas	Municipality	101
060101061	John Pandeni	Khomas	Municipality	104
060801137	Windhoek East	Khomas	Municipality	72
140699001	Kongola	Zambezi	National Park	52
140501005	Katima Mulilo Urban	Zambezi	Town	102
140199002	Judias Lyabboloma	Zambezi	National Park	56

Enumeration Area Number	Constituency	Region name	ea_subt	hh_count
140899007	Sibbinda	Zambezi	Communal Land	83
140299013	Kabbe North	Zambezi	Communal Land	71
140899020	Sibbinda	Zambezi	Communal Land	79
140501022	Katima Mulilo Urban	Zambezi	Town	88
140899046	Sibbinda	Zambezi	Communal Land	70
140799002	Linyanti	Zambezi	Communal Land	84
140799006	Linyanti	Zambezi	Communal Land	83
140501043	Katima Mulilo Urban	Zambezi	Town	91
140799012	Linyanti	Zambezi	Communal Land	75
140799027	Linyanti	Zambezi	Communal Land	78
140199012	Judias Lyabopoloma	Zambezi	National Park	60
140199022	Judias Lyabopoloma	Zambezi	Communal Land	55
140501054	Katima Mulilo Urban	Zambezi	Town	82
140501068	Katima Mulilo Urban	Zambezi	Town	89
140501080	Katima Mulilo Urban	Zambezi	Town	96
140501094	Katima Mulilo Urban	Zambezi	Town	77
140501108	Katima Mulilo Urban	Zambezi	Town	93
140299020	Kabbe North	Zambezi	Communal Land	60
140699019	Kongola	Zambezi	Conservancy	55
140499018	Katima Mulilo Rural	Zambezi	Settlement	71
140499029	Katima Mulilo Rural	Zambezi	Communal Land	73
140499044	Katima Mulilo Rural	Zambezi	Communal Land	71
140499059	Katima Mulilo Rural	Zambezi	Conservancy	79
140501123	Katima Mulilo Urban	Zambezi	Town	70
140501137	Katima Mulilo Urban	Zambezi	Town	75
140501151	Katima Mulilo Urban	Zambezi	Town	89
140501164	Katima Mulilo Urban	Zambezi	Town	84
140499077	Katima Mulilo Rural	Zambezi	Communal Land	77
140499092	Katima Mulilo Rural	Zambezi	Communal Land	73
140499107	Katima Mulilo Rural	Zambezi	Communal Land	74
140499123	Katima Mulilo Rural	Zambezi	Conservancy	75
140499138	Katima Mulilo Rural	Zambezi	Conservancy	75
140499154	Katima Mulilo Rural	Zambezi	Communal Land	65
140199048	Judias Lyabopoloma	Zambezi	National Park	59
140199069	Judias Lyabopoloma	Zambezi	Communal Land	52
140799039	Linyanti	Zambezi	Communal Land	86
140799054	Linyanti	Zambezi	Communal Land	72
140799069	Linyanti	Zambezi	Communal Land	77
140899062	Sibbinda	Zambezi	Communal Land	74
140899076	Sibbinda	Zambezi	Communal Land	79
140899092	Sibbinda	Zambezi	Communal Land	80
140899107	Sibbinda	Zambezi	Communal Land	77
140299051	Kabbe North	Zambezi	Communal Land	77
140299069	Kabbe North	Zambezi	Conservancy	60

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140299087	Kabbe North	Zambezi	Communal Land	69
140299103	Kabbe North	Zambezi	Conservancy	72
140399048	Kabbe South	Zambezi	Conservancy	62
140399066	Kabbe South	Zambezi	Communal Land	73
140399082	Kabbe South	Zambezi	Communal Land	58
140699051	Kongola	Zambezi	Conservancy	55
140699071	Kongola	Zambezi	Conservancy	50
110299007	Okatana	Oshana	Communal Land	81
110299021	Okatana	Oshana	Communal Land	75
110299035	Okatana	Oshana	Communal Land	87
110201048	Okatana	Oshana	Town	84
110299061	Okatana	Oshana	Communal Land	79
110601011	Ondangwa Urban	Oshana	Town	87
110601024	Ondangwa Urban	Oshana	Town	72
110601037	Ondangwa Urban	Oshana	Town	90
110601049	Ondangwa Urban	Oshana	Town	94
110601062	Ondangwa Urban	Oshana	Town	82
110601074	Ondangwa Urban	Oshana	Town	90
110601087	Ondangwa Urban	Oshana	Town	88
110701011	Ongwediva	Oshana	Town	78
110799024	Ongwediva	Oshana	Communal Land	78
110799037	Ongwediva	Oshana	Communal Land	85
110799050	Ongwediva	Oshana	Communal Land	85
110701063	Ongwediva	Oshana	Town	95
110701075	Ongwediva	Oshana	Town	98
110701087	Ongwediva	Oshana	Town	102
110701100	Ongwediva	Oshana	Town	90
110199001	Okaku	Oshana	Communal Land	81
110199015	Okaku	Oshana	Communal Land	78
110199029	Okaku	Oshana	Communal Land	71
110199043	Okaku	Oshana	Communal Land	80
110199057	Okaku	Oshana	Communal Land	71
110599011	Ondangwa Rural	Oshana	Communal Land	81
110599025	Ondangwa Rural	Oshana	Communal Land	73
111099009	Uukwiyu	Oshana	Communal Land	81
111099022	Uukwiyu	Oshana	Communal Land	83
110499002	Ompundja	Oshana	Communal Land	87
110599036	Ondangwa Rural	Oshana	Communal Land	71
111199014	Uuvudhiya	Oshana	Communal Land	79
110499009	Ompundja	Oshana	Communal Land	85
110399008	Okatyali	Oshana	Communal Land	72
110701118	Ongwediva	Oshana	Town	85
110701131	Ongwediva	Oshana	Town	88
110701144	Ongwediva	Oshana	Town	98

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110701157	Ongwediva	Oshana	Town	88
110601100	Ondangwa Urban	Oshana	Town	104
110601113	Ondangwa Urban	Oshana	Town	81
110601126	Ondangwa Urban	Oshana	Town	83
110299069	Okatana	Oshana	Communal Land	81
110799162	Ongwediva	Oshana	Communal Land	74
110599051	Ondangwa Rural	Oshana	Settlement	73
11199028	Uuvudhiya	Oshana	Communal Land	74
110901009	Oshakati West	Oshana	Town	83
110901021	Oshakati West	Oshana	Town	84
110901033	Oshakati West	Oshana	Town	92
110901045	Oshakati West	Oshana	Town	109
110901058	Oshakati West	Oshana	Town	94
110901070	Oshakati West	Oshana	Town	87
110901084	Oshakati West	Oshana	Town	89
110901096	Oshakati West	Oshana	Town	97
110901109	Oshakati West	Oshana	Town	86
110999122	Oshakati West	Oshana	Communal Land	81
110801002	Oshakati East	Oshana	Town	105
110801015	Oshakati East	Oshana	Town	78
110801028	Oshakati East	Oshana	Town	85
110801040	Oshakati East	Oshana	Town	91
110801052	Oshakati East	Oshana	Town	110
110801064	Oshakati East	Oshana	Town	94
110801076	Oshakati East	Oshana	Town	100
110801089	Oshakati East	Oshana	Town	90
110801102	Oshakati East	Oshana	Town	88
110801116	Oshakati East	Oshana	Town	90
110801129	Oshakati East	Oshana	Town	94
110801141	Oshakati East	Oshana	Town	92
110801153	Oshakati East	Oshana	Town	88
110899167	Oshakati East	Oshana	Communal Land	82
110899182	Oshakati East	Oshana	Communal Land	78
100899001	Oshikuku	Omusati	Communal Land	62
101299006	Tsandi	Omusati	Communal Land	82
100499005	Ogongo	Omusati	Communal Land	81
100199005	Anamulenge	Omusati	Communal Land	79
100699005	Okalongo	Omusati	Communal Land	78
100199006	Anamulenge	Omusati	Communal Land	79
100799009	Onesi	Omusati	Communal Land	71
101099022	Outapi	Omusati	Communal Land	70
100699009	Okalongo	Omusati	Communal Land	63
101199020	Ruacana	Omusati	Communal Land	63
100299011	Elim	Omusati	Communal Land	79

Enumeration Area Number	Constituency	Region name	ea_subt	hh_count
100699014	Okalongo	Omusati	Communal Land	73
100799018	Onesi	Omusati	Communal Land	73
100299013	Elim	Omusati	Communal Land	79
101299030	Tsandi	Omusati	Communal Land	76
100999022	Otamanzi	Omusati	Communal Land	79
101001048	Outapi	Omusati	Town	100
101299033	Tsandi	Omusati	Communal Land	71
100599040	Okahao	Omusati	Communal Land	70
100299017	Elim	Omusati	Communal Land	80
101099061	Outapi	Omusati	Communal Land	86
100499018	Ogongo	Omusati	Communal Land	80
101199046	Ruacana	Omusati	Communal Land	93
100799036	Onesi	Omusati	Communal Land	71
100199021	Anamulenge	Omusati	Communal Land	72
100999037	Otamanzi	Omusati	Communal Land	75
101299061	Tsandi	Omusati	Communal Land	82
101199058	Ruacana	Omusati	Communal Land	67
100699031	Okalongo	Omusati	Settlement	75
100999040	Otamanzi	Omusati	Communal Land	69
101299073	Tsandi	Omusati	Communal Land	75
101001094	Outapi	Omusati	Town	102
100801040	Oshikuku	Omusati	Town	97
101199077	Ruacana	Omusati	Communal Land	62
100699049	Okalongo	Omusati	Communal Land	79
100699051	Okalongo	Omusati	Communal Land	76
101199083	Ruacana	Omusati	Communal Land	62
100599071	Okahao	Omusati	Communal Land	79
101199088	Ruacana	Omusati	Communal Land	70
101099115	Outapi	Omusati	Communal Land	68
101299086	Tsandi	Omusati	Communal Land	77
101199091	Ruacana	Omusati	Communal Land	74
100799061	Onesi	Omusati	Communal Land	75
101099125	Outapi	Omusati	Communal Land	85
101099132	Outapi	Omusati	Communal Land	72
101099137	Outapi	Omusati	Communal Land	81
101299102	Tsandi	Omusati	Communal Land	80
101299104	Tsandi	Omusati	Communal Land	76
100199045	Anamulenge	Omusati	Communal Land	87
100699078	Okalongo	Omusati	Communal Land	76
100801058	Oshikuku	Omusati	Town	103
100399076	Etayi	Omusati	Communal Land	83
100599092	Okahao	Omusati	Communal Land	80
100501095	Okahao	Omusati	Town	112
101199115	Ruacana	Omusati	Communal Land	62

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100599098	Okahao	Omusati	Communal Land	68
101299125	Tsandi	Omusati	Communal Land	75
101099173	Outapi	Omusati	Communal Land	80
100799076	Onesi	Omusati	Communal Land	69
100899069	Oshikuku	Omusati	Communal Land	76
101001186	Outapi	Omusati	Town	93
101001190	Outapi	Omusati	Town	81
100199056	Anamulenge	Omusati	Communal Land	74
020501004	Swakopmund	Erongo	Municipality	97
020601005	Walvis Bay Rural	Erongo	Municipality	92
020601013	Walvis Bay Rural	Erongo	Municipality	80
020601024	Walvis Bay Rural	Erongo	Municipality	109
020501017	Swakopmund	Erongo	Municipality	104
020101005	Arandis	Erongo	Municipality	85
020701013	Walvis Bay Urban	Erongo	Municipality	84
020701023	Walvis Bay Urban	Erongo	Municipality	110
020701033	Walvis Bay Urban	Erongo	Municipality	106
020701044	Walvis Bay Urban	Erongo	Municipality	93
020701055	Walvis Bay Urban	Erongo	Municipality	98
020501032	Swakopmund	Erongo	Municipality	96
020701062	Walvis Bay Urban	Erongo	Municipality	108
020701064	Walvis Bay Urban	Erongo	Municipality	86
020601043	Walvis Bay Rural	Erongo	Municipality	93
020601049	Walvis Bay Rural	Erongo	Municipality	85
020699053	Walvis Bay Rural	Erongo	National Park	86
020501062	Swakopmund	Erongo	Municipality	80
020601065	Walvis Bay Rural	Erongo	Municipality	98
020601075	Walvis Bay Rural	Erongo	Municipality	106
020101017	Arandis	Erongo	Municipality	93
020101028	Arandis	Erongo	Municipality	93
020501067	Swakopmund	Erongo	Municipality	84
020501079	Swakopmund	Erongo	Municipality	107
020501090	Swakopmund	Erongo	Municipality	80
020501102	Swakopmund	Erongo	Municipality	88
020501113	Swakopmund	Erongo	Municipality	107
020501124	Swakopmund	Erongo	Municipality	80
020501135	Swakopmund	Erongo	Municipality	102
020501146	Swakopmund	Erongo	Municipality	91
020701078	Walvis Bay Urban	Erongo	Municipality	99
020501149	Swakopmund	Erongo	Municipality	74
020501153	Swakopmund	Erongo	Municipality	113
020101035	Arandis	Erongo	Town	86
020701092	Walvis Bay Urban	Erongo	Municipality	106
020501168	Swakopmund	Erongo	Municipality	79

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020501180	Swakopmund	Erongo	Municipality	84
020501191	Swakopmund	Erongo	Municipality	93
020501202	Swakopmund	Erongo	Municipality	75
020501212	Swakopmund	Erongo	Municipality	91
020501223	Swakopmund	Erongo	Municipality	83
020501235	Swakopmund	Erongo	Municipality	88
020501246	Swakopmund	Erongo	Municipality	88
020501259	Swakopmund	Erongo	Municipality	81
020501271	Swakopmund	Erongo	Municipality	97
020501282	Swakopmund	Erongo	Municipality	78
020501294	Swakopmund	Erongo	Municipality	107
020501306	Swakopmund	Erongo	Municipality	98
020501318	Swakopmund	Erongo	Municipality	70
020501330	Swakopmund	Erongo	Municipality	91
020601102	Walvis Bay Rural	Erongo	Municipality	108
020701102	Walvis Bay Urban	Erongo	Municipality	97
020701113	Walvis Bay Urban	Erongo	Municipality	95
020701124	Walvis Bay Urban	Erongo	Municipality	83
020701135	Walvis Bay Urban	Erongo	Municipality	97
020701146	Walvis Bay Urban	Erongo	Municipality	110
020701156	Walvis Bay Urban	Erongo	Municipality	92
020701168	Walvis Bay Urban	Erongo	Municipality	96
020701178	Walvis Bay Urban	Erongo	Municipality	92
020601107	Walvis Bay Rural	Erongo	Municipality	79
020601118	Walvis Bay Rural	Erongo	Municipality	78
020601130	Walvis Bay Rural	Erongo	Municipality	80
020601141	Walvis Bay Rural	Erongo	Municipality	78
020601152	Walvis Bay Rural	Erongo	Municipality	102
020601164	Walvis Bay Rural	Erongo	Municipality	90
020601175	Walvis Bay Rural	Erongo	Municipality	107
020601186	Walvis Bay Rural	Erongo	Municipality	85
020101039	Arandis	Erongo	Municipality	93
020101050	Arandis	Erongo	Municipality	84
020101061	Arandis	Erongo	Town	91
020401001	Omaruru	Erongo	Municipality	99
020499013	Omaruru	Erongo	Commercial Farm	68
020401025	Omaruru	Erongo	Municipality	95
020401036	Omaruru	Erongo	Municipality	105
020401048	Omaruru	Erongo	Municipality	90
020499062	Omaruru	Erongo	Commercial / Resettlement Farm	64
020301013	Karibib	Erongo	Town	87
020301025	Karibib	Erongo	Town	88
020301036	Karibib	Erongo	Town	76

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020399051	Karibib	Erongo	Commercial Farm	49
020301065	Karibib	Erongo	Town	109
020301078	Karibib	Erongo	Town	70
020301091	Karibib	Erongo	Town	87
020299004	Daures	Erongo	Conservancy	73
020299017	Daures	Erongo	Communal Land	62
020299031	Daures	Erongo	Communal Land	57
020299045	Daures	Erongo	Settlement	67
020299059	Daures	Erongo	Settlement	73
020299072	Daures	Erongo	Settlement	76
020299086	Daures	Erongo	Communal Land	83
020299100	Daures	Erongo	Communal Land	71
020299113	Daures	Erongo	Communal Land	83
020601195	Walvis Bay Rural	Erongo	Municipality	84
020501345	Swakopmund	Erongo	Municipality	102
020399115	Karibib	Erongo	Commercial Farm	75
050701008	Nkurenkuru	Kavango West	Town	98
050799017	Nkurenkuru	Kavango West	Communal Land	81
050701026	Nkurenkuru	Kavango West	Town	78
050299005	Mankumpi	Kavango West	Communal Land	83
050899006	Tondoro	Kavango West	Communal Land	82
050899015	Tondoro	Kavango West	Communal Land	88
050599003	Ncamagoro	Kavango West	Communal Land	80
050499004	Musese	Kavango West	Communal Land	82
050399002	Mpungu	Kavango West	Settlement	89
050399011	Mpungu	Kavango West	Communal Land	80
050399020	Mpungu	Kavango West	Communal Land	84
050499015	Musese	Kavango West	Communal Land	82
050399026	Mpungu	Kavango West	Communal Land	88
050699008	Ncuncuni	Kavango West	Communal Land	84
050299008	Mankumpi	Kavango West	Settlement	71
050199013	Kapako	Kavango West	Communal Land	89
050199022	Kapako	Kavango West	Communal Land	87
050199030	Kapako	Kavango West	Communal Land	85
050599014	Ncamagoro	Kavango West	Communal Land	85
050499019	Musese	Kavango West	Communal Land	82
050299010	Mankumpi	Kavango West	Communal Land	81
050701034	Nkurenkuru	Kavango West	Town	90
020401048	Omaruru	Erongo	Municipality	90
050799043	Nkurenkuru	Kavango West	Communal Land	86
050699019	Ncuncuni	Kavango West	Communal Land	81
050699029	Ncuncuni	Kavango West	Communal Land	70
050599025	Ncamagoro	Kavango West	Communal Land	82
050499029	Musese	Kavango West	Communal Land	80

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050499038	Musese	Kavango West	Communal Land	78
050399039	Mpungu	Kavango West	Communal Land	80
050399049	Mpungu	Kavango West	Communal Land	81
050899038	Tondoro	Kavango West	Communal Land	88
050199039	Kapako	Kavango West	Communal Land	80
050199048	Kapako	Kavango West	Communal Land	87
050199057	Kapako	Kavango West	Communal Land	88
050299015	Mankumpi	Kavango West	Communal Land	85
050899046	Tondoro	Kavango West	Communal Land	70
040299004	Mukwe	Kavango East	Communal Land	85
040299021	Mukwe	Kavango East	Communal Land	81
040299038	Mukwe	Kavango East	Communal Land	70
040299053	Mukwe	Kavango East	Communal Land	73
040499003	Ndonga Linena	Kavango East	Communal Land	69
040399001	Ndiyona	Kavango East	National Park	67
040599007	Rundu Rural	Kavango East	Communal Land	85
040601017	Rundu Urban	Kavango East	Town	86
040199010	Mashare	Kavango East	Communal Land	75
040601034	Rundu Urban	Kavango East	Town	93
040601048	Rundu Urban	Kavango East	Town	70
040399007	Ndiyona	Kavango East	Communal Land	64
040601066	Rundu Urban	Kavango East	Town	91
040601080	Rundu Urban	Kavango East	Town	101
040601095	Rundu Urban	Kavango East	Town	93
040601109	Rundu Urban	Kavango East	Town	78
040601124	Rundu Urban	Kavango East	Town	94
040601139	Rundu Urban	Kavango East	Town	95
040601154	Rundu Urban	Kavango East	Town	87
040601169	Rundu Urban	Kavango East	Town	87
040601184	Rundu Urban	Kavango East	Town	71
040601199	Rundu Urban	Kavango East	Town	78
040399018	Ndiyona	Kavango East	Communal Land	65
040199024	Mashare	Kavango East	Communal Land	70
040299073	Mukwe	Kavango East	National Park	62
040299090	Mukwe	Kavango East	Communal Land	76
040399025	Ndiyona	Kavango East	Communal Land	66
040499028	Ndonga Linena	Kavango East	Communal Land	84
040199034	Mashare	Kavango East	Communal Land	84
040199052	Mashare	Kavango East	Communal Land	71
040599035	Rundu Rural	Kavango East	Communal Land	86
040601222	Rundu Urban	Kavango East	Town	89
040601237	Rundu Urban	Kavango East	Town	100
040601252	Rundu Urban	Kavango East	Town	92
040601267	Rundu Urban	Kavango East	Town	93

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040601281	Rundu Urban	Kavango East	Town	95
040601297	Rundu Urban	Kavango East	Town	86
040601312	Rundu Urban	Kavango East	Town	82
040601327	Rundu Urban	Kavango East	Town	87
030499001	Mariental Rural	Hardap	Commercial Farm	66
030499008	Mariental Rural	Hardap	Commercial / Resettlement Farm	60
030401016	Mariental Rural	Hardap	Village	71
030499023	Mariental Rural	Hardap	Commercial Farm	56
030499030	Mariental Rural	Hardap	Commercial / Resettlement Farm	63
030401037	Mariental Rural	Hardap	Municipality	74
030401045	Mariental Rural	Hardap	Village	81
030501002	Mariental Urban	Hardap	Municipality	96
030501008	Mariental Urban	Hardap	Municipality	90
030599015	Mariental Urban	Hardap	Commercial Farm	62
030599023	Mariental Urban	Hardap	Commercial Farm	60
030501029	Mariental Urban	Hardap	Municipality	103
030501034	Mariental Urban	Hardap	Municipality	105
030501040	Mariental Urban	Hardap	Municipality	90
030501045	Mariental Urban	Hardap	Municipality	98
030799001	Rehoboth Rural	Hardap	Commercial Farm	63
030799006	Rehoboth Rural	Hardap	Settlement	75
030601005	Rehoboth East Urban	Hardap	Town	99
030601010	Rehoboth East Urban	Hardap	Town	89
030301001	Gibeon	Hardap	Village	87
030301006	Gibeon	Hardap	Village	85
030399009	Gibeon	Hardap	Communal Land	64
030101011	Aranos	Hardap	Village	93
030101017	Aranos	Hardap	Town	92
030601012	Rehoboth East Urban	Hardap	Town	88
030201006	Daweb	Hardap	Village	94
030699017	Rehoboth East Urban	Hardap	Commercial Farm	54
030601022	Rehoboth East Urban	Hardap	Town	97
030601028	Rehoboth East Urban	Hardap	Town	86
030601033	Rehoboth East Urban	Hardap	Town	97
030601038	Rehoboth East Urban	Hardap	Town	94
030601044	Rehoboth East Urban	Hardap	Town	93
030601049	Rehoboth East Urban	Hardap	Town	96
030601055	Rehoboth East Urban	Hardap	Town	96
030601060	Rehoboth East Urban	Hardap	Town	81
030601066	Rehoboth East Urban	Hardap	Town	85
030601072	Rehoboth East Urban	Hardap	Town	83
030799014	Rehoboth Rural	Hardap	Commercial Farm	58
030299008	Daweb	Hardap	Commercial Farm	42

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030601080	Rehoboth East Urban	Hardap	Town	98
030301022	Gibeon	Hardap	Village	88
030301028	Gibeon	Hardap	Village	76
030399035	Gibeon	Hardap	Commercial Farm	64
030399042	Gibeon	Hardap	Communal Land	73
030201018	Daweb	Hardap	Village	82
030299025	Daweb	Hardap	National Park	66
030799024	Rehoboth Rural	Hardap	Commercial Farm	62
030799032	Rehoboth Rural	Hardap	Commercial Farm	66
030799040	Rehoboth Rural	Hardap	Settlement	69
030799047	Rehoboth Rural	Hardap	Commercial Farm	55
030101025	Aranos	Hardap	Town	82
030199032	Aranos	Hardap	Commercial Farm	61
030199038	Aranos	Hardap	Commercial Farm	64
030801008	Rehoboth West Urban	Hardap	Town	102
030801013	Rehoboth West Urban	Hardap	Town	103
030801018	Rehoboth West Urban	Hardap	Town	96
030801023	Rehoboth West Urban	Hardap	Town	96
030801029	Rehoboth West Urban	Hardap	Town	91
030601081	Rehoboth East Urban	Hardap	Town	90
030501053	Mariental Urban	Hardap	Municipality	91
030601084	Rehoboth East Urban	Hardap	Town	91
030601090	Rehoboth East Urban	Hardap	Town	94
030801033	Rehoboth West Urban	Hardap	Town	87
030801038	Rehoboth West Urban	Hardap	Town	98
030201029	Daweb	Hardap	Village	84
030399046	Gibeon	Hardap	Communal Land	59
030799054	Rehoboth Rural	Hardap	Settlement	82
030799057	Rehoboth Rural	Hardap	Commercial Farm	55
030601095	Rehoboth East Urban	Hardap	Town	82
030799059	Rehoboth Rural	Hardap	Commercial Farm	63
030399053	Gibeon	Hardap	Communal Land	66
030401063	Mariental Rural	Hardap	Municipality	79
030499066	Mariental Rural	Hardap	Commercial / Resettlement Farm	56
030699098	Rehoboth East Urban	Hardap	Commercial Farm	50
030799066	Rehoboth Rural	Hardap	Commercial Farm	67
030799074	Rehoboth Rural	Hardap	Commercial Farm	68
010101001	Nami -- Nus	//Kharas	Town	93
010199006	Nami -- Nus	//Kharas	Commercial Farm	57
010101011	Nami -- Nus	//Kharas	Town	97
010101016	Nami -- Nus	//Kharas	Town	93
010101021	Nami -- Nus	//Kharas	Town	108
010101025	Nami -- Nus	//Kharas	Town	97

Enumeration Area Number	Constituency	Region name	ea_subt	hh_count
010101030	Nami -= Nus	//Kharas	Town	78
010101035	Nami -= Nus	//Kharas	Town	99
010101040	Nami -= Nus	//Kharas	Town	94
010101045	Nami -= Nus	//Kharas	Town	104
010101050	Nami -= Nus	//Kharas	Town	96
010101055	Nami -= Nus	//Kharas	Town	93
010799004	Oranjemund	//Kharas	Settlement	84
010701009	Oranjemund	//Kharas	Town	91
010701014	Oranjemund	//Kharas	Town	93
010799020	Oranjemund	//Kharas	Settlement	84
010799025	Oranjemund	//Kharas	Settlement	71
010701030	Oranjemund	//Kharas	Town	100
010701034	Oranjemund	//Kharas	Town	108
010701039	Oranjemund	//Kharas	Town	90
010799044	Oranjemund	//Kharas	National Park	61
010499003	Karasburg West	//Kharas	Settlement	63
010399005	Karasburg East	//Kharas	Commercial Farm	72
010599004	Keetmanshoop Rural	//Kharas	Commercial Farm	52
010499005	Karasburg West	//Kharas	Settlement	62
010499011	Karasburg West	//Kharas	Settlement	84
010499017	Karasburg West	//Kharas	Settlement	75
010499024	Karasburg West	//Kharas	Settlement	79
010499030	Karasburg West	//Kharas	Commercial / Resettlement Farm	52
010601002	Keetmanshoop Urban	//Kharas	Municipality	97
010601006	Keetmanshoop Urban	//Kharas	Municipality	99
010201004	Berseba	//Kharas	Village	95
010299005	Berseba	//Kharas	Conservancy	73
010601013	Keetmanshoop Urban	//Kharas	Municipality	98
010601015	Keetmanshoop Urban	//Kharas	Municipality	90
010499042	Karasburg West	//Kharas	Settlement	84
010601020	Keetmanshoop Urban	//Kharas	Municipality	88
010399013	Karasburg East	//Kharas	Commercial / Resettlement Farm	61
010201012	Berseba	//Kharas	Village	103
010301017	Karasburg East	//Kharas	Town	91
010499056	Karasburg West	//Kharas	Settlement	63
010299019	Berseba	//Kharas	Communal Land	78
010201024	Berseba	//Kharas	Village	100
010201029	Berseba	//Kharas	Village	90
010299035	Berseba	//Kharas	Communal Land	82
010201041	Berseba	//Kharas	Village	80
010201047	Berseba	//Kharas	Village	96
010399022	Karasburg East	//Kharas	Settlement	60
010301028	Karasburg East	//Kharas	Town	101

Enumeration Area Number	Constituency	Region name	ea_subt	hh_count
010301033	Karasburg East	//Kharas	Town	88
010399039	Karasburg East	//Kharas	Settlement	72
010399046	Karasburg East	//Kharas	Commercial Farm	63
010599009	Keetmanshoop Rural	//Kharas	Commercial / Resettlement Farm	61
010599016	Keetmanshoop Rural	//Kharas	Commercial Farm	65
010599023	Keetmanshoop Rural	//Kharas	Commercial / Resettlement Farm	53
010301052	Karasburg East	//Kharas	Town	99
010601023	Keetmanshoop Urban	//Kharas	Municipality	85
010601027	Keetmanshoop Urban	//Kharas	Municipality	99
010601032	Keetmanshoop Urban	//Kharas	Municipality	101
010601036	Keetmanshoop Urban	//Kharas	Municipality	101
010601041	Keetmanshoop Urban	//Kharas	Municipality	101
010601046	Keetmanshoop Urban	//Kharas	Municipality	82
010601051	Keetmanshoop Urban	//Kharas	Municipality	91
010601056	Keetmanshoop Urban	//Kharas	Municipality	83
010299052	Berseba	//Kharas	Commercial Farm	72
010601064	Keetmanshoop Urban	//Kharas	Municipality	98
010601069	Keetmanshoop Urban	//Kharas	Municipality	95
010499069	Karasburg West	//Kharas	Settlement	82
010601073	Keetmanshoop Urban	//Kharas	Municipality	85
010601078	Keetmanshoop Urban	//Kharas	Municipality	81
010301053	Karasburg East	//Kharas	Town	95
010101057	Nami -- Nus	//Kharas	Town	87
010101062	Nami -- Nus	//Kharas	Town	99
010101066	Nami -- Nus	//Kharas	Town	99
010599027	Keetmanshoop Rural	//Kharas	Commercial / Resettlement Farm	50
010399057	Karasburg East	//Kharas	Commercial Farm	49
010399064	Karasburg East	//Kharas	Conservancy	56
010499074	Karasburg West	//Kharas	Settlement	65
010499080	Karasburg West	//Kharas	Settlement	84
010499087	Karasburg West	//Kharas	Settlement	64
010499093	Karasburg West	//Kharas	Settlement	66
010499100	Karasburg West	//Kharas	Settlement	80
010499105	Karasburg West	//Kharas	Settlement	84
010499111	Karasburg West	//Kharas	Settlement	80
010499118	Karasburg West	//Kharas	Settlement	67
010799052	Oranjemund	//Kharas	Settlement	83
010799058	Oranjemund	//Kharas	Settlement	73
010299059	Berseba	//Kharas	Commercial Farm	63
010299065	Berseba	//Kharas	Commercial Farm	77
010299072	Berseba	//Kharas	Communal Land	74
010601082	Keetmanshoop Urban	//Kharas	Municipality	88
040601267	Rundu Urban	Kavango East	Town	93

Enumeration Area Number	Constituency	Region name	ea_subt	hh_count
010501034	Keetmanshoop Rural	//Kharas	Village	85
010299076	Berseba	//Kharas	Communal Land	61
010701062	Oranjemund	//Kharas	Town	187
010599042	Keetmanshoop Rural	//Kharas	Conservancy	77
010499122	Karasburg West	//Kharas	Settlement	60
120299007	Guinas	Oshikoto	Commercial Farm	52
120299024	Guinas	Oshikoto	Settlement	80
120399002	Nehale lyaMpingana	Oshikoto	Settlement	62
120399018	Nehale lyaMpingana	Oshikoto	Communal Land	81
120399033	Nehale lyaMpingana	Oshikoto	Communal Land	80
120399048	Nehale lyaMpingana	Oshikoto	Communal Land	81
120399063	Nehale lyaMpingana	Oshikoto	Communal Land	81
120399078	Nehale lyaMpingana	Oshikoto	Communal Land	82
120499006	Okankolo	Oshikoto	Communal Land	83
120499021	Okankolo	Oshikoto	Communal Land	81
120499036	Okankolo	Oshikoto	Communal Land	79
120499051	Okankolo	Oshikoto	Communal Land	82
120599005	Olukonda	Oshikoto	Communal Land	78
120599021	Olukonda	Oshikoto	Settlement	83
120599036	Olukonda	Oshikoto	Communal Land	81
120599051	Olukonda	Oshikoto	Settlement	78
120699003	Omuntele	Oshikoto	Communal Land	79
120699018	Omuntele	Oshikoto	Communal Land	83
120699033	Omuntele	Oshikoto	Communal Land	80
120699048	Omuntele	Oshikoto	Communal Land	82
120699062	Omuntele	Oshikoto	Communal Land	79
120699077	Omuntele	Oshikoto	Communal Land	81
120799008	Omuthiyagwiipundi	Oshikoto	Communal Land	80
120799023	Omuthiyagwiipundi	Oshikoto	Communal Land	79
120799038	Omuthiyagwiipundi	Oshikoto	Communal Land	83
120701052	Omuthiyagwiipundi	Oshikoto	Town	94
120799066	Omuthiyagwiipundi	Oshikoto	Communal Land	79
120799080	Omuthiyagwiipundi	Oshikoto	Communal Land	81
120799095	Omuthiyagwiipundi	Oshikoto	Communal Land	81
120799110	Omuthiyagwiipundi	Oshikoto	Communal Land	81
120799125	Omuthiyagwiipundi	Oshikoto	Communal Land	80
120799140	Omuthiyagwiipundi	Oshikoto	Communal Land	80
120899009	Onayena	Oshikoto	Communal Land	81
120899024	Onayena	Oshikoto	Settlement	72
120899039	Onayena	Oshikoto	Communal Land	79
120999004	Oniipa	Oshikoto	Settlement	82
120901018	Oniipa	Oshikoto	Town	98
120999033	Oniipa	Oshikoto	Settlement	94
120999047	Oniipa	Oshikoto	Communal Land	84

Enumeration Area Number	Constituency	Region name	ea_subt	hh_count
120999062	Oniipa	Oshikoto	Communal Land	78
120999076	Oniipa	Oshikoto	Settlement	86
120901091	Oniipa	Oshikoto	Town	98
120999105	Oniipa	Oshikoto	Settlement	80
121099001	Onyaanya	Oshikoto	Settlement	81
121099016	Onyaanya	Oshikoto	Communal Land	82
121099031	Onyaanya	Oshikoto	Communal Land	80
121099046	Onyaanya	Oshikoto	Communal Land	77
121099061	Onyaanya	Oshikoto	Communal Land	82
121099076	Onyaanya	Oshikoto	Communal Land	80
121101007	Tsumeb	Oshikoto	Municipality	99
121101020	Tsumeb	Oshikoto	Municipality	91
121101033	Tsumeb	Oshikoto	Municipality	101
121101046	Tsumeb	Oshikoto	Municipality	94
121101059	Tsumeb	Oshikoto	Municipality	89
121101072	Tsumeb	Oshikoto	Municipality	100
121101086	Tsumeb	Oshikoto	Municipality	87
121101099	Tsumeb	Oshikoto	Municipality	86
121101112	Tsumeb	Oshikoto	Municipality	82
120199006	Eengondi	Oshikoto	Communal Land	80
120199021	Eengondi	Oshikoto	Communal Land	83
120199036	Eengondi	Oshikoto	Communal Land	78
120199051	Eengondi	Oshikoto	Communal Land	82
120199066	Eengondi	Oshikoto	Communal Land	81
120199081	Eengondi	Oshikoto	Communal Land	82

- ¹missing standard errors and IC because of stratum with single sampling unit.
- ²DHS, 2013.
- ³DHS 2013
- ⁴National Planning Commission and World Food Program (2021). *Fill the Nutrient Gap*, Namibia.
- ⁵United Nations, Namibia- UN Joint mission statement. Statement - Namibia mission 09072024 (1).pdf
- ⁶Hellen Likando, IPC Global support unit: https://www.ipcinfo.org/IPC_Namibia_Acute_Food_Insecurity_Apr_Sept%202024_report.pdf
- ⁷WHO/UNICEF latest public health emergency thresholds for the prevalence of wasting, overweight and stunting in children under 5 years, August 2018
- ⁸The prevalence from the 2013 DHS have guided the estimation of GAM prevalence. Factors considered for the estimation include the current situation and the acknowledgement that the samples used for estimation of wasting were insufficient in some regions. The sample size given are sufficient to estimate GAM with sufficient precision.
- ⁹The number of households assumes similarities across all the regions. if this will be different, the number can be adjusted upwards or downwards which will further impact the number of clusters per survey area.
- ¹⁰Myatt M, Khara T, Collins S. *A review of methods to detect cases of severely malnourished children in the community for their admission into community-based therapeutic care programs*. Food Nutr Bull 2006; 27: S7-23 pmid: 17076211.
- ¹¹Mwangome MK, Fegan G, Mbunya R, Prentice AM, Berkley JA. *Reliability and accuracy of anthropometry performed by community health workers among infants under 6 month in rural Kenya*. Trop Med Int Health 2012; 17: 622-9 doi: 10.1111/j.1365-3156.2012.02959.x.
- ¹²World Health Organization (WHO). *2015 Global Reference List of 100 Core Health Indicators*. 2015. http://apps.who.int/iris/bitstream/10665/173589/1/WHO_HIS_HSI_2015.3_eng.pdf
- ¹³Ramesh A, Blanchet K, Ensink JH, Roberts B. *Evidence on the effectiveness of water, sanitation, and hygiene (WASH) interventions on health outcomes in humanitarian crises: a systematic review*. PLoS One. 2015;10(9): e0124688
- ¹⁴Blanchet K, Ramesh A, Frison S, Warren E, Hossain M, Smith J, et al. *Evidence on public health interventions in humanitarian crises*. Lancet. 2017; 390:2287–96
- ¹⁵Blanchet K, Ramesh A, Frison S, Warren E, Hossain M, Smith J, et al. *Evidence on public health interventions in humanitarian crises*. Lancet. 2017; 390:2287–96: e89551.
- ¹⁶*Guidelines on sanitation and health*. Geneva: World Health Organization; 2018. Licence: CC BY-NC-SA 3.0 IGO.
- ¹⁷Hotez, P. J et al, *Helminthic infections: soil-transmitted helminth infections and schistosomiasis, 2006*. Oxford University Press and World Bank.
- ¹⁸<https://www.gavi.org/our-alliance/global-health-development/sustainable-development-goals>, accessed 31st March 2020
- ¹⁹Demissie S, Worku A. *Magnitude and Factors Associated with Malnutrition in Children 6–59 Months of Age in Pastoral Community of Dollo Ado District, Somali Region, Ethiopia*. Sci J Public Health. 2013;1(4):175–83. doi:10.11648/ j.sjph.20130104.12.
- ²⁰World Health Organization. *The global burden of disease: 2004 update*. Geneva: World Health Organization; 2008.
- ²¹Black RE, et al. *Maternal and child undernutrition: global and regional exposures and health consequences*. Lancet. 2008;371:243–60. [PubMed]
- ²²*Sphere handbook*, 2018
- ²³There are no established thresholds for combined GAM prevalence, hence this discussion assumes the thresholds for WHZ.



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