National Food and Nutrition Security Survey

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List of Abbreviations

BMI	Body Mass Index
CAPI	Computer Assisted Personal Interviewing
CI	Confidence Interval
CSI	Coping Strategy Index
GBV	Gender-based violence
GDP	Gross Domestic Product
DAFF	Department of Agriculture, Forestry and Fisheries
DALRRD	Department of Land Reform and Rural Development
DDS	Dietary Diversity Score
DOH	Department of Health
DSD	Department of Social Development
FCS	Food Consumption Score
FGDs	Focus Group Discussions
FNS	Food and Nutrition Security
GAM	Global Acute Malnutrition
GHS	General Household Survey
HDDS	Household Dietary Diversity Score
HEA	Household Economy Approach
HFIAP	Household Food Insecurity Access Prevale
HFIAS	Household Food Insecurity Access Scale
HHS	Household Hunger Scale
HSRC	Human Sciences Research Council
IFSNP	Integrated Food Security and Nutrition Programme
JMP	Joint Monitoring Programme
Kg/Ha	Kilogram Per Hectare
LHZ	Livelihood Zones
MAHFP	Months of Adequate Household Food Provisioning
NFERP	National Food Emergency Relief Programme
NFNSS	National Food and Nutrition Security Survey
NIDS	National Income Dynamic Survey
NISIS	Nation Integrated Social Information System
RDP	Reconstruction and Development Programme

RVAA	Regional Vulnerability Assessment and Analysis
SADC	Southern African Development Community
SAL	Small Area Layers
SAS	Statistical Analyses Systems
SALDRU	Southern Africa Labour Development Research Unit
SANHANES	South African National Health and Nutrition Examination Survey
SAVAC	South Africa Vulnerability Assessment Committee
SOP	Standard Operation Procedure
Stats SA	Statistics South Africa
TLU	Tropical Livestock Units
UNICEF	United Nations International Children's Emergency Fund
VIP	Ventilated Improved Pit
WASH	Water, Sanitation and Hygiene
WFP	World Food Programme
WHO	World Health Organization
WHR	Waist-to-Hip Ratio
ZAOCG	Highveld border open Mixed Income Livelihood Zone
ZANWC	Western Open Access Cattle and Game Farming Livelihood Zone
ZAHMI	Highveld Open Access Mixed Income (ZAHMI) Livelihood Zone

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Disclaimer

This survey is based on the empirical evidence collected from selected Small Area Layers (SALs) within the three districts of Western Cape Province. SAL is the smallest geographical unit usually allocated to a single enumerator during census enumeration. In other words, it constitutes a small piece of land for an enumerator to cover to administer a questionnaire during a census or study (Statistics South Africa). Each of the SALs in this survey had 35 visiting points (Households). The results provide a baseline assessment of the status quo of food and nutrition security in the province. The data was collected more than 8 months after the COVID-19 lockdown measures, a period characterized by much more relaxed restrictive COVID-19 measures. This greatly influenced and changed the picture from what would ordinarily obtain under a normal situation. Whilst this research project has benefited from the valuable insights and input of a Technical Advisory Group (TAG) that provided comments and reviewed the final research report, the ultimate responsibility for the contents therein (including but not limited to unintentional errors, inaccuracies, or omissions) rests with the authors and researchers involved. Users of this research should exercise their judgment and discretion when interpreting the findings and recommendations presented herein.

Executive Summary

Food and nutrition security is one of the fundamental strategic imperatives of the government of South Africa. The right to access sufficient food is firmly entrenched in the Constitution of the Republic of South Africa (Sections 27, 28, and 35). Many policies, programmes, and intervention measures, such as social grant systems (which include child support, school feeding schemes, and farmer support programmes) have been developed and implemented to help improve the food and nutrition security situation at household level in the country. These programmes are reflected in the National Policy on Food and Nutrition Security and the National Food and Nutrition Security Policy Implementation Plan (2018-2023). Despite these efforts, food insecurity is still a reality and a major concern for several million people in South Africa. Strong evidence exists that there are households in South Africa that go to bed on empty stomachs, and others that only eat once or twice a day. In addition, South Africa is reported to be going through a nutrition transition characterised by the double burden of malnutrition manifesting through stunting, wasting and overweight due to the consumption of a nutrient-poor diet. This is in sharp contrast to the fact that South Africa is food secure at a national level. The concentration and distribution households across the various districts within the province that are experiencing food insecurity and malnutrition need to be established as this has been a cause for concern for the Department of Agriculture, Land Reform, and Rural Development (DALRRD) as well as the South African Vulnerability Assessment Committee (SAVAC) which is comprised of various sectors.

To develop intervention measures that are well-targeted and address the root causes of household food and nutrition insecurity, current data at lower geographic levels and contextually relevant scientific evidence are crucial. Accordingly, the DALRRD commissioned a National Food and Nutrition Security Survey (NFNSS) aimed at providing baseline data on the state of food and nutrition security across districts and livelihood zones in South Africa. Further, the survey sought to investigate the link between food security and nutrition as well as assessing the impacts of COVID-19 on household food and nutrition survey (FNS). National surveys on food and nutrition security are needed as they inform the government and policymakers about the actual status of food and nutrition insecurity in a country. This provincial report provides the first ever full-scale baseline assessment of the Food and Nutrition Security Survey (NFNSS) conducted in all six districts of the Western Cape Province. The survey adopted the SAVAC-endorsed methodological framework for measuring food insecurity and assessing vulnerability. The framework combines qualitative and quantitative research dimensions to enhance methodological and data triangulation. Broadly, the framework adopts the food and nutrition security continuum, and the Household Economy Approach (HEA).

Out of the targeted 5 810 visiting points (VPs), 97.3% were found to be valid. Of these valid VPs, 75.3% were successfully realised. This came from a total of 4 035 people who were interviewed. . When weighted, this total represented a population of 5 051 033 South Africans of 18 years of age and older living in the Western Cape Province.

To measure the various aspects of food and nutrition security, a list of internationally recognized food security indicators was used, including the Household Food Insecurity Access Score (HFIAS), Household Hunger Score (HHS), Food Consumption Score (FCS), and the Household Dietary Diversity Score (DDS). The results indicated that many households were food insecure in the Province. The HFIAS showed that less than half (45.3%) of the households were food secure, with the remaining 54.7% of households being food insecure. Furthermore, of those who were food insecure, 17.3% of households experienced severe levels of food insecurity. The HHS showed that over 81% of households experienced little to no hunger, while 13.2% and 5.7% of households experienced moderate hunger and severe hunger, respectively. The FCS and HDDS showed that over 70% and 80% of households, consumed an acceptable amount of food groups across all the districts. The FCS reflected that 10.9% of households consumed poor diets, while 16.2% consumed borderline diets. However, households mostly consumed nutrient-poor food groups such as cereals, condiments, sugars, and oils/fats. There was limited consumption of nutrient-rich food groups such as fruits, pulses, nuts, eggs, fish, and seafood.

The levels of food insecurity did not vary much across districts. Severe food insecurity was more prevalent in the City of Cape Town and Central Karoo District, where 18% and 17%, respectively, of the households, were severely food insecure, and above 5% experienced severe hunger, as determined by HFIAS and HHS. Additionally, households from the City of Cape Town region had poor diets and the lowest dietary diversity, with 5% of the households found to have consumed poor diets. Other districts, namely Cape Winelands, Garden Route, and West Coast, ranged between 15% and 17%, while Overberg (14%) had the lowest proportion of households experiencing severe food insecurity. Severe food insecurity was more prevalent among households headed by young household heads, and among the households in the City of Cape Town, Central Karoo, and Cape Winelands districts.

Household food security status was found to be significantly correlated with demographic (i.e., gender and age of household head/acting head) and socioeconomic factors like access to irrigation, water source, sanitation, social grants, household size, markets, household head/acting head's educational level, and involvement in agricultural production. Overall, the findings demonstrated a strong correlation between social benefits, educational attainment, and employment, which led to better food security outcomes. For instance, as education levels rose, the fraction of households with access to food increased dramatically. Compared to 82.9% of homes headed by persons with tertiary qualifications, only 28.8% of households led by people without formal education were food secure. Farming activities did not show any indication of a significant difference, indicating that the expansion of social protection measures like social grants and the creation of employment opportunities is more important than agricultural activities for the status of food insecurity for urban province like the Western Cape.

Findings reflected that 86.7% of children under 2 years were breastfed at some point in their lives. The provincial prevalence of overall stunting, wasting, and underweight in children aged 0-5 years is 42.4%, 4.2%, and 6.6% respectively, compared to 26.3%, 2.1% and 4.5% in 2012. These results indicate that the proportion of children experiencing acute undernutrition has increased over the past 10 years. The prevalence of stunting however, appears to have doubled and is far higher than anticipated based on findings from other studies. However, the data has been interrogated and confirmed as correct. The authors recommend further exploration of the indicator results to ascertain reasons for the possible deviation from the usual trend. Over the same time period, the combined prevalence of overweight and obesity in adult females has increased slightly from 62.4% to 69.2%, while that of adult males have increased slightly from 43.0% to 44.2%. Across the districts, Central Karoo had highest prevalence of severe stunting (26%), severe wasting (9.3%), and severe underweight (10.8%) compared to other districts, with Overberg (9.6%) having least instances of severe stunting. Among adults, the City of Cape Town and Overberg recorded the highest prevalence of combined overweight and obesity, both at more than 63%, while the Central Karoo reported the highest prevalence of underweight. The nutrition indicators for children were found not to be correlated with the food security status of households, suggesting that nutrition challenges similarly affected members of both food-secure and food-insecure households. There were significant correlations between food security and nutrition indicators for adults.

The findings also demonstrated that the COVID-19 pandemic and the lockdown measures put in place to stop its spread caused significant disruptions in the production and supply channels for food. The largest shock felt by all six districts of the Province was the spike in food costs. Districts of the Central Karoo, Overberg, and Garden Route saw the highest rates of shocks, with 57%, 55%, and 53%, respectively. The biggest proportion of households (41.5%) in the Central Karoo District expressed occasional concern about running out of food before having enough money to purchase additional food. The city of Cape Town and Cape Winelands district also had the highest percentage (17.8% and 16.9%, respectively) of households who reported that their food often ran out and they did not have money to buy more.

Several recommendations have been proposed, and these revolve around strategies to:

- increase incomes of households,
- create employment,
- ensure water security to adapt to the changing climate,
- enhance food safety,

- invest in post-harvest agro-processing and intrinsic land access,
- establish food banks,
- promote domestic food production,
- improve awareness of micro- and macro-nutrient consumption interventions, and
- implement full-scale nutrition-sensitive programmes.

Table A: Western Cape Food and Nutrition Security situation based on selected indicators

DISTRICTS	FOOD SECURITY INDICATORS (%)											
	Household Food Insecurity Access Scale (HFIAS)			Household Hunger Scale (HHS)			Household Dietary Diversity Score (HDDS)			Food Consumption Score (FCS)		
	Food Secure	Mild/ Moderate	Severe	Little/No	Moderate	Severe	Highest	Medium	Lowest	Acceptable	Borderline	Poor
Cape Winelands	42.0	42.0	17.0	81.0	13.0	6.0	84.0	12.0	4.0	72.0	25.0	3.0
Central Karoo	40.0	44.0	17.0	80.0	16.0	5.0	86.0	10.0	4.0	81.0	12.0	7.0
City of Cape Town	47.0	36.0	18.0	81.0	13.0	6.0	83.0	12.0	5.0	73.0	15.0	12.0
Garden Route	41.0	41.0	17.0	80.0	13.0	7.0	84.0	12.0	4.0	72.0	17.0	11.0
Overberg	52.0	34.0	14.0	85.0	12.0	3.0	82.0	14.0	4.0	75.0	13.0	12.0
West Coast	37.0	48.0	15.0	80.0	16.0	4.0	84.0	11.0	5.0	70.0	20.0	10.0
Province	45.3	37.4	17.3	81.1	13.2	5.7	83.3	12.1	4.5	72.8	16.2	10.9

DISTRICTS	NUTRITION INDICATORS (%)											
	STUNTING			WASTING			UNDERWEIGHT			BMI		
	All	Moderate	Severe	All	Moderate	Severe	All	Moderate	Severe	Underweight	Overweight	Obese
Cape Winelands	38.7	19.9	18.8	7.4	1.7	5.7	7.4	1.1	6.3	9.5	23.0	28.5
Central Karoo	49.2	22.7	26.4	13.8	4.5	9.3	22.2	11.5	10.8	15.4	15.5	23.2
City of Cape Town	43.9	22.2	21.7	3.7	0.6	3.1	4.9	2.4	2.6	2.9	26.9	36.6
Garden Route	44.2	17.2	27.0	5.9	0.4	5.6	13.0	4.7	8.4	12.9	19.2	33.4
Overberg	20.5	10.9	9.6	1.0	0.4	0.6	2.1	1.5	0.6	6.2	30.5	32.8
West Coast	46.0	25.8	20.2	0.9	0.8	0.1	12.3	10.7	1.6	5.6	21.8	37.4
Province	42.4	21.1	21.4	4.2	0.8	3.4	6.6	3.0	3.6	5.2	25.3	35.0

Legend

Food Secure,			0.0 - 9.9%
Little/ No Hunger,	Severe/	Mild/	10.0 -19.9%
Highest,	Poor	Moderate/	20.0 -29.9%
Acceptable		Borderline	30.0 -39.9%
			40.0 -49.9%
			50.0% +

1 Introduction

Food security is widely defined as 'a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life' (FAO, 1996). It is one of the strategic imperatives for South Africa. This is expressed in the Constitution, government policy documents, and development plans (e.g., the National Development Plan). The right to have access to sufficient food by all citizens is enshrined in the Constitution of the country. To translate this right into action, government approved the National Policy on Food and Nutrition Security in 2014. Since then, the National Food Security plan has been developed but not fully implemented. However, despite this solid legislative, constitutional, and policy framework for food and nutrition security initiatives, a significant proportion of South Africa's population faces food and nutrition challenges. These challenges include hunger, micronutrient deficiencies, stunting, wasting and obesity. While there is sufficient food to feed everyone in South Africa through domestic food production and food imports, some families and individuals go to bed with empty stomachs (Stats SA, 2019). It has been previously estimated that 13.7 million people have very limited or insufficient access to food in South Africa (Stats SA, 2019). According to recent estimates, the number of people who have insufficient and extremely insufficient access to food increased by 843 080 from 13.7 million to 14.4 million in 2021.

Food security is a multi-dimensional concept[1], which needs to be addressed within the context of various issues in South Africa. These include land reform, employment, agricultural productivity, adequate responses to hazards and shocks, as well as economic lenses which support food security. This requires planning that is adequate, efficient, and effective in addressing the country's vulnerability to food insecurity. Such planning needs to be supported by up-to-date data at lower geographic levels and scientific evidence that is contextually relevant to the realities facing various communities and households in the country. Large-scale surveys, such as the NFNSS, can generate such data and evidence, given its focus on generating data that is representative at the district levels. The NFNSS survey intends to address the following objectives:

1. To provide a baseline assessment of the food and nutrition security situation at households in the respective livelihood zones in Western Cape Province, in terms of:
    a. Availability: to determine food availability at household level.
    b. Access: to determine food access at household level.
    c. Food utilisation: to determine individual food consumption within the household and compile anthropometric measurements.
    d. Food stabilisation: to assess household food stability with respect to food supply, price changes, shocks, and the coping mechanisms.
2. To analyse the link between food security and nutrition and explore reasons for people's vulnerability.
3. To assess the impact of COVID-19 on food security and nutrition at household level in South Africa.
4. To make recommendations for planning and targeting of interventions for food and nutrition security.

1 The four dimensions of food security that are commonly identified are food availability, food access, food utilisation, and stability. These dimensions are hierarchical, with availability necessary but not sufficient to ensure access, while access is, in turn, necessary but not sufficient for effective utilisation (Barrett, 2010).

2 Background

The state of food and nutrition vulnerability in South Africa has been exacerbated by both the economic hardships, which are a result of the high rate of unemployment, and the outbreak of COVID-19 with the associated control measures implemented by the government to contain its spread. As an intervention, the Department of Agriculture Land Reform and Rural Development (DALRRD) has in the past developed and implemented various programmes that are intended to cushion communities from the vulnerability and devastating effects of hunger and poverty. There is, therefore, a need to systematically determine if these government programmes and interventions are having the desired impact of protecting households from exposure to food insecurity. To do this, the DALRRD commissioned a nationwide food security and nutrition survey. The survey seeks to develop a deeper understanding of the state of food security and hunger at household level. Its ultimate objective is to develop targeted programmes and intervention measures that address prevalent problems and is, therefore, likely to yield impactful results.

The DALRRD provides the secretariat for, and chairs, the South African Vulnerability Assessment Committee (SAVAC). The committee exists as a multi-stakeholder forum for organising the development and maintenance of a well-coordinated information system for classifying, measuring, monitoring, and forecasting food insecurity and vulnerability levels in the country. Prior to the National Food and Nutrition Security Survey, SAVAC conducted baseline assessments to determine the *status quo* of livelihoods, food, and nutrition security in localised geographical areas for informed planning and targeting of interventions. The initial baseline assessments were conducted in 19 of the 119 Livelihood Zones of South Africa. However, for the information system to be fully functional, there was a realisation of the need to undertake a national baseline against which the national vulnerability forecasts and monitoring surveys can be based.

In this regard, SAVAC endorsed the need for a national food, nutrition, and security assessment that would enable the country to have a complete baseline data set of open access, exclusive access, and urban areas to provide a complete overview of the food and nutrition security situation at municipal, district, and provincial levels. Such a national baseline is meant to guide planning, including design of intervention strategies for the National Food and Nutrition Security Plan (NFNSP).

In this regard, the national report provides the first ever full-scale baseline assessment of National Food and Nutrition Security Survey (NFNSS) conducted in all the districts across the nine provinces of South Africa. This report provides the results of the Western Cape provincial survey. The survey seeks to outline the first step towards the development of a multi-dimensional index to assess countries' vulnerability to food insecurity across all the four food security dimensions. It supplements the South Africa Demographic and Health Survey (SADHS) by updating the provincial level data that it present. A notable deviation of this report from the General Household Surveys (GHS) is that the GHS has been covering approximately 32 000 households annually since 2002, and it does not include nutrition indicators. It only focusses on the experience of hunger and access to food. In most countries, food and nutritional security assessments provide estimates which are representative at administrative levels such as province, districts, and sub district or by rural/ urban divide, or for both rural and urban as defined by the livelihood zones.

3 Methodological Matrix

The survey adopted the SAVAC endorsed methodological framework for measuring food insecurity and vulnerability. The framework combines qualitative and quantitative research dimensions to enhance methodological and data triangulation. Broadly, the framework adopts the food security continuum and the Household Economy Approach (HEA).

3.1 Food Security Continuum

The food security continuum builds on the iterative understanding of food insecurity as a phenomenon. It brings convergence to the economic, social, environmental, and political aspects of food insecurity and, by focusing on both household and individual experience to food security. Figure 1 provides an overview of the food security continuum.

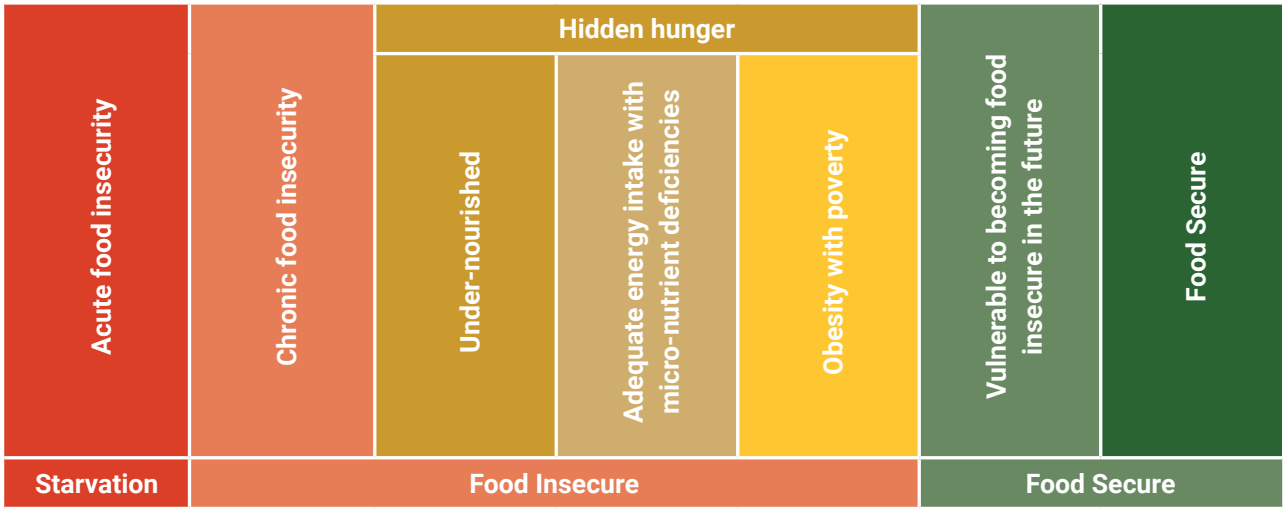


Figure 1: *Food Security Continuum (Hendriks, 2016)*

A set of indicators to monitor food security and nutrition were considered, among which were HFIAS, HHS, DDS, and anthropometric measurements to determine the number of households that are food insecure and using various categorizations in the Food Security Continuum.

3.2 Indicators of Food and Nutrition Security Measurement

The household food and nutrition security (FNS) levels were measured using different indicators. The multi-dimensional nature of FNS makes it difficult to adequately capture all its dimensions using only one indicator. There is currently no perfect single indicator of FNS and, instead, several complementary indicators - each focusing on one or more of the four dimensions of FNS (i.e., availability, access, utilization or nutrition, and stability) - exist (Hendriks et al., 2016). The food availability dimension refers to the availability of sufficient quantities of food of appropriate quality, supplied through domestic production, imports or donations. The focus of this report is is limited to food production activities. Food access is about households or individuals having adequate resources to acquire, in a socially acceptable manner, appropriate foods for a nutritious diet. The food utilization pillar refers to households' capacity to choose, store, prepare, distribute and consume food in ways that provide appropriate nutritional absorption for all household members. This dimension, therefore, focuses on how households use the food through adequate diets, clean water, sanitation, and

health care to reach a state of nutritional well-being where all members' physiological needs are met. The food stability pillar points to the fact that to be food secure, a population, household, or individual must have access to adequate food at all times. They should not risk losing access to food due to sudden shocks such as an economic or climatic crisis or cyclical events. Studies that have investigated the correlations among the different FNS indicators in South Africa and internationally have found that correlations among different FNS indicators vary from relatively weak across FNS dimensions (those comparing indicators of the different FNS dimensions), to relatively strong within FNS dimensions (comparing indicators of the same dimension). It is, thus, important that a suite of FNS indicators be reported to adequately monitor the different dimensions of FNS. In acknowledging that there isn't a single ideal, widely accepted measure that encompasses all aspects of food insecurity, the framework suggested the use of standardized and acceptable indicators for measuring food and nutrition. Through the food security continuum, an array of indicator tools was used, and these were complemented with the HEA, as indicated in Table 1.

Table 1: Tools that were used for both the quantitative and qualitative methods

	Baseline Assessment Indicators	Tools	Instrument: Section	
Food Security Continuum	Availability	• Production • Post-Harvest	6	*** Household Economic Approach
	Access	• Hunger Scale (12months) • Hunger Scale (4Weeks) • HFIAS	7 A, B, C, D 9	
	Stability	• Food expenditure • Key Informant Interviews • Shocks	8, 11, 12	
	Utilisation	• HDD • Anthropometry Measurements	Individual Nutrition Questionnaire	
**HEA: 1) Food Security Livelihood Zoning 2) Wealth Breakdowns 3) Livelihood Strategies 4) Problem Specification 5) Analysis of Coping Strategies 6) Projected Outcomes.				

3.3 Household Economy Approach (HEA)

The second approach has been the livelihoods-based vulnerability assessment system referred to as the Household Economy Approach (HEA), commonly used in many Southern African Developing Community (SADC) countries. This approach provides an understanding of how people make a living (livelihood systems), a forecast analysis for food security and livelihood outcomes in the context of a dynamic environment, and is necessary for planning and targeting of interventions. Data captured in this approach is based on the use of rapid appraisal methods and semi-structured interviews to determine wealth breakdown and livelihood strategies in different areas. This is a qualitative dimension of the food security and nutrition assessment in which key informant interviews and focus group discussions were used in different livelihood zones.

4 Survey Design and Sampling

4.1 Study design and sampling for the household survey

The study design was cross-sectional and sought to provide representative and precise information at the household level. The first stage of the two-stage cluster sampling design is the selection of SALs or clusters in each district using PPS (Probability Proportional to Size). In this province, we selected a total of 148 SALs were selected. The second stage was a simple random selection of households within each selected SAL/Cluster, and for this study, we selected 35 households per SAL were selected. An average of 3 persons (household head, mother/caregiver, and child under 5 years old).

For the HEA, qualitative information was gathered through the of focus group discussions and key informant interviews in the selected open access livelihood zones of the Province. A livelihood zone is an area within which people broadly share the same pattern of livelihood, including options for obtaining food and income and market opportunities.

4.2 Determination of the geographical area (strata) for household sample design

Food security and nutrition indicators per geographical area e.g., district, are the basis drawing the sample for the study. However, food and nutrition insecurity may vary across the country, given the heterogeneity of the livelihood zones (LHZ)

Administratively, Western Cape province is divided into 4 districts, and 18 local municipalities (mixed urban and rural). In this study, the smallest geographic unit is the small area layer (SAL) composed of 35 households sampled. Given the heterogeneity in livelihoods within regions, the province has three Open Access Livelihood Zones that have people living in them. The LHZ strata can cover several districts or cross over several provinces. This means a district may not necessarily have all the livelihood zones. A Geographic Information System (GIS) function was used to overlay the administrative boundaries with the livelihood zones (as illustrated in Figure 2a).

a) Administrative Boundaries

b) Step 1: Divisions into livelihood zones

c) Step 2: Cluster Sampling in regions

Figure 2a: *Schematic representation of the overlay of administrative boundaries and LHZ.*

Stratification by administrative boundary and livelihood zones serves two functions:

i. First, administrative boundaries rarely correspond with household characteristics related to food insecurity and thus, estimates for administrative aggregations are likely to mask meaningful differences between sub-groups.

ii Second, defining sub-groups for stratification using criteria related to vulnerability or food insecurity improves the precision of both sub-group and overall food security estimates.

For district level estimates, the strata of investigation are the 3 districts, with clusters/ SALs distributed across livelihood zones within districts. In this study, given the resource and time constraints, the focus was on the district strata.

4.3 Eligibility

4.3.1 Participant inclusion criteria

- Randomly selected households within the defined geographic area of survey coverage.
- All children under 5 years of age at the time of data collection who live in selected households, will be eligible for the survey, on condition that their parent or caregiver provides consent for participation. Parents or caregivers will provide individual dietary information related to the child, and children will participate in anthropometry measurements.
- Mothers/ primary caregivers of the children in the household will be eligible if they are included in the survey sample and have given consent for data collection.

4.3.2 Participant exclusion criteria

- Households not currently living in the defined geographic area, or consent for participation is denied by the adult household member approached by the survey team.
- Individuals in selected households will be ineligible if consent for individual participation is denied.
- Children will be ineligible for anthropometric measurement if they have a disability, which prevents accurate weight or height measurements from being taken.
- Children above 5 years of age.
- Adults who are not the head of the household or those who are not responsible for food preparation or not the primary caregiver/ biological mother of the children aged under 5 years.

4.4 Sample Size Estimation

Not every member of the community is anticipated to participate in major surveys such the NFNSS. Only a select few are chosen to represent the sample of the entire population. These are referred to as the survey's sample size and must be of an acceptable size. The estimated sample size was intended to inform the survey process of monitoring significant changes in South Africa's food and nutritional security over time, specifically between cycles of food and nutritional security. Also, this sample was not intended to provide accurate estimates of the prevalence of food insecurity and malnutrition at lower levels of government operations such as municipalities and wards. The primary goal was to obtain the status of food insecurity and malnutrition at district level by collecting data , which included anthropometric measures to assess the levels of food security and nutrition, and analyse the link between food security and nutrition. The sample design was based on estimated prevalence of food security outcome indicators described in Section 3.2. This was regarded adequate to determine the appropriate sample size that enables the identification of the relationship between the nutritional status of children and the degree of food security in households. The Standardised Monitoring and Assessment of Relief and Transitions (SMART) technique was used to increase accuracy in the calculation of the primary outcome indicators. Basically, the sample size went through a step-by-step approach to take into account indicators for both nutrition and food security.

Two different samples, based on both food and nutritional security indicators, were calculated using the following criterion:

- If there was a small difference in the nutrition sample size and food security derived sample sizes, the higher sample size was taken and both food security and nutrition indicators were assessed in all sampled households.

To ensure that the appropriate sample size was covered, extra clusters per strata were added to substitute inaccessible areas, insecurity, or rejection of some original clusters. Likewise, households within each cluster were reserved to compensate for non-responses or refusals. The inaccessible areas were replaced by the cluster with the same characteristics. This approach was adopted to ensure unbiased selection and to maintain the precision of the study outcomes.

4.4.1 Determining sample size for the food security survey

The sample size estimation sought to provide statistically representative and precise information on food security at the district level. The required sample size for each stratum (district) was determined using the formula presented below and food security indicators provided in Table 2 and recommended parameters listed in Appendix 5. Due to the variety of indicators that might be used to quantify food security, a percentage of 50% was taken into consideration in order to obtain the greatest sample necessary for the analysis of various indicators of food security at the district level. In doing this following were taken into consideration:

$$n = \frac{Z^2\, p(1-p)}{E^{2*}\, Deff}$$

- 95% degree of confidence (Z Score=1.96);
- P is the prevalence of food insecurity measures for each province, if missing, we assume a P of 50% which will yield the required sample size which is desired for analysis of multiple indicators of food security at varying prevalence (p);
- Deff: A design effect of 1.5 to adequately address effects of intra-cluster correlation;
- 7-10% minimum desired precision (MOE) or maximum tolerable error (from other studies in sub-Saharan Africa and budgetary constraints on sample size)
- 80% statistical power;
- Household response rate (SANHANES) 2013 varies across provinces.

Table 2: Food Security Indicators

Parameters for food security	Value	Value	Value
Estimated Prevalence of food insecurity (%)	50%	50%	50%
± Desired precision	5%	6.5%	7%
Design Effect (*if applicable*)	1.5	1.5	1.5
% Non-response Households	15%	15%	15%
% Confidence interval	95%	95%	95%
% Power	80%	80%	80%
Households per district (strata)	**678**	**401**	**346**
TOTAL SAMPLE	**35 256**	**20 852**	**17992**

A sample of 401 households per stratum (district) provides required estimate of food and nutrition insecurity of 50% (SANAHNAES 2013), with a 6.5% precision around the estimate assuming a 15% household non-response rate, and a design effect of 1.5 with 95% confidence level and 80% power. This has been adopted for Western Cape Province with an expected calculated average of 480 households per district. A lower precision, e.g., 7%, recommended for lower geographies, yields 346 households per region. In this study, the 6.5 % precision was informed by budgetary constraints on sample size and the fact that the recommended precision range between 2-10% for higher geographies (e.g. province, district) and at least 20% for lower geographies (livelihoods).

4.4.2 Determining sample for nutritional indicators survey

The sample was not intended to provide an estimate of malnutrition at the lower stratum e.g. municipal and ward levels. The objective was to demonstrate the connection between nutrition and food security. According to assumed estimates, a sample of 106 children under the age of five for each stratum i.e. district divided by 366 households would yield the necessary estimate of stunting of 21.5% with 10% margin of error around the estimate of assuming a 21% non-response rate. A design effect of 1.5%, a 95% confidence level and an 80% power were taken into consideration (SANHANNES, 2013). (See formula in Box 1 and parameters in Appendix 5 & 6). Due to budgetary restrictions and the fact that the study was mainly interested in relationships between malnutrition and household food security informed the selection of 10% margin. The recommended precision ranged between 2-10% for higher geographies (e.g., province), and between 10-20% for lower geographies (municipalities).

Table 3: Parameters for nutritional indicators

Parameters for Anthropometry	Value*	Value
Estimated Prevalence of stunting (%)	21.5%	21.5%
± Desired precision (MOE)	9%	10%
Power	80%	80%
Confidence Interval	95%	95%
Design Effect (if applicable)	1.5	1.5
Children to be included	131	106
Average HH Size	3.7	3.7
% Children under-5	11%	11%
% Non-response Households	21%	21%
Households to be included	452	366
Strata (Districts)	52	52
Total households for the study		
* SANHANES (Shisana et.al 2013) Appendix Table 1		

This survey was conducted in 148 SALs, across six districts in the province. Within each SAL a random sample of 35 visiting points was identified. One household was to be selected at each visiting point. This yielded a total sample size of 5 180 households. Once a household was selected, specific household members were eligible to participate in the survey (as per the set inclusion and exclusion criteria set, refer to 4.3). These include the head of the household and/ or the person responsible for food procurement and food preparation, as well as the biological mother of any children under the age of 5 years. It was estimated that, on average in each household an average of 3 targeted respondents will participate. This would translate to the sample of 5 180. For nutrition component of the survey a total of 718 children participated in the survey.

4.4.3 Sampling procedure: selecting clusters

The representativeness of the sample also depends on the sample structure, including the selection of clusters and households within clusters. Clusters or SALs within districts were selected using PPS (Probability Proportional to Size) which measures the size of the number of households in each SAL. To ensure results could be reported at district or livelihood zones, the SALs were distributed across the livelihood zones within each district.

The survey followed the World Food Program's (WFP) Technical Guideline, which establishes a cluster based on SALs (i.e., the number of households that survey teams can safely visit in a single day), and the number of clusters with the specified number of households in each cluster for each indicator. Most configurations typically have 20 to 30 clusters per stratum(Technical Guideline, WFP - see Appendix I). In this province, the study used 35 households per cluster or (SAL).

4.4.3.1 Household Response Rate

Out of the targeted 5 180 visiting points (VPs), 97,3% were valid. Out of these valid VPs, 75.3% of them (3 899) were realised or successfully interviewed, while the refusals accounted for 11%. Absent or 'other' constituted 11%. 'Other' included those who were not eligible to participate, such as those who were incapacitated, were under-age and had no adult to consent, were not at home for the duration of the study and those who could not participate due to COVID-19 exposure. Central Karoo recorded the highest realisation rate of 86.1%, while Cape Winelands comparatively accounted for small percentage of 65.1%.

Table 4: Household response rate by district

	Total VPs	Valid VPs		Interviewed		Refused		Absent/Other	
District	**n**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
West Coast	874	848	96.9	658	75.37	90	10.3	100	11.3
Cape Winelands	875	831	94.8	570	65.1	175	20	86	9.7
Overberg	840	815	97.1	615	73.2	94	11.2	106	12.7
Garden Route	876	862	98.3	718	81.9	46	5.3	98	11.1
Central Karoo	840	825	98.3	724	86.2	20	2.4	81	9.7
City of Cape Town	875	858	98	614	70.2	143	16.3	101	11.5
Total	**5 180**	**5 039**	**97.3**	**3 899**	**75.3**	**568**	**11**	**572**	**11**

Table 5 shows characteristics of household heads and members from the households that were realised by local municipality. Due to low numbers at household head level, further breakdown by local municipalities throughout the report were done only for household members.

Table 5: Characteristics of the sample for household heads and members by local municipality

	Household heads			Household members		
Municipality	**%**	**95% CI**	**n**	**%**	**95% CI**	**n**
Beaufort West	11.8	[10.8-12.8]	459	11.6	[11.1-12.1]	1,730
Bergrivier	2.8	[2.4-3.4]	111	3	[2.7-3.3]	446
Bitou	2.5	[2.1-3.1]	98	2.4	[2.2-2.7]	357
Breede Valley	3.2	[2.7-3.8]	126	3.6	[3.3-3.9]	531
Cape Agulhas	2.1	[1.7-2.5]	80	1.8	[1.6-2.0]	264
Cederberg	3.5	[2.9-4.1]	135	3.3	[3.1-3.6]	496
City of Cape Town	15.7	[14.6-16.9]	614	16.3	[15.7-16.9]	2,427
Drakenstein	5.8	[5.2-6.6]	228	6.4	[6.0-6.8]	956
George	4.9	[4.3-5.7]	193	5.1	[4.7-5.4]	755
Hessequa	4.2	[3.6-4.9]	164	3.8	[3.5-4.1]	561
Kannaland	0.9	[0.6-1.2]	35	1.1	[0.9-1.3]	161
Knysna	3.6	[3.1-4.3]	141	3.3	[3.1-3.6]	496
Laingsburg	2.8	[2.4-3.4]	111	2.7	[2.5-3.0]	404
Langeberg	1.5	[1.2-2.0]	60	1.7	[1.5-2.0]	260
Matzikama	2.8	[2.3-3.4]	109	3.1	[2.9-3.4]	469
Oudtshoorn	2.2	[1.8-2.7]	86	2.4	[2.2-2.7]	360
Overstrand	5.4	[4.7-6.2]	211	4.3	[4.0-4.6]	638
Prince Albert	3.9	[3.4-4.6]	154	4.3	[4.0-4.7]	645
Saldanha Bay	5.2	[4.6-6.0]	204	6.2	[5.9-6.6]	930
Stellenbosch	1.9	[1.5-2.3]	73	1.2	[1.1-1.4]	185
Swartland	2.6	[2.1-3.1]	100	2.6	[2.3-2.8]	381
Swellendam	3.3	[2.7-3.9]	127	3	[2.8-3.3]	452
Theewaterskloof	5.1	[4.4-5.8]	197	4.7	[4.4-5.1]	702
Witzenberg	2.1	[1.7-2.6]	83	2	[1.8-2.2]	293
Total	**100**		**3,899**	**100**		**14,899**

4.4.3.2 Delimitation of the Household Economic Approach

Three open access livelihood zones were selected for the qualitative component of the study. These zones lie across all districts of the province. These livelihoods are open access, and most households are involved in farming and use other sources of income such as casual labour, small business, grants, and salaried employment to complement their livelihood needs. Ten communities/ villages were selected from each livelihood zones and thirty-six focus group discussions were conducted in each livelihood zone. The discussions were based on determinants of wealth, sources of food, and income and expenditure as stipulated by the key informants and focus group participants from various livelihood zones.

4.5 Field Data Collection

A training session guided by an operational manual for data collectors came before the actual data collection process began. The manual included the procedures and steps for collecting data from the households and the HEA focus group discussion within the chosen livelihood zones. To maintain uniformity and systematic inquiry throughout the data collection activities, the training's main goal was to lay out the standard process for the fieldwork. The procedure will make sure that the fieldwork is rigorous, consistent, and follows the highest ethical standards. The Standard Operating Guidelines for data gathering in the COVID-19 environment,

ethics, as well as a more comprehensive governance framework and team structure, were some of the major initiatives emphasized during the training. (Refer to Operational Manual Annexure.)

4.5.1 COVID-19 safety procedures and protocols

The survey's preliminary phase was carried out when the COVID-19 pandemic was at its peak. As a result, a COVID-19 Standard Operation Procedure (SOP) was developed to ensure compliance with a set of laws, norms, values, and principles established to lower the exposure and infection risks for study participants and data collectors. Before being trained and thereafter collecting data, each data collector undertook COVID-19 assessment. A thermometer and hand sanitizers were provided to each data collection team for use while out in the field. Complete adherence to COVID-19 preventive, precautions and standards was maintained throughout the whole data collecting process.

4.5.2 Survey data collection

Some of the salient steps articulated to field workers during the training included, among others:

- Entering an SAL (community entry and stakeholder identification), identification of Visiting Points (VPs) (using maps and GPS coordinates), selecting a household (using the Kish Grid) and obtaining verbal consent.

4.5.3 Structured household questionnaire administration

This component constituted the quantitative dimension of food and nutrition security. This approach employed a survey which involved structured household questionnaire administration in the five districts. A total of 137 Small Area Layer (SALs) with a total of 35 households in each visiting point were preselected for the survey using Geographic Information Systems with maps developed and used for the identification of the selected households. A combined set of questionnaires with both food security and nutrition indicators was administered within a household.

In each household, the head of the household was targeted as a respondent on household food security status, whilst the care giver or the mother was targeted as a respondent for individual nutrition questions for adults and children within the household. The food utilisation dimension involved anthropometric measurements such as height, weight, etc. (see Table 1). Data collection was done using tablets that were linked to the central server, where data was deposited through real-time streaming that took place under strict supervision.

- There was rigorous training on the data collection instruments i.e., the Household Questionnaire looking at all the dimensions of food security and the questions which related to the food security and nutrition indicators thereof.
- The nutrition section of the household questionnaire followed the SMART standard procedure. Some of the key indicators pertain to Anthropometric measurements and MUAC as well as the individual household set of questions.

4.5.4 HEA Data collection

Discussions were undertaken with community representatives (key informants) to develop wealth breakdown1 for the selected community or study area. This process disaggregated the community population and households into common 'access' groups, which allowed key informants to isolate important differences in households' assets, capital, vulnerabilities to different shocks and to estimate numbers of people who will be affected by different changes. Key informants from each communities managed to identify participants for each wealth group based on the wealth characteristics which were established based on the local definition of wealth. Community leaders assisted with organising 4-6 people from each wealth group from different households. At least half of the participants or groups were women. Some of the salient HEA steps articulated to field workers during the training included:

- Broader understanding of livelihood strategies;
- Problem specification and understanding of the coping strategies.

4.6 HEA Sampled Livelihood Zones

4.6.1 Southern Coast Duineveld Livelihood Zone (ZASCD) of Garden Route, Overstrand, and Overberg districts

This livelihood zone covers a number of districts, including Garden Route, Overstrand, and Overberg. It covers an area 235,600ha in Western Cape Province. It is a rural zone with a low population density of 35.6 people per 1,000 Hectares (or 3.56 people per square kilometre). Although well-watered, the sandy nature of the soils makes this area more suitable for livestock than for cropping, except in a few isolated places. The zone is served by the railway to Bredasdorp and to Mossel Bay, as well the N2 highway from Cape Town to George and a number of feeder secondary roads. Primary agricultural activities are small stock and dekriet, which is grown for thatch. Secondary activities include ostriches, olives, horses, dairy and grapes. While some of these activities do offer relatively good opportunities for work per Hectare, overall opportunities are very low. Livestock, consisting of cattle, goats, and sheep are the basis of the economy, with other sources of income such as petty trading, casual labour, and grants playing an important role for households. Water and good pasture are scarce and good access to the two is essential for production.

The vegetation consists of forests and fynbos. It has poor sandy soils, and the topography is generally coastal flat and characterised by lowlands. The main features close to and within the zone are Gouritz River, Albertinia, Heidelberg, Stilbaai, Aniston, Struisbay, Pearly Beach, Gansbay, Hermanus, and Grabouw. The population is largely made up of Coloureds. Because of its proximity to some urban centres and private farms, households also obtain income from remittances, petty trading, and casual labour.

- The average population density ranges from 45 people per km^2;
- Livestock holdings not limited by population density; and
- Livelihoods augmented by other income sources such as remittances, trading, grants, and casual or formal labour.

Figure 2b: *Map of ZASCD livelihood Zone*

Rainfall in most parts of the zone ranges from 12 to 89mm annually. The temperature is between 10°C to 22°C. The zone is characterized by loam to sandy soils, and the terrain has a moderate potential for agriculture. Maize and fruits are the principal food crops farmed in the zone. Wealthier households have sheep, goats, and cattle that graze freely in the nearby open access areas. Also, households rely on both official and unofficial cash transfers.

4.6.2 Cape Winelands vineyards, fruit, and other farming (ZAVIN) livelihood zone of Cape Winelands District

This is a rural zone with a medium population density of 470 people per 1,000 Hectares (or 47 people per square kilometre). It covers 201,000ha in the Cape Winelands District of Western Cape. The zone is highly developed, although there are pockets of natural vegetation characterized by bushland, scrubland, and fynbos. The zone's famous vineyards and wine-making dominate agriculture, but pome fruit, stone fruit, dairy, and horticulture are also practised, with buchu also farmed in Piketberg Region. The picturesque appeal of the wine farms provides a strong attraction for tourism. In recent years, this has expanded dramatically, with farms and estates shifting the highly competitive and saturated wine market to the somewhat complementary hospitality industry. This diversification has created work opportunities, but this is offset by hardships induced through lay-offs and increased use of casual or seasonal work brought on by farm management changes and mechanisation in agriculture. The N1 freeway passes through the zone near Paarl and through De Doorns, while the N7 highway passes close to Piketberg. The R44 main road is an important north-south feeder between Piketberg and Somerset West. The main Cape-Gauteng electrified railway passes through the zone, with large stations at Stellenbosch, Paarl, and Wellington.

- The average population density is 47 people per km^2;
- Livestock holdings is limited by population density; and
- Livelihoods augmented by other income sources such as remittances, trading, grants, and casual or formal labour.

Figure 3: *Map of ZAVIN Livelihood Zone*

The majority of the zone has 500 to 5500mm of mean annual rainfall, and due to the poor quality of the clay and sandy soils, crop productivity is often subpar. In the summer, the temperature ranges from 16°C to 34°C, and in the winter, it drops to -2°C to 14°C. Maize, fruits, and vegetables are the principal crops farmed for human consumption but not for commercial interests. Due to the zone's low rainfall and soils, the availability of moisture is regarded as "slight," and the land is only marginally arable. Sheep, goats, and cattle are kept by wealthier households. Commercial farmers' incomes are significantly influenced by the production of commercial wine. Households classified as "poor" or "extremely poor" can get sporadic labor payments from these industrial farms.

4.6.3 Outeniqua plateau mixed farming, dairy, and forests (ZAOUT) livelihood zone of Garden Route District

This zone has a modest population density of 117 people per 1,000 Hectares (or 11.7 people per square kilometre). Farming practices include forestry, dairy farming, with fynbos and flowers as the main crops. In addition to that, there is small and large stock farming, particularly in the Langeberg foothills area. Vegetables and small grain are practised as the secondary farming activities, and there are pockets of interesting but growing niche farming activities such as ferns (for export), blueberries, and strawberries mainly taking place in the Outeniqua/ Woodlands/ Uplands area. The zone is traversed by the N2 highway, and the N12/N9 joins it north of George. The plateau is cut by deep kloofs or canyons in places and this makes infrastructure and communications difficult, with the country's most spectacular single-span bridges arching over them. The average population density is 11.7 people per km^2.

Figure 4: *Map of ZAOUT Livelihood Zone*

Livelihoods are augmented by other income sources such as remittances, trading, grants, and casual or formal labour. Most of the zone receives 500 to 5500mm mean annual rainfall and crop production is relatively poor because of poor-quality clay and sandy soils. The temperature ranges from 16°C to 34°C in summer and -2°C to 14°C in winter. The main crops that are grown for food are maize and vegetables, and also fruits for

commercial purposes. Moisture availability is considered 'significant' and the land capability in the zone is classified as 'high potential arable', due to its rainfall and soils. Wealthier households keep cattle, sheep, and goats. Fruit production plays a major role in the livelihoods of commercial farmers. Both 'poor' and 'very poor' households have access to casual labour income from these commercial farms.

4.7 Data management, Weighting, and Analysis

4.7.1 Data management

Database reflecting the quantitative survey questionnaire was designed joining different projects/ forms using the REDCap. REDCap was the preferred technology because the application allows for data collection where there is no internet service (e.g., no Wi-Fi or cellular service) or where there is unreliable internet service. The data was captured/collected electronically using CAPI (Computer Assisted Personal Interviewing) technology by using tablets.

The data was transmitted to the central database. Once all the data was collected, it was downloaded and converted into Statistical Analyses Systems (SAS) and Statistical Package for Social Scientist (SPSS) for further manipulation. Data management included data-cleaning exercises. Data was checked and edited for logical consistency, for permitted range checks, for reliability on derived variables and for filter instructions. Data with wrong small area layer (SAL) numbers was also cleaned.

Due to the COVID-19 pandemic, HSRC researchers could not do physical back checks, but extensive telephonic back checks were undertaken in the provinces. A total of more than 15% back checks were undertaken to validate the methodology and fill in the missing gaps in the data.

Captured data and validated data that contains 3 899 cases, and 3 394 variables were converted to (SPSS) for descriptive analyses and exploration of data quality. Verified and cleaned data was further converted to Stata and SAS for further detailed exploratory analyses, cross-tabulations, weighting, and analyses.

4.7.2 Data weighting

The data was weighted to take account of the fact that not all participants covered in the survey had an equal chance of being selected. The weighting reflected the relative selection probabilities of the individual at the three main stages of selection: visiting point (address), household, and individual. To ensure representativity of non-responses and smaller groups, weights needed to be applied.

SAL base weights were appropriately adjusted to incorporate non-response at an SAL level. Households within SAL also had a base weight as they were sampled a priori. However, not all sample households were available or agreed to participate. Thus, the household base weights were further adjusted using a non-response correction factor of the ration of sampled households divided by realised households. Sampled individuals within a household had a weight computed as the ratio of the number of eligible household members and the targeted individuals in the household. The final sample individual weight was computed as the product of the weights from SAL, household and individual.

The survey is a national survey and thus the results should be generalisable to the entire population. The sample was then benchmarked to the population of the province. These benchmark variables for persons and district of the respondent in the household were selected due to their reliability and validity. The marginal totals for the benchmark variables were obtained from the Western Cape Province 2021 mid-year population estimates as published by Statistics South Africa. The estimated South African population was therefore used as the target population. Person and household weights were benchmarked using the Stata survey commands.

A total of 3 899 people were interviewed in this province. When weighted, this total represents 5 051 033 South Africans living in the Western Cape Province of 18 years and older.
The final data set (unweighted and weighted) is disaggregated by key demographic variables of household heads.

Table 6: District weighted and unweighted N's for household heads

District	Unweighted N	Weighted N
West Coast	658	321 017
Cape Winelands	570	669 473
Overberg	615	213 169
Garden Route	718	435 166
Central Karoo	724	48 675
City of Cape Town	614	3 363 533
Total	**3 899**	**5 051 033**

Table 7: Gender weighted and unweighted N's for household heads

Gender	Unweighted N	Weighted N
Male	2 309	2 469 853
Female	1 590	2 581 180
Total	**3 899**	**5 051 033**

Table 8: Age groups weighted and unweighted N's for household heads

Age groups	Unweighted N	Weighted N
18-24	137	742 894
25-34	469	1 317 264
35-44	707	1 121 291
45-54	840	804 693
55-64	876	577 679
65+	870	487 213
Total	**3 899**	**5 051 033**

4.7.3 Data analysis

As a preliminary step to drawing conclusions from the gathered data, descriptive statistical analyses were carried out. The cross-tabulations and response proportions were obtained using the Stata and SPSS software tools. In order to make sure that the estimates of the food and nutrition survey variables were in line with the general population of the Western Cape Province, weighted population estimates, benchmarked to the 2021 mid-year provided by Statistics South Africa (StatsSA) were performed. A weighted data analyses was conducted, accounting for the multi-level sample design and compensating for non-responses.

5 Demographics

5.1 Demographics of the respondents

5.1.1 Characteristics of the household heads and members

Table 9 depicts the characteristics of household heads and members from the households that were realized. More than half (59.2%) of household heads were males. Coloured and Black African population groups accounted for 69.0% and 22.0%, respectively. Household heads aged between 54 and 64 constituted 22.5%, followed by those aged 65 years and older with 22.3%. In terms of marital status, more than half of (51.6%) household heads were married or living together. Central Karoo District recorded the highest percentage with 18.6%, while Cape Winelands District accounted for the least proportion with 14.6%. With regards to household members, more than half of (53.5%) household members were females, 69.0% were Coloureds and 25.3% were children aged 0 to 14 years old. Almost two out of three (64.5%) household members were single. Central Karoo District had the highest percentage (18.7%) of household members, while Overberg District had the least with 13.8%.

Table 9: Characteristics of the sample for household heads and members

	Household heads			Household members		
	%	95% CI	n	%	95% CI	n
Sex						
Male	59.2	[57.7-60.8]	2,309	46.5	[45.7-47.3]	6,888
Female	40.8	[39.2-42.3]	1,590	53.5	[52.7-54.3]	7,936
Total	**100.0**		**3,899**	**100.0**		**14,824**
Population group						
Black African	24.1	[22.8-25.5]	941	22.0	[21.3-22.7]	3,269
White	12.5	[11.5-13.5]	486	8.1	[7.7-8.5]	1,203
Coloured	62.7	[61.1-64.2]	2,443	69.0	[68.3-69.8]	10,266
Indian/Asian	0.7	[0.5-1.1]	29	0.9	[0.7-1.1]	132
Total	**100.0**		**3,899**	**100.0**		**14,870**
Age group						
0-14	-	-	-	25.3	[24.6-26.0]	3,677
18-24 (15 -24 for HH Members)	3.5	[3.0-4.1]	137	17.2	[16.6-17.8]	2,499
25-34	12.0	[11.0-13.1]	469	15.0	[14.4-15.6]	2,177
35-44	18.1	[17.0-19.4]	707	12.4	[11.8-12.9]	1,794
45-54	21.5	[20.3-22.9]	840	11.1	[10.6-11.6]	1,614
55-64	22.5	[21.2-23.8]	876	10.5	[10.0-11.0]	1,522
65+	22.3	[21.0-23.6]	870	8.5	[8.0-8.9]	1,231
Total	**100.0**		**3,899**	**100.0**		**14,514**

	Household heads			Household members		
	%	95% CI	n	%	95% CI	n
Marital status						
Married/Living together	51.6	[50.0-53.2]	2,005	29.1	[28.4-29.8]	4,306
Divorced/Widowed/Separated	20.0	[18.7-21.3]	776	6.4	[6.0-6.8]	942
Single	28.4	[27.0-29.9]	1,104	64.5	[63.8-65.3]	9,553
Total	**20.0**		**3,885**	**100.0**		**14,801**
District						
Cape Winelands	14.6	[13.5-15.8]	570	14.9	[14.4-15.5]	2,225
Central Karoo	18.6	[17.4-19.8]	724	18.7	[18.0-19.3]	2,779
City of Cape Town	15.7	[14.6-16.9]	614	16.3	[15.7-16.9]	2,427
Garden Route	18.4	[17.2-19.6]	717	18.1	[17.4-18.7]	2,690
Overberg	15.8	[14.7-17.0]	615	13.8	[13.3-14.4]	2,056
West Coast	16.9	[15.8-18.1]	659	18.3	[17.7-18.9]	2,722
Total	**100.0**		**3,899**	**100.0**		**14,899**

*CI - Confidence Interval: Subtotals for the province are not always equal due to non-response or missing data

Due to low numbers at household head level, further breakdown by local municipalities throughout the report were done only for household members.

5.1.2 Education attainment of household heads

Table 10 highlights the education attainment of the household heads. Secondary school education accounted for 37%, followed by those with matric qualification with 31.1%. The older household heads, those aged 65 years and older and those aged 55 years to 64 years, had higher percentages of no schooling with 8.2% and 2.9%, respectively. The city of Cape Town had the highest percentage (15.1%) of household heads with tertiary education, while Central Karoo had the highest percentage (4.4%) of household heads with no schooling education.

Table 10: Educational attainment of household heads by sex, age, and district

	No schooling		Primary		Secondary		Matric		Tertiary	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
Sex										
Male	2.2	[0.9-5.6]	12.8	[10.1-16.1]	37.5	[30.4-45.2]	29.2	[24.2-34.7]	18.3	[11.8-27.2]
Female	2.8	[1.3-5.8]	19.1	[13.7-26.1]	36.6	[30.3-43.4]	32.8	[26.4-40.1]	8.6	[5.4-13.4]
Total	**2.5**	**[1.4-4.3]**	**16.1**	**[12.7-20.1]**	**37.0**	**[31.5-42.9]**	**31.1**	**[27.1-35.3]**	**13.3**	**[9.0-19.2]**
Age group										
18-24	0.8	[0.2-3.3]	4.4	[1.9-10.1]	36.3	[22.3-53.1]	48.6	[34.4-63.0]	9.9	[3.9-22.7]
25-34	3.8	[1.1-12.9]	10.4	[4.9-20.8]	34.8	[25.9-45.0]	37.6	[31.2-44.4]	13.4	[7.7-22.1]
35-44	0.7	[0.2-2.5]	11.8	[7.8-17.4]	44.8	[37.0-52.9]	31.1	[24.1-39.1]	11.6	[6.4-20.1]
45-54	0.9	[0.4-2.3]	18.1	[13.7-23.5]	38.8	[31.2-47.1]	23.1	[17.3-30.0]	19.1	[12.1-28.8]

	No schooling		Primary		Secondary		Matric		Tertiary	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
55-64	2.9	[1.5-5.6]	31.9	[24.6-40.3]	31.2	[25.1-37.9]	20.1	[12.9-29.9]	13.9	[8.2-22.6]
65+	8.2	[4.7-14.1]	37.3	[28.1-47.6]	30.0	[22.2-39.2]	12.5	[8.0-18.9]	11.9	[6.0-22.4]
Total	**2.5**	**[1.4-4.3]**	**16.1**	**[12.7-20.1]**	**37.0**	**[31.5-42.9]**	**31.1**	**[27.1-35.3]**	**13.3**	**[9.0-19.2]**
District										
Cape Winelands	1.5	[0.7-3.3]	15.1	[9.4-23.5]	33.6	[22.9-46.4]	37.0	[22.8-53.9]	12.7	[7.6-20.6]
Central Karoo	4.4	[3.0-6.3]	21.0	[17.2-25.4]	38.7	[32.5-45.2]	30.9	[25.1-37.4]	5.0	[2.8-8.9]
City of Cape Town	2.6	[1.2-5.6]	14.8	[10.3-20.7]	35.5	[27.9-44.0]	31.9	[27.3-37.0]	15.1	[9.0-24.3]
Garden Route	1.9	[0.7-5.0]	24.0	[18.2-31.1]	46.1	[38.7-53.6]	23.8	[15.7-34.4]	4.2	[2.2-7.9]
Overberg	3.0	[1.6-5.5]	15.5	[11.0-21.4]	40.5	[34.5-46.8]	27.9	[21.4-35.5]	13.2	[9.1-18.7]
West Coast	3.7	[2.1-6.4]	21.1	[16.6-26.4]	45.8	[40.2-51.5]	21.0	[16.2-26.8]	8.4	[4.0-16.8]
Total	**2.5**	**[1.4-4.3]**	**16.1**	**[12.7-20.1]**	**37.0**	**[31.5-42.9]**	**31.1**	**[27.1-35.3]**	**13.3**	**[9.0-19.2]**

5.1.3 Education attainment of household members

Table 11 below shows the education attainment by the household members aged 7 years and older. Secondary school education accounted for 36.1%, followed by those with primary school education with 25.2%. The older household members, those aged 65 years and older and those aged 55 years to 64 years, had higher percentages of no schooling with 5.5% and 3.2%, respectively. When considering those aged 20 years and older, 2.2% of household members did not have any form of schooling, while 30.4% had matric education. Overberg had the highest proportion (14.3%) of household members with tertiary education.

Table 11: Educational attainment of household members by sex, age, and district

	No schooling		Primary		Secondary		Matric		Tertiary	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
Sex										
Male	1.8	[1.2-2.7]	26.4	[23.4-29.6]	36.0	[32.7-39.5]	24.1	[21.9-26.4]	11.7	[8.2-16.5]
Female	1.7	[1.2-2.3]	25.1	[23.0-27.5]	36.3	[33.3-39.3]	26.1	[23.7-28.6]	10.8	[8.0-14.6]
Total	**1.7**	**[1.3-2.2]**	**25.7**	**[23.5-28.1]**	**36.1**	**[33.3-39.1]**	**25.2**	**[23.2-27.2]**	**11.3**	**[8.2-15.3]**
Age group										
7-14	1.3	[0.8-2.2]	83.9	[80.7-86.7]	13.8	[11.1-17.2]	0.9	[0.4-2.1]	0.0	
15-24	0.5	[0.2-1.0]	7.3	[5.5-9.6]	49.2	[45.2-53.2]	35.9	[32.1-39.9]	7.2	[5.1-10.0]
25-34	1.4	[0.5-3.7]	6.2	[4.7-8.1]	40.3	[34.4-46.5]	36.7	[33.0-40.6]	15.4	[11.0-21.2]
35-44	1.5	[0.8-2.7]	9.0	[6.6-12.0]	41.1	[36.1-46.4]	34.0	[28.4-40.0]	14.5	[9.5-21.4]
45-54	0.8	[0.4-1.6]	19.1	[15.3-23.4]	35.8	[30.5-41.5]	27.2	[22.3-32.8]	17.2	[11.7-24.4]
55-64	3.2	[2.0-4.9]	27.7	[22.7-33.3]	37.8	[33.0-42.8]	18.4	[14.3-23.3]	13.0	[8.3-19.7]
65+	5.5	[3.7-8.1]	34.2	[26.9-42.3]	29.4	[22.7-37.2]	14.7	[10.7-20.0]	16.1	[9.5-26.0]
Total	**1.7**	**[1.3-2.2]**	**25.8**	**[23.6-28.1]**	**36.1**	**[33.3-39.1]**	**25.2**	**[23.2-27.2]**	**11.2**	**[8.2-15.3]**

	No schooling		Primary		Secondary		Matric		Tertiary	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
District										
Cape Winelands	2.4	[1.6-3.7]	28.4	[24.1-33.2]	33.5	[29.9-37.3]	25.4	[21.3-30.0]	10.2	[6.6-15.4]
Central Karoo	3.7	[2.8-4.8]	32.7	[29.2-36.5]	36.9	[33.9-40.0]	22.2	[19.6-25.0]	4.5	[2.1-9.3]
City of Cape Town	1.3	[0.8-1.9]	23.8	[20.7-27.2]	36.3	[32.2-40.7]	25.8	[23.0-28.7]	12.9	[8.4-19.2]
Garden Route	2.4	[1.7-3.3]	29.9	[26.2-33.9]	37.2	[34.5-39.9]	24.2	[21.0-27.8]	6.3	[3.8-10.1]
Overberg	2.8	[1.7-4.9]	25.1	[20.8-30.0]	31.8	[27.7-36.2]	25.9	[22.7-29.5]	14.3	[9.2-21.5]
West Coast	2.8	[2.1-3.9]	33.0	[29.7-36.4]	39.2	[36.6-41.9]	20.5	[17.7-23.7]	4.5	[2.6-7.6]
Total	**1.7**	**[1.3-2.2]**	**25.8**	**[23.6-28.1]**	**36.1**	**[33.3-39.1]**	**25.2**	**[23.2-27.2]**	**11.2**	**[8.2-15.3]**

5.1.4 Employment Status

Table 12 shows that among the household heads and members who were economically active, 45.9% and 60.1%, respectively were unemployed. A higher proportion (61.1%) of female household heads were unemployed compared to their male counterparts, with 29.8% being unemployed. For household members, a similar pattern exists. About 65% of female household members were unemployed, compared to 53.6% of males. Among the youth, those aged 34 years and younger, the unemployment rate was 38.4% and 68.9% for household heads and members, respectively. Younger household heads and the old members had the highest unemployment rate of 60.9% and 84.0%, respectively. The highest unemployment rate for household heads and members was reported in the City of Cape Town and Central Karoo, with 49.5% and 62.3%, respectively.

Table 12: Employment status of household heads by sex, age, and district

	Household heads				Household members			
	Employed		Unemployed		Employed		Unemployed	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI
Sex								
Male	70.2	[62.1-77.1]	29.8	[22.9-37.9]	46.4	[42.3-50.6]	53.6	[49.4-57.7]
Female	38.9	[31.3-47.1]	61.1	[52.9-68.7]	34.4	[30.8-38.1]	65.6	[61.9-69.2]
Total	**54.1**	**[47.9-60.2]**	**45.9**	**[39.8-52.1]**	**39.9**	**[36.4-43.5]**	**60.1**	**[56.5-63.6]**
Age group								
18-24 (15 -24 for HH Members)	39.1	[22.9-58.2]	60.9	[41.8-77.1]	16.0	[14.0-18.3]	84.0	[81.7-86.0]
25-34	56.2	[45.6-66.2]	43.8	[33.8-54.4]	46.2	[41.4-51.2]	53.8	[48.8-58.6]
35-44	65.0	[57.5-71.9]	35.0	[28.1-42.5]	54.5	[48.6-60.3]	45.5	[39.7-51.4]
45-54	57.0	[48.3-65.3]	43.0	[34.7-51.7]	55.7	[50.6-60.6]	44.3	[39.4-49.4]
55-64	41.7	[34.4-49.4]	58.3	[50.6-65.6]	35.4	[29.7-41.4]	64.6	[58.6-70.3]
Total	**54.1**	**[47.9-60.2]**	**45.9**	**[39.8-52.1]**	**39.8**	**[36.4-43.4]**	**60.2**	**[56.6-63.6]**

	Household heads				Household members			
	Employed		Unemployed		Employed		Unemployed	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI
District								
Cape Winelands	60.6	[42.1-76.5]	39.4	[23.5-57.9]	43.5	[38.4-48.8]	56.5	[51.2-61.6]
Central Karoo	66.0	[53.6-76.5]	34.0	[23.5-46.4]	37.7	[32.9-42.8]	62.3	[57.2-67.1]
City of Cape Town	50.5	[42.6-58.4]	49.5	[41.6-57.4]	38.6	[33.7-43.7]	61.4	[56.3-66.3]
Garden Route	61.4	[50.6-71.2]	38.6	[28.8-49.4]	40.8	[36.4-45.2]	59.2	[54.8-63.6]
Overberg	69.9	[59.3-78.8]	30.1	[21.2-40.7]	47.2	[42.2-52.2]	52.8	[47.8-57.8]
West Coast	55.8	[45.7-65.5]	44.2	[34.5-54.3]	40.8	[36.6-45.1]	59.2	[54.9-63.4]
Total	54.1	[47.9-60.2]	45.9	[39.8-52.1]	39.8	[36.4-43.4]	60.2	[56.6-63.6]

At local municipality level, the following local municipalities: Beaufort West, Oudtshoorn, and Stellenbosch, fell under the highest band (64.2% to 71.2%) of unemployed household members (Figure 5). Cape Agulhas and Overstrand local municipalities were under the lowest band of 47.3% to 47.9% of household members unemployed.

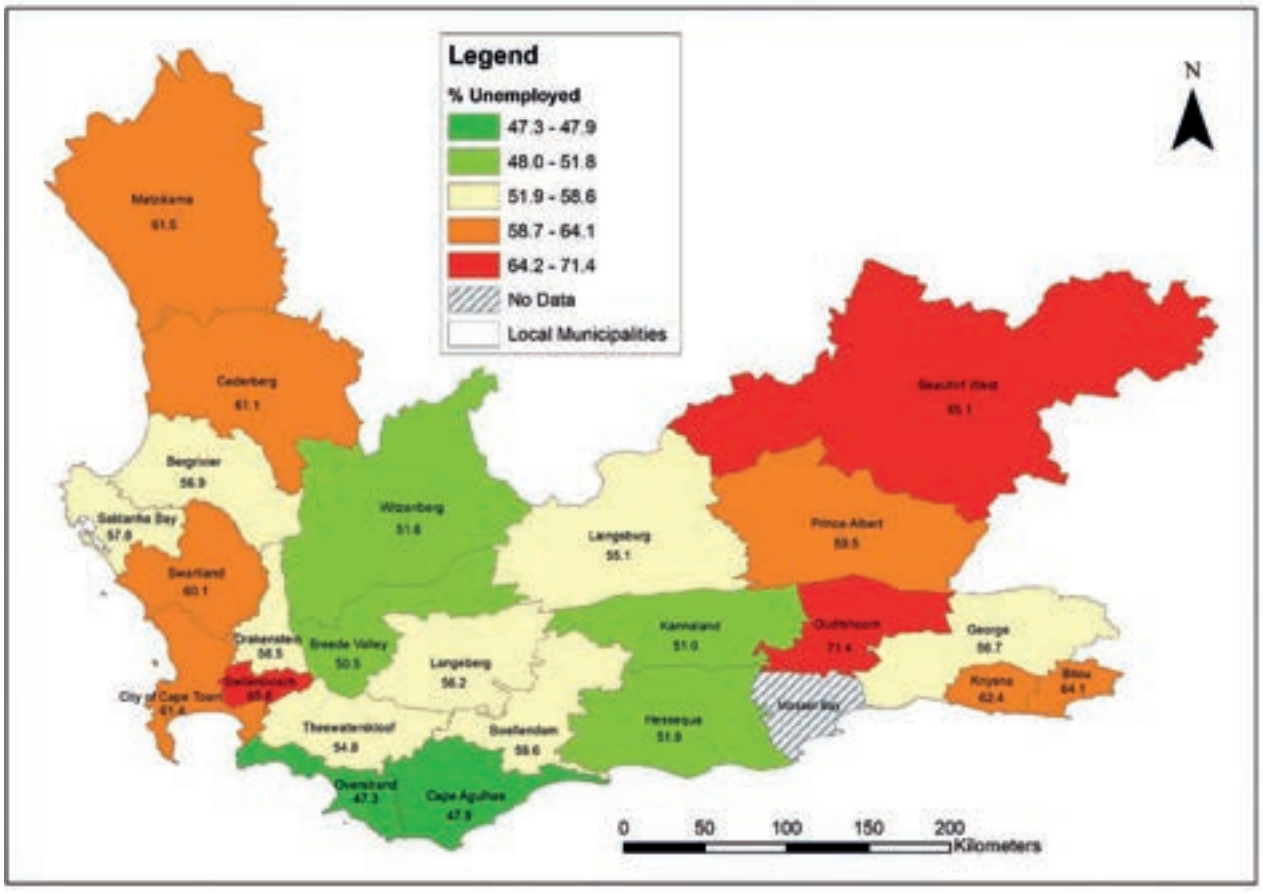


Figure 5: *Employment status of household members by local municipality*

Table 13 shows household income by household head sex, age, and district. The highest percentage (38.7%) was recorded among households which earned more than R6,000, followed by those who earned between R1,501 and R3,000 with 17.4%. Male-headed households had a higher percentage (44.6%) household income of more than R6,000 compared to female-headed ones with 30.0%. However, the difference was not significant based on the overlapping confidence intervals. Households headed by those aged from 55 to 64 years old had the highest percentage of household income of more than R6,000, with 44.4%.The city of Cape Town had the highest percentage (15.0%) of households which had no income or earned less than R1,500, while Overberg had the highest percentage (45.8%) of households which earned more than R6,000.

Table 13: Household income by sex, age, and district

	No income or <R1500		R1501-R3000		R3001-R4500		R4501-R6000		>R6000	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
Sex										
Male	11.6	[8.2-16.1]	14.1	[11.1-17.7]	16.7	[13.8-20.1]	12.9	[10.0-16.7]	44.6	[36.9-52.6]
Female	14.8	[10.3-20.8]	22.2	[18.6-26.2]	17.7	[14.4-21.4]	15.4	[12.6-18.6]	30.0	[23.3-37.5]
Total	**12.9**	**[9.5-17.3]**	**17.4**	**[14.6-20.6]**	**17.1**	**[14.7-19.8]**	**13.9**	**[11.6-16.6]**	**38.7**	**[32.1-45.8]**
Age group										
18-24	22.7	[10.8-41.5]	19.6	[9.0-37.6]	20.8	[11.3-35.1]	14.8	[8.4-24.7]	22.1	[12.1-37.0]
25-34	22.7	[15.4-32.2]	17.6	[13.1-23.3]	15.8	[9.6-24.7]	14.5	[9.6-21.3]	29.4	[20.0-40.9]
35-44	21.6	[16.5-27.8]	15.8	[11.8-20.9]	13.7	[9.4-19.6]	12.0	[8.9-15.9]	36.9	[29.2-45.3]
45-54	17.5	[11.9-24.9]	14.7	[10.9-19.5]	12.7	[9.0-17.7]	16.1	[11.8-21.7]	39.0	[30.3-48.4]
55-64	5.0	[2.9-8.3]	20.9	[16.1-26.7]	18.2	[14.6-22.5]	11.5	[7.9-16.4]	44.4	[36.8-52.3]
65+	2.5	[1.2-5.0]	17.2	[12.8-22.5]	23.3	[17.7-30.1]	15.4	[10.7-21.7]	41.6	[32.4-51.4]
Total	**12.9**	**[9.5-17.3]**	**17.4**	**[14.6-20.6]**	**17.1**	**[14.7-19.8]**	**13.9**	**[11.6-16.6]**	**38.7**	**[32.1-45.8]**
District										
Cape Winelands	13.2	[8.8-19.4]	17.4	[13.4-22.2]	21.9	[17.0-27.8]	13.3	[10.0-17.6]	34.2	[26.0-43.4]
Central Karoo	10.9	[7.8-15.2]	22.9	[19.3-26.9]	21.0	[16.5-26.3]	14.7	[11.2-19.1]	30.5	[23.2-38.8]
City of Cape Town	15.0	[10.1-21.7]	16.0	[12.0-21.0]	15.7	[12.3-19.8]	12.8	[9.5-17.1]	40.4	[30.4-51.4]
Garden Route	7	[4.4-11.0]	22.1	[17.8-27.0]	17.6	[13.8-22.3]	16.9	[13.7-20.7]	36.3	[29.0-44.3]
Overberg	6.5	[3.5-11.7]	18.9	[14.5-24.3]	16.7	[12.6-21.8]	12.1	[8.8-16.4]	45.8	[35.0-57.1]
West Coast	7.4	[5.7-9.6]	19.8	[16.5-23.6]	20.8	[16.5-25.8]	21.3	[18.2-24.7]	30.7	[25.4-36.6]
Total	**12.9**	**[9.5-17.3]**	**17.4**	**[14.6-20.6]**	**17.1**	**[14.7-19.8]**	**13.9**	**[11.6-16.6]**	**38.7**	**[32.1-45.8]**

5.1.5 Sources of Household Income

Table 14 shows that the majority of household heads had salaries and wages as their source of income, with 43.5%. The majority of household members relied on social welfare grants (including old age grant) as their source of income, with 32.6%.

Table 14: Sources of income of household heads and members

	Household heads	Household members
Source of income	**%**	**%**
Salaries and wages	43.5	23.5
Social welfare grants (including old age grant)	17.9	32.6
Regular receipts from pension from previous employment and pension from annuity funds	3.0	2.3
Net profit from business or professional practice/activities or commercial farming	2.4	2.4
Alimony, maintenance, and similar allowances from divorced spouse, family members, etc., living elsewhere	2.1	0.5
Regular allowances/remittances received from non- Household members	1.2	0.3
Other	1.1	0.6
Dividends on shares (e.g. unit trusts)	0.6	0.2
Income from share trading	0.2	0.0
Income from letting of fixed property	0.1	0.1
Interest received and/or accrued on deposits, loans, savings certificates	0.0	0.1
Income from small-scale farming	0.0	0.1
Royalties	0.0	0.0

Further breakdown of social welfare grants as source of income of household heads and members by sex, age, and district is explored in Table 15. Significantly, more female household heads (23.0%) relied on social welfare grants as source of income, compared to their male counterparts with only 12.5% reporting social welfare grants as their source of income. A similar pattern is noticed at household members' level as there were more females (34.1%) who relied on social welfare grants as source of income, compared to their male counterparts with only 31.0% - even though the difference was not significant in this case. West Coast had the highest proportion (21.5%) of household heads who relied on social welfare grants as their source of income, while Central Karoo had the highest percentage of (38.6%) household members who relied on social welfare grants as their source of income.

Table 15: Social welfare grants as source of income of household heads and members by sex, age, and district

	Household heads who had social welfare grants as source of income			Household members who had social welfare grants as source of income		
	%	95% CI	n	%	95% CI	n
Sex						
Male	12.5	[9.9-15.8]	2,305	31.0	[27.7-34.4]	6,873
Female	23.0	[18.2-28.6]	1,590	34.1	[31.4-36.9]	7,914
Total	**17.9**	**[14.6-21.8]**	**3,895**	**32.7**	**[29.9-35.5]**	**14,787**
Age group						
0-14				60.0	[53.7-66.0]	3,675
18-24 (15 -24 for HH Members)	7.8	[3.0-18.5]	136	22.4	[19.5-25.7]	2,498
25-34	3.7	[1.7-7.8]	468	7.4	[5.2-10.5]	2,175
35-44	6.3	[3.1-12.6]	705	8.4	[5.9-11.9]	1,791
45-54	15.8	[11.0-22.0]	840	12.6	[9.8-16.0]	1,613
55-64	40.3	[33.9-47.1]	876	41.4	[35.2-47.9]	1,522
65+	74.8	[63.0-83.8]	870	71.7	[61.8-79.9]	1,231
Total	**17.9**	**[14.6-21.8]**	**3,895**	**33.0**	**[30.3-35.9]**	**14,505**
District						
Cape Winelands	13.7	[8.4-21.4]	569	31.3	[27.4-35.6]	2,222
Central Karoo	18.2	[11.6-27.3]	724	38.6	[34.5-42.9]	2,764
City of Cape Town	18.6	[14.1-24.2]	612	32.2	[28.2-36.5]	2,412
Garden Route	16.2	[9.5-26.1]	717	34.3	[30.2-38.7]	2,679
Overberg	17.7	[12.8-23.9]	615	30.8	[26.5-35.5]	2,050
West Coast	21.5	[15.8-28.7]	658	35.0	[31.8-38.3]	2,695
Total	**17.9**	**[14.6-21.8]**	**3,895**	**32.6**	**[29.8-35.5]**	**14,822**

Figure 6 shows that Oudtshoorn local municipality fell under the highest band (41.4% to 47.9%) of household members who had social welfare grants as source of income. Hessequa, Overstrand, Stellenbosch, and Witzenberg local municipalities recorded least percentages of household members who had social welfare grants as source of income as they were under the least band of 18.3% to 27.6%.

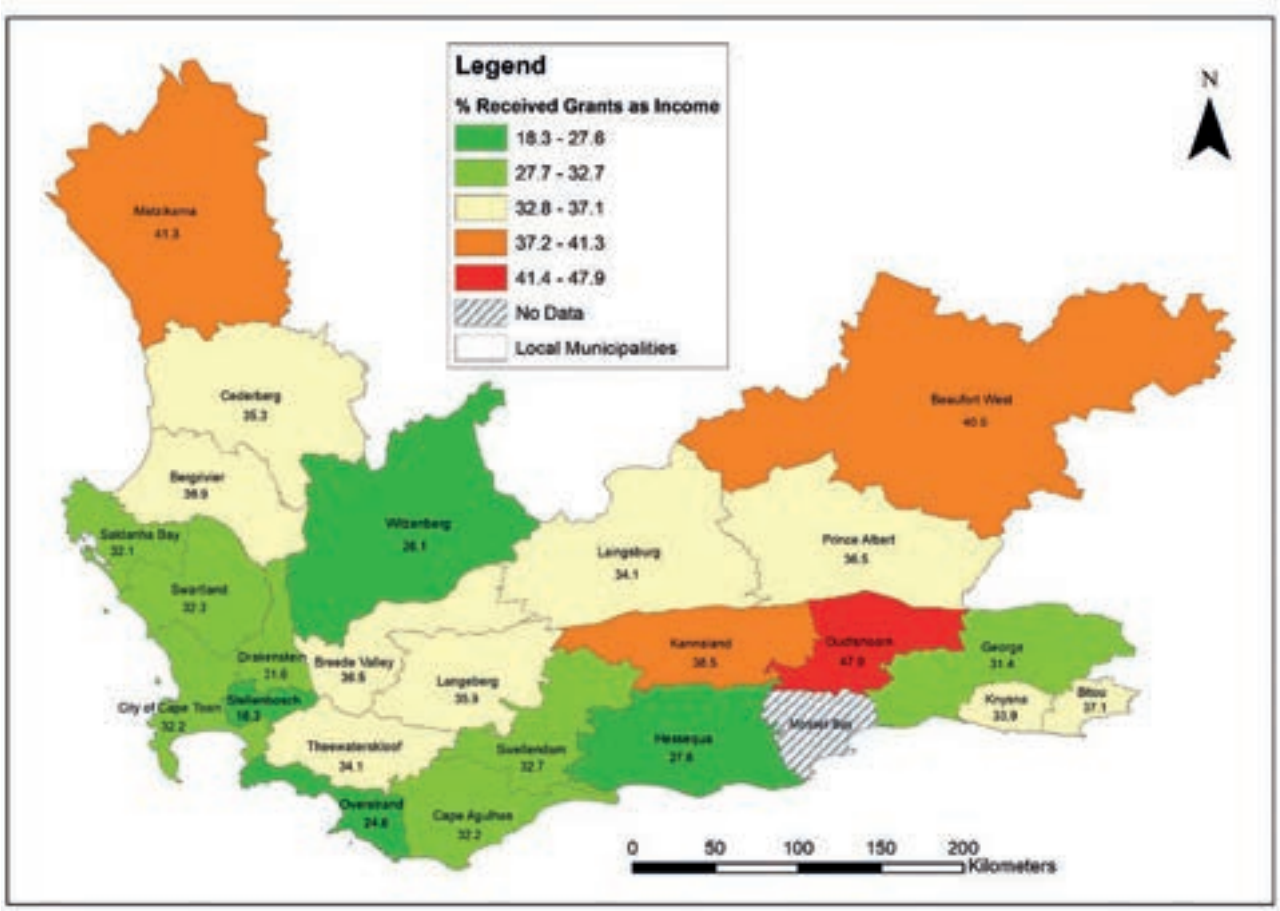


Figure 6: *Social welfare grants as source of income of household members by local municipality*

Table 16 shows household heads and members reported to be receiving any social grant(s) during the 12 months preceding the survey by sex, age, and district. Similar trends were noticed in those who reported social welfare grants as their source of income. The majority of elderly household heads (78.5%) and members (72.7%) received social grant in the last 12 months prior to the survey. More than half (61.9%) of children aged 14 and younger received social grants in a year preceding to the survey. West Coast had the highest percentage of (21.9%) household heads and Central Karoo had the highest percentage (38.9%) of household members who had received social grants during 12 months preceding the survey.

Table 16: Household heads and members reported receiving any social grant(s) during 12 months prior to survey by sex, age, and district

	Household heads received social welfare grants a year prior survey			Household members received social welfare grants a year prior survey		
	%	95% CI	n	%	95% CI	n
Sex						
Male	12.4	[9.8-15.6]	2,295	31.0	[27.7-34.5]	6,854
Female	22.7	[17.5-29.0]	1,589	34.1	[31.4-36.8]	7,899
Total	**17.7**	**[14.2-21.8]**	**3,884**	**32.6**	**[29.9-35.6]**	**14,753**
Age group						
0-14	-	-	-	61.9	[55.7-67.7]	3,661
18-24 (15 -24 for HH Members)	7.5	[2.8-18.6]	134	21.6	[18.7-24.8]	2,491
25-34	4.1	[2.1-7.9]	465	7.3	[5.1-10.5]	2,170
35-44	5.9	[2.7-12.3]	707	7.2	[4.9-10.7]	1,794
45-54	12.2	[8.4-17.4]	838	10.6	[8.2-13.6]	1,608
55-64	40.5	[35.3-45.9]	872	41.8	[36.0-47.8]	1,515
65+	78.5	[67.2-86.8]	868	72.7	[62.5-81.0]	1,228
Total	**17.7**	**[14.2-21.8]**	**3,884**	**33.1**	**[30.3-35.9]**	**14,467**
District						
Cape Winelands	13.1	[8.0-20.9]	559	32.0	[27.9-36.3]	2,200
Central Karoo	16.8	[10.6-25.6]	724	38.9	[35.0-43.0]	2,779
City of Cape Town	18.4	[13.7-24.4]	613	32.0	[27.9-36.4]	2,419
Garden Route	15.4	[8.7-25.9]	716	34.4	[30.1-39.0]	2,673
Overberg	18.1	[13.1-24.5]	614	30.9	[26.5-35.7]	2,048
West Coast	21.9	[16.5-28.5]	658	35.0	[32.0-38.1]	2,705
Total	**17.7**	**[14.2-21.8]**	**3,884**	**32.5**	**[29.7-35.5]**	**14,824**

In terms of the grant type, the dominant grant for household heads was an old age grant, which accounted for 67.8%, while the child support grant was the dominant grant with 54.5% for household members, respectively (Table 17). The disability grant was the second dominant grant with 33.0% for household heads, while the old age grant was the second dominant grant type for household members with 29.4%.

Table 17: Social grant type received by household heads and members during the 12 months prior to the survey

Grant type	Household heads (%)	Household members (%)
Old age	67.8	29.4
Disability	12.1	8.1
Social relief destress	11.5	5.9
Child support	2.6	54.5
Care dependency	0.9	0.4
Grant-in-aid	0.0	0.0
Foster care	0.0	0.9
War veterans	0.0	0.0

Table 18 shows household heads and members who reported receiving social relief during 12 months prior to the survey. About 6% of household heads reported receiving social relief during 12 months prior to the survey, while 5.3% of household members were reported to have received social relief. Those aged 45 to 54 years old had the highest proportion of household heads (12.1%) and members (9.8%) who received social relief during 12 months prior to the survey. Overberg had the lowest percentage of (2.9%) household heads who received social relief during a year prior to the survey, which was lower than the provincial average of 5.9%.

Table 18: Household heads and members reported receiving social relief during 12 months prior to survey by sex, age and district

	Household heads received social relief a year prior survey			Household members received social relief a year prior survey		
	%	95% CI	n	%	95% CI	n
Sex						
Male	4.1	[2.7-6.0]	2,304	4.5	[3.5-5.6]	6,875
Female	7.6	[4.7-12.1]	1,589	6	[4.8-7.5]	7,918
Total	**5.9**	**[4.3-7.9]**	**3,893**	**5.3**	**[4.4-6.3]**	**14,793**
Age group						
0-14				0.8	[0.5-1.5]	3,675
18-24 (15 -24 for HH Members)	3.3	[0.8-12.5]	136	6.4	[4.7-8.5]	2,499
25-34	6.3	[2.6-14.5]	467	8	[5.7-11.0]	2,175
35-44	5.3	[3.0-9.3]	707	8.9	[6.2-12.6]	1,794
45-54	12.1	[7.0-20.2]	839	9.8	[6.6-14.2]	1,613
55-64	4.7	[2.8-7.7]	875	4.8	[3.5-6.7]	1,521
65+	1.3	[0.5-3.1]	869	1.3	[0.7-2.7]	1,230
Total	**5.9**	**[4.3-7.9]**	**3,893**	**5.3**	**[4.5-6.3]**	**14,507**

District						
Cape Winelands	3.3	[1.5-7.2]	570	3.9	[2.8-5. 3]	2,225
Central Karoo	8.0	[3.5-17.3]	723	4.0	[2.8-5.7]	2,773
City of Cape Town	7.1	[5.0-9.9]	612	6.1	[4.9-7.5]	2,418
Garden Route	3.6	[1.8-7.0]	715	4.3	[2.9-6.3]	2,678
Overberg	2.9	[1.4-6.0]	615	2.2	[1.4-3.3]	2,051
West Coast	3.3	[1.9-5.6]	658	3.4	[2.3-5.1]	2,700
Total	**5.9**	**[4.3-7.9]**	**3,893**	**5.3**	**[4.4-6.3]**	**14,845**

Figure 7 shows that Cape Agulhas and Kannaland local municipalities did not have household members who received social relief during the year preceding the survey. The city of Cape Town, Stellenbosch, and Swartland local municipalities fell under the highest band of 5.4% to 7.4%.

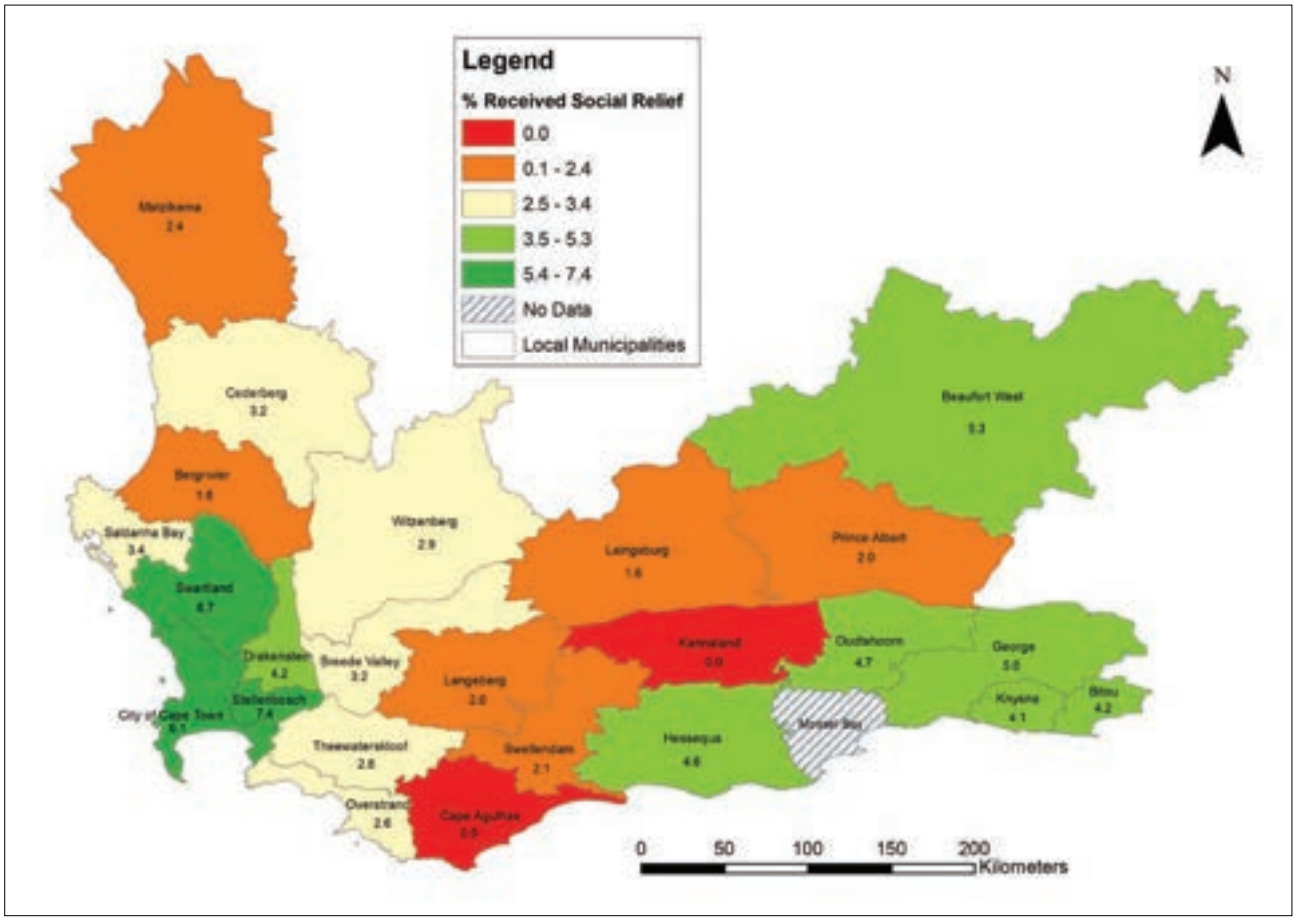


Figure 7: *Household members who received any social relief during 12 months prior to survey by local municipality*

The COVID-19 social relief grant was the dominant social relief type for both household heads and members, with 60.5% and 64.4%, respectively (Table 19). Cash was the second most dominant grant with 27.5% of household heads and 22.9% of household members reported as having received it. Food accounted for around 22.9% and 17.1% for household heads and members, respectively.

Table 19: Social relief type received by household heads and members during 12 months prior to survey

Social Relief Type	Household heads (%)	Household members (%)
COVID-19	60.5	64.4
Cash	27.5	22.9
Food	22.9	17.1
Blankets	3.0	2.0
Clothes	0.4	0.1
Other	0.0	0.2

Further breakdown of the COVID-19 grant received by household members indicates that 66.4% of female members received this social relief grant compared to 61.3% of their counterparts (Table 20). Those aged 15 to 24 years old had the highest proportion with 76.4%, followed by those aged 35 to 44 years old with 75.5%. The city of Cape Town had the highest percentage (67.4%) of household members who received COVID-19 social relief grant during 12 months prior to the survey. Cape Winelands had the lowest proportion of household members who received COVID-19 social relief grant, with 46.3%.

Table 20: Household members reported receiving COVID-19 grant during 12 months prior to survey by sex, age and district

	Yes		No		Total
	%	95% CI	%	95% CI	n
Sex					
Male	61.3	[50.3-71.2]	38.7	[28.8-49.7]	239
Female	66.4	[55.8-75.5]	33.6	[24.5-44.2]	378
Total	**64.4**	**[55.4-72.5]**	**35.6**	**[27.5-44.6]**	**617**
Age group					
0-14	31.6	[11.2-62.8]	68.4	[37.2-88.8]	37
15-24	76.4	[67.2-83.7]	23.6	[16.3-32.8]	142
25-34	71.0	[54.0-83.6]	29.0	[16.4-46.0]	131
35-44	75.5	[61.2-85.7]	24.5	[14.3-38.8]	107
45-54	65.6	[54.0-75.7]	34.4	[24.3-46.0]	102
55-64	30.3	[16.8-48.4]	69.7	[51.6-83.2]	70
65+	0.0		100.0		20
Total	**64.4**	**[55.7-72.3]**	**35.6**	**[27.7-44.3]**	**609**
District					
Cape Winelands	46.3	[28.3-66.1]	53.3	[33.9-71.7]	88
Central Karoo	63.1	[47.5-76.3]	36.9	[23.7-52.5]	116
City of Cape Town	67.4	[56.2-76.9]	32.6	[23.1-43.8]	153
Garden Route	60.3	[50.4-69.5]	39.7	[30.5-49.6]	121
Overberg	58.4	[38.0-76.2]	41.6	[23.8-62.0]	48
West Coast	55.8	[33.2-76.2]	44.2	[23.8-66.8]	93
Total	**64.4**	**[55.4-72.5]**	**35.6**	**[27.5-44.6]**	**619**

5.1.6 Discussion

It is crucial to always provide context for the demographics of the research population by comparing them to those of other recent nationally representative surveys. In households with adults 20 years and older, 5.2% had no formal education, down from 2.6% in 2020; 23.1% had matriculation, down from 36.3% in 2020. (Stats SA, 2021). In the current survey, the unemployment rates for household heads and members who were economically active were 54.0% and 68.7%, respectively, which is greater than the provincial official unemployment rate from the Quarterly Labour Force Survey's third quarter in 2021, which was 38.1%. (QLFS, 2021).

In the Western Cape, grants made up more of a share of households' income in 2020 than salaries did (60.2% against 49.0%), per the General Household Survey. Similar trends were observed in the current study, where the majority of household heads (36.7%) and members (42.6%) relied on social welfare grants (including old age grants) as a source of income. The next highest percentages (35.2%) and lowest percentage (16.5%), respectively, for household heads and members, were those who relied on salaries. In line with the Western Cape's average household population of 38.9% in 2016 and 39.1% in 2020, the provincial average of 37.6% of household members reported as getting social grants (SADHS, 2016; Stats SA, 2021).

The child support grant was the most typical type of grant, with 51.6% of household members getting social grants. Despite the fact that this was the situation in 2016 as well, in the province 26.2% of households received child grants (SADHS, 2016). Understandably, youngsters and the elderly received grants more frequently than other age groups. In the current survey, 50.8% of household members were recorded as having received the COVID-19 grant. This is greater than the 4.8% provincial average of those who received COVID-19 funds in 2020. (Stats SA, 2021). The reason behind this might be due to the fact that the grant was being gradually rolled out as the pandemic was progressing. In addition, for 2020 statistics, only those aged 18 years and older were counted, whereas all household members were included in the current study.

5.2 Dwellings and services

5.2.1 Housing types

Findings from the Western Cape Province show that the most common dwelling type occupied by households was described as a formal dwelling/house or brick/concrete block structure on a separate stand or yard or on a farm (77.7%) (Table 21). The second most common dwelling type was informal dwelling/shack not in a backyard (10.9%). About 3.5% of the households reported living in informal dwellings/shacks in the backyard, and 0.4% highlighted dwelling in room/apartment on a property or an apartment in a larger dwelling, servants' quarters etc.

Table 21: Types of dwellings occupied by households

Dwelling types (n=3884)	Number (n)	Percentage (%)
Formal dwelling/ House or brick/concrete block structure on a separate stand or yard or on a farm	3,296	77.7
Informal dwelling/Shack not in backyard, e.g., on an informal/ squatter settlement or on a farm	291	10.9
Informal dwelling/Shack in backyard	100	3.5
Formal dwelling /House/ Flat/Room in backyard	62	2.5
Flat or apartment in a block of flats	47	2.4
Semi-detached house	34	1.4
Other	7	0.6

Dwelling types (n=3884)	Number (n)	Percentage (%)
Cluster house in security complex	11	0.4
Room/Apartment on a property or an apartment in a larger dwelling, servants quarters/granny	14	0.4
Traditional dwelling/hut/structure made of traditional materials	14	0.3
Caravan/Tent	6	0.1
Townhouse (semi-detached house in a complex)	2	0.0

5.3 Access to water service

5.3.1 Households main source of drinking water

Table 22 shows that the predominant source of drinking water in the Western Cape Province was piped (tap) water in dwellings/houses, making up 77.6% of all water sources (Table 22). Tap water in the yard (12.6%) was the second most common drinking water source for households. Only 6.6% of the households had access to public/communal tap (Table 24). Boreholes accounted for 0.4% of all water sources. About 0.1% of the household's main source of drinking water was from water vendors and none sourced their drinking water from a well, or flowing water/ stream/ river (Table 22).

Table 22: Main source of drinking water

Drinking water source (n=3897)	Number (n)	Percentage (%)
Piped (tap) water in dwelling/house	2,992	77.6
Piped (tap) water in yard	534	12.6
Public/communal tap	184	6.6
Neighbour's tap	32	1.2
Water-carrier/tanker	37	0.7
Rain-water tank in yard	29	0.4
Other	17	0.4
Borehole in yard	46	0.3
Borehole outside yard	11	0.1
Stagnant water/dam/pool	7	0.1
Water vendor (charge involved)	6	0.1
Well	1	0.0
Flowing water/stream/river	1	0.0

Table 23 shows the main source of drinking water by the sex of household head and district. There is almost an equal distribution between both genders. West Coast (84.7%) had the highest proportion of households using tap water inside dwellings/houses as the main source of drinking water, followed by the city of Cape Town (78.6%), and Overberg (78%) districts. Central Karoo (15.7%) and Garden Route (15.7%) had equal distribution of households using tap water in the yard, closely followed by Cape Winelands (15%). Overberg (10.8%) had the highest proportion of households using drinking water from the public/communal taps, followed by the city of Cape Town (7.8%).

Table 23: Households main source of water by sex of household head and districts

		Household head sex		District					
		Male	Female	Cape Winelands	Central Karoo	City of Cape Town	Garden Route	Overberg	West Coast
Piped (tap) water in dwelling/ house	%	77.5	77.8	73	73.8	78.6	72.8	78	84.7
	95% CI	[67.9-84.8]	[67.2-85.8]	[61.8-81.8]	[63.2-82.1]	[64.0-88.3]	[62.0-81.4]	[64.0-87.6]	[78.8-89.2]
Piped (tap) water in yard	%	12.2	13.3	15	15.7	11.7	15.7	10.6	12.4
	95% CI	[9.4-15.7]	[9.1-19.0]	[9.9-22.1]	[10.7-22.4]	[7.5-17.8]	[10.9-22.0]	[6.4-16.9]	[8.3-18.1]
Borehole in yard	%	0.4	0	0.2	7.3	0.2	0.1	0	0.4
	95% CI	[0.2-1.0]	[0.0-0.1]	[0.0-1.2]	[3.1-16.4]	[0.0-1.1]	[0.0-0.9]		[0.1-1.5]
Rain-water tank in yard	%	0.6	0.2	0.3	0.8	0	3.3	0	0
	95% CI	[0.2-1.6]	[0.0-0.5]	[0.1-1.2]	[0.2-3.2]		[1.2-8.3]		
Neighbours tap	%	1.6	0.5	2.3	0.2	1.2	0.4	0.6	0.7
	95% CI	[0.5-5.1]	[0.2-1.6]	[0.9-5.6]	[0.0-1.1]	[0.2-6.1]	[0.1-1.2]	[0.2-2.2]	[0.3-1.6]
Public/ communal tap	%	6	7.2	6.7	0.2	7.8	2.6	10.8	0
	95% CI	[2.7-13.0]	[2.7-17.9]	[2.3-18.0]	[0.0-1.3]	[2.9-19.5]	[1.0-6.3]	[4.0-26.2]	
Water-carrier/tanker	%	0.8	0.7	0.7	0.2	0.3	3	0	1
	95% CI	[0.3-1.9]	[0.2-1.9]	[0.2-2.0]	[0.0-1.7]	[0.1-2.3]	[0.7-12.2]		[0.3-3.7]
Water vendor (charge involved)	%	0.1	0	0	0.3	0	0.5	0	0.1
	95% CI	[0.0-0.3]	[0.0-0.4]		[0.1-1.1]		[0.1-2.1]		[0.0-1.0]
Borehole outside yard	%	0.1	0.1	0.2	1.1	0	0.5	0	0
	95% CI	[0.0-0.4]	[0.0-0.3]	[0.0-1.1]	[0.4-2.7]		[0.1-2.2]		
Flowing water/ stream/river	%	0	0	0	0	0	0	0	0.2
	95% CI		[0.0-0.2]						[0.0-1.2]
Stagnant water/dam/ pool	%	0.1	0	0.5	0.2	0	0.1	0	0.1
	95% CI	[0.0-0.4]	[0.0-0.0]	[0.1-2.0]	[0.0-1.7]		[0.0-1.0]		[0.0-0.9]
Well	%	0	0	0.2	0	0	0	0	0
	95% CI	[0.0-0.2]		[0.0-1.2]					
Other	%	0.6	0.1	1.1	0.2	0.2	1.1	0	0.3
	95% CI	[0.2-1.3]	[0.0-0.4]	[0.4-2.9]	[0.1-0.9]	[0.0-1.1]	[0.4-3.1]		[0.0-1.8]

Based on the WHO & UNICEF Joint Monitoring Programme (JMP) definition, water sources were categorized into 'improved' and 'unimproved'. 'Improved' drinking water sources include piped water (in dwelling and yard or plot), public taps or standpipes, tube wells or boreholes, protected dug wells, protected springs, and rainwater collection (WHO and UNICEF, 2017). A total of 95.9% of households reported that they were supplied with water by the municipality (Figure 8). Moreover 1.0% were not supplied with water by the scheme.

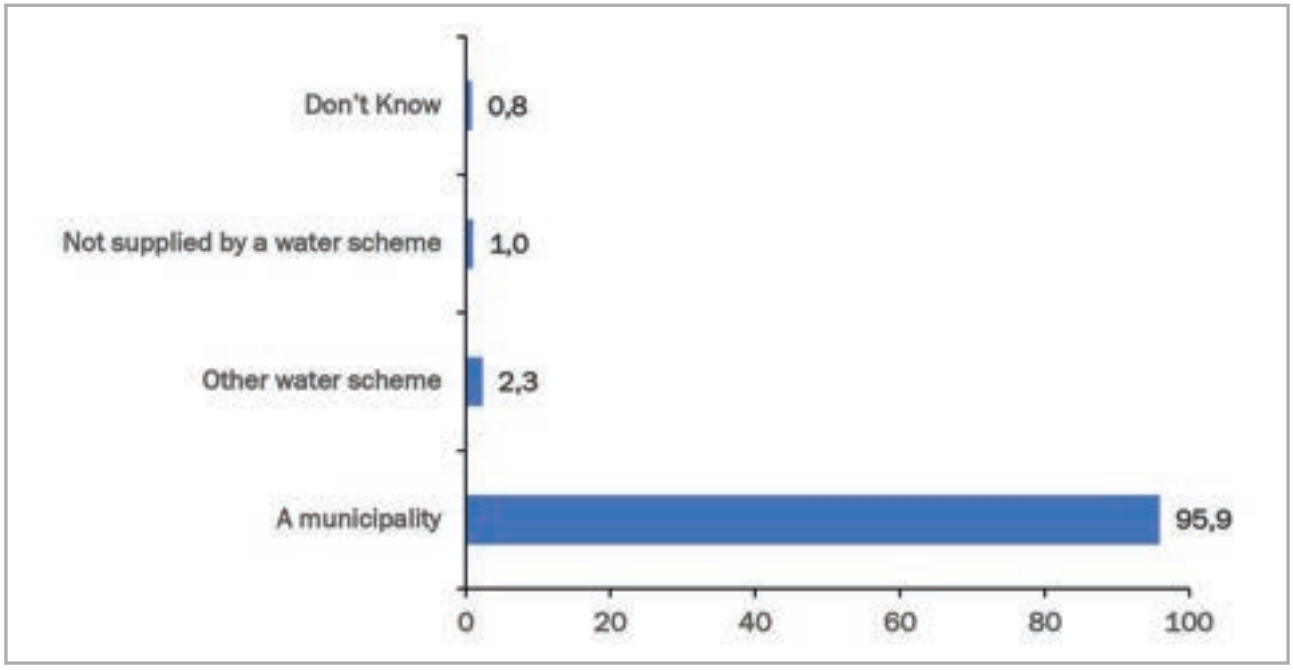


Figure 8: *Water supplier (n=3 853)*

Of those households that reported the municipality as the supplier of their main source of drinking water, about only 67.1% of households paid for it (Figure 9). A comparison of the payment of water services by the district showed that West Coast District had the highest proportion of the households that paid for their water services (80.7%), closely followed by Overberg (79.3%) - while City of cape Town (35.4%) had the highest proportion of those who did not pay (Table 24). The findings also highlighted that more male-headed households (68.6%) pay for water services than female-headed households 65.4%.

5.3.2 Payment for water services

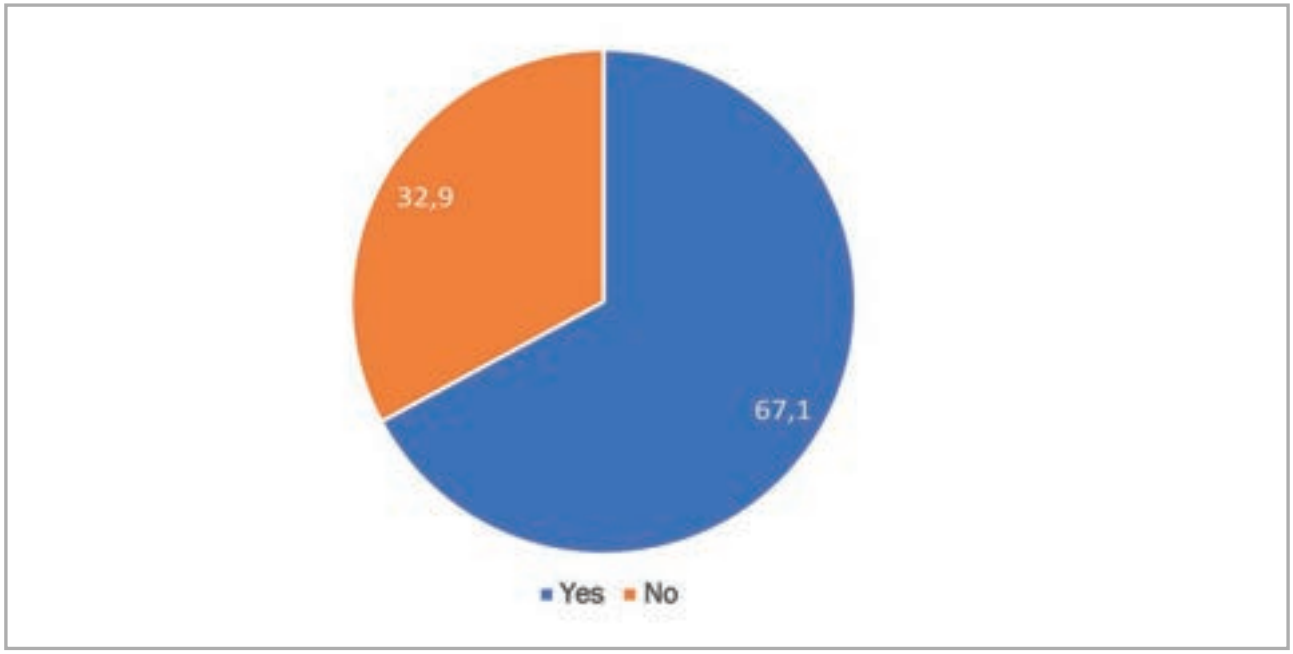


Figure 9: *Payment of water services (n=3850)*

Table 24: Payment of water services by district and household head sex

	Yes		No	
	%	95% CI	%	95% CI
Household head sex				
Male	68.6	[57.3-78.1]	31.4	[21.9-42.7]
Female	65.4	[55.5-74.1]	34.6	[25.9-44.5]
Total	**67.3**	**[57.2-76.1]**	**32.7**	**[23.9-42.8]**
District				
Cape Winelands	66.5	[51.8-78.5]	33.5	[21.5-48.2]
Central Karoo	73.4	[61.5-82.7]	26.6	[17.3-38.5]
City of Cape Town	64.6	[49.5-77.3]	35.4	[22.7-50.5]
Garden Route	68.2	[57.0-77.7]	31.8	[22.3-43.0]
Overberg	79.3	[65.7-88.4]	20.7	[11.6-34.3]
West Coast	80.7	[70.8-87.9]	19.3	[12.1-29.2]

5.4 Sanitation and Hygiene

Table 25 shows the types of toilet facilities used by the Western Cape Province households. Flush toilets connected to a public sewerage system were the most common toilet facility used by households, accounting for 93% of all toilet types (Table 25). About 0.7% used a pit latrine/toilet with a ventilation pipe, with 0.1% using chemical toilets.

Table 25: Type of toilet facility used by households

Toilet types (n=3869)	Number (n)	Percentage (%)
Flush toilet connected to a public sewerage system	3,574	93.0
Flush toilet connected to a septic or conservancy tank	96	2.5
Open defecation (e.g., no facilities, field, bush)	39	1.1
Bucket toilet (collected by municipality)	35	0.8
Pit latrine/toilet with ventilation pipe	39	0.7
Pit latrine/toilet without ventilation pipe	28	0.6
Pour flush toilet connected to a septic tank (or septage tank)	17	0.5
Bucket toilet (emptied by household)	25	0.5
Other	6	0.2
Chemical toilet	9	0.1
Ecological Sanitation Systems (e.g., urine diversion)	1	0.0

West Coast (97.1%) had the highest proportion of households using flush toilets connected to a public sewerage system, followed by the City of Cape Town (93.9%) (Table 26). The highest proportion of households practising open defecation was in the Overberg District (1.5%). Garden Route (2.3%) had the highest proportion of households using pit latrine/toilet with ventilation pipe, while Cape Winelands had the highest proportion of bucket toilets (emptied by household) (1.2%). There was a high number of female-headed households (94.2%) using flush toilets connected to a public sewerage system than male-headed households (92.3%).

Table 26: Type of toilet facility used by the households by sex of the household head and district

		Household head sex		Districts					
		Male	Female	Cape Winelands	Central Karoo	City of Cape Town	Garden Route	Overberg	West Coast
Flush toilet connected to a public sewerage system	%	92.30	94.20	92.50	91.20	93.90	87.20	90.10	97.10
	95% CI	[85.7-96.0]	[89.9-96.7]	[87.8-95.4]	[81.0-96.2]	[84.7-97.7]	[77.2-93.2]	[81.8-94.9]	[94.1-98.6]
Flush toilet connected to a septic or conservancy tank	%	2.60	2.40	2.10	4.30	2.60	2.10	4.80	1.10
	95% CI	[1.4-4.8]	[1.1-5.0]	[1.2-4.0]	[1.9-9.4]	[1.1-6.0]	[1.1-4.0]	[1.9-11.4]	[0.4-2.9]
Pour flush toilet connected to a septic tank (or septage pit)	%	0.70	0.30	0.00	0.70	0.60	0.40	0.60	0.50
	95% CI	[0.1-3.0]	[0.1-1.5]		[0.2-2.4]	[0.1-4.2]	[0.1-1.2]	[0.1-2.4]	[0.2-1.3]
Chemical toilet	%	0.10	0.20	0.20	0.20	0.00	0.90	0.00	0.00
	95% CI	[0.0-0.3]	[0.0-0.5]	[0.0-1.1]	[0.0-1.3]		[0.4-2.3]		
Pit latrine/ toilet with ventilation pipe	%	0.50	1.00	1.20	1.20	0.30	2.30	0.90	0.10
	95% CI	[0.2-0.9]	[0.3-2.7]	[0.4-3.6]	[0.3-5.3]	[0.0-2.0]	[1.1-4.7]	[0.3-2.7]	[0.0-0.9]
Pit latrine/ toilet without ventilation pipe	%	0.70	0.50	0.50	1.10	0.50	1.50	0.80	0.40
	95% CI	[0.3-2.2]	[0.2-1.6]	[0.1-2.1]	[0.3-4.3]	[0.1-3.5]	[0.4-4.7]	[0.2-2.9]	[0.1-1.7]
Bucket toilet (collected by municipality)	%	0.90	0.60	0.50	0.00	0.50	3.50	0.30	0.00
	95% CI	[0.3-2.5]	[0.2-1.6]	[0.2-1.5]		[0.1-1.8]	[0.9-12.9]	[0.0-1.9]	
Bucket toilet (emptied by household)	%	0.60	0.30	1.20	0.40	0.30	0.60	1.10	0.10
	95% CI	[0.2-2.1]	[0.1-0.8]	[0.5-2.6]	[0.1-2.5]	[0.1-2.4]	[0.2-2.2]	[0.2-7.2]	[0.0-0.9]
Ecological Sanitation Systems (e.g. urine diversion)	%	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00
	95% CI	[0.0-0.2]					[0.0-0.9]		
Open defecation (e.g. no facilities, field, bush)	%	1.40	0.30	1.40	0.90	1.00	0.90	1.50	0.50
	95% CI	[0.3-5.2]	[0.1-0.8]	[0.6-3.0]	[0.3-2.8]	[0.2-6.9]	[0.3-2.5]	[0.4-5.3]	[0.1-3.7]
Other	%	0.20	0.30	0.50	0.00	0.20	0.40	0.00	0.20
	95% CI	[0.1-0.5]	[0.1-1.8]	[0.1-3.3]		[0.0-1.2]	[0.1-1.3]		[0.0-1.3]

Types of toilet facilities used by households were further divided into 'improved' and 'unimproved' based on the WHO & UNICEF Joint Monitoring Programme (JMP) definition. 'Improved' toilets include flushed or flushed to septic tanks, piped sewer systems, pit latrines, VIP latrines, and pit latrines with slabs (WHO and UNICEF, 2017). Meanwhile, 'unimproved' toilets consist of shared facilities or none (bush or field); flush toilets or pour-flush toilets that go elsewhere (not to septic tanks or pit latrines); pit latrines without slabs; bucket systems;

and hanging toilets (WHO and UNICEF, 2017). About 97.5% of households were using 'improved' toilet types in Western Province. The majority of the households in Western Cape Province used improved toilets, with West Coast having the highest proportion (99.1%) followed by Central Karoo (98.7%) (Figure 10).

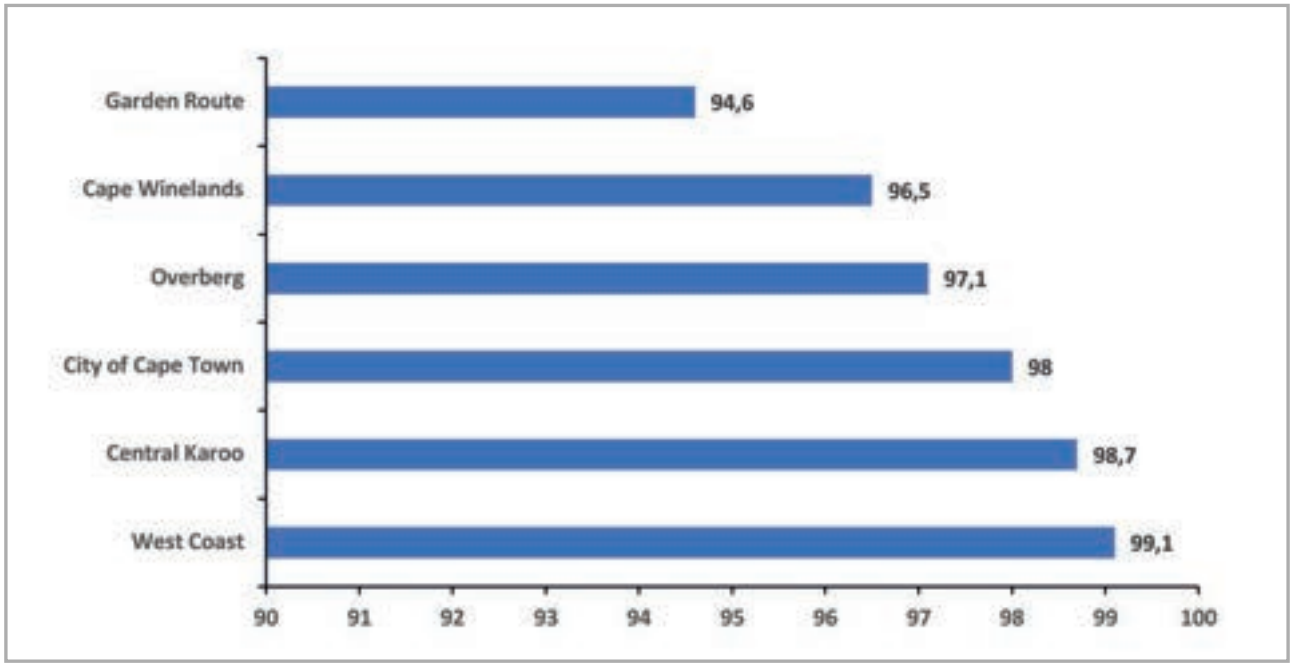


Figure 10: *Proportion of households using improved toilet types by districts*

Figure 11 shows that 46.1% of households do not pay for sewage, while 52.7% indicated that they pay for sewage, and only 1.2% reported that they don't know whether it is paid or not. When asked whether the household receives free sanitation as part of the South African Government's free basic services policy, only 32.9% indicated they were receiving free sanitation and 65.1% of households reported to not have received free sanitation services (Figure 12).

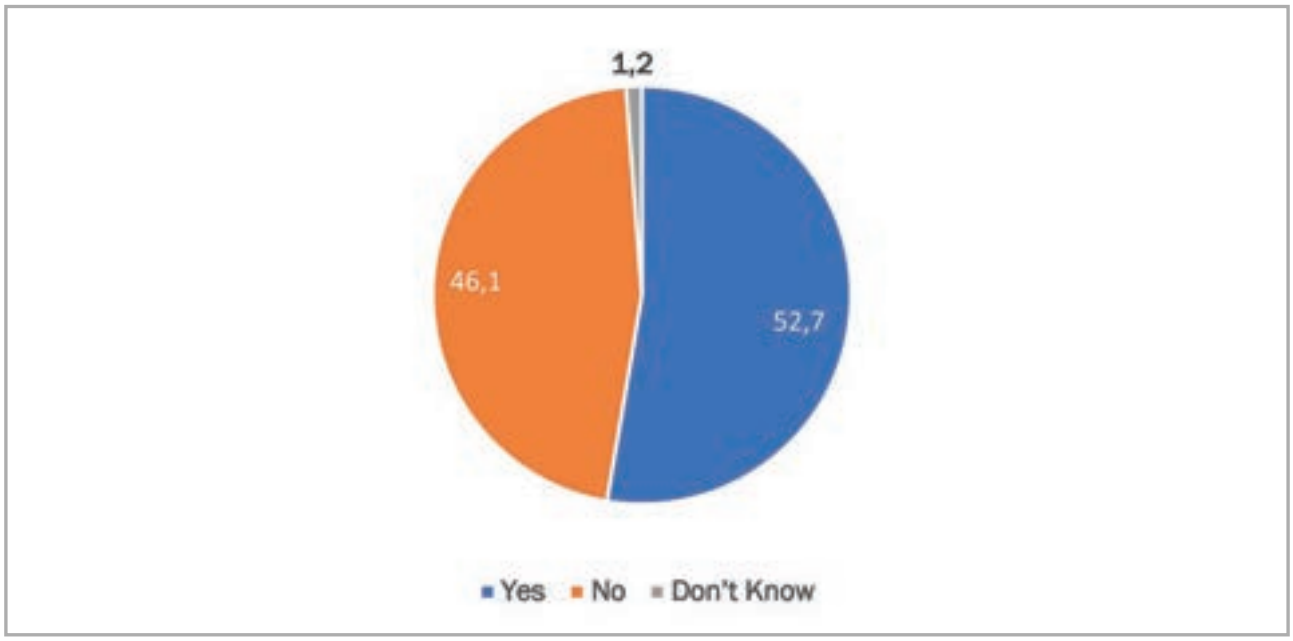


Figure 11: *Proportion of households paying for public sewerage (n=3 785)*

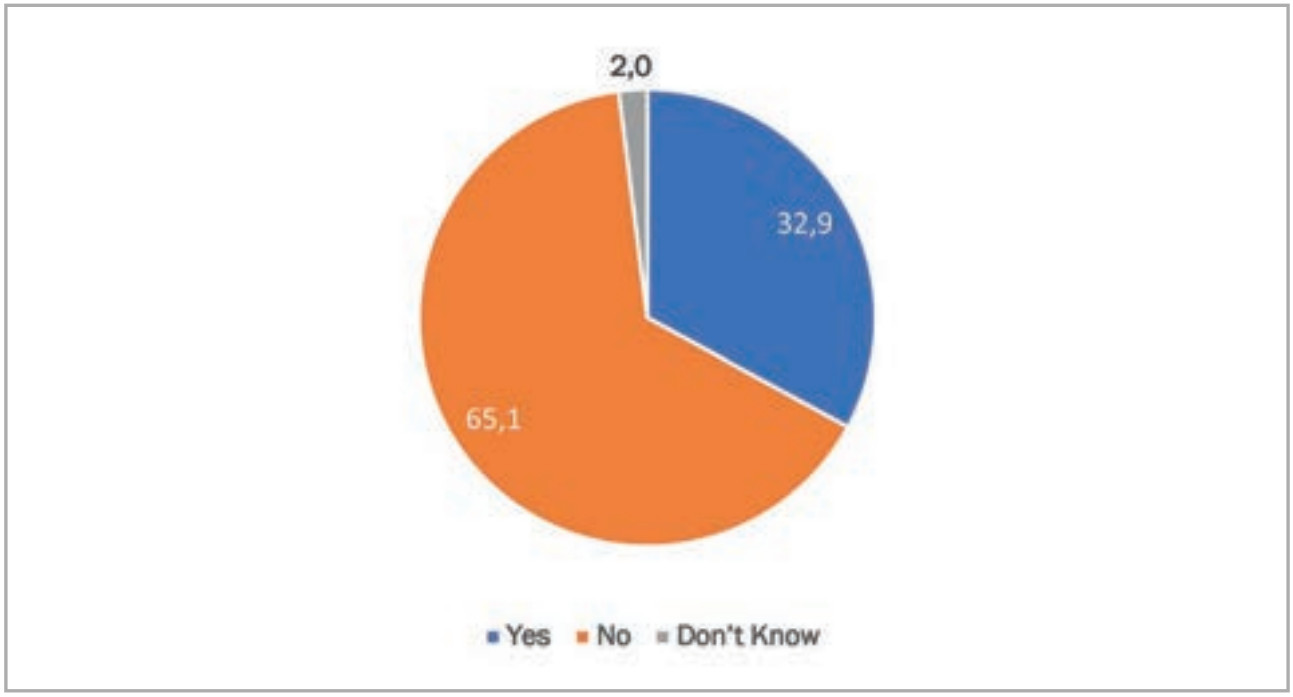


Figure 12: *Proportion of households receiving free sanitation services (n=3 564)*

Most female-headed households (33.5%) indicated to have received free sanitation, whilst 31.7% of male-headed households didn't receive free sanitation. The City of Cape Town (35.1%) district had the highest proportion of households receiving free sanitation services, while the West Coast District (22.6%) had the least of households receiving free sanitation (Table 27).

Table 27: Households receiving free sanitation by sex of the household head and district

	Yes		No		Don't know	
	%	95% CI	%	95% CI	%	95% CI
Household head sex						
Male	33.5	[27.7-39.8]	65.2	[59.1-70.9]	1.3	[0.8-2.1]
Female	31.7	[25.8-38.4]	65.2	[58.4-71.4]	3.1	[1.6-5.8]
District						
Cape Winelands	27.8	[20.2-37.0]	69.1	[60.0-77.0]	3	[1.2-7.2]
Central Karoo	32.2	[24.4-41.2]	65.8	[57.3-73.4]	2	[1.1-3.5]
City of Cape Town	35.1	[27.8-43.2]	63.4	[55.3-70.8]	1.4	[0.6-3.4]
Garden Route	33.5	[26.3-41.5]	64.5	[57.1-71.2]	2.1	[0.9-4.7]
Overberg	27.8	[21.0-35.9]	71	[63.2-77.8]	1.1	[0.5-2.5]
West Coast	22.6	[16.2-30.6]	71	[64.4-76.9]	6.4	[4.1-9.8]

5.4.1 Refuse removal

Table 28 shows rubbish disposal methods used by households in the Western Cape Province. The majority of households have their disposal removed by local authority/private company at least once a week, 49.1%, followed by 40.8% of households who have their rubbish removed by community members contracted by the municipality at least once a week (Table 28). Few households reported having rubbish removed by community members, less often than once a week (0.2%).

Table 28: Households rubbish disposal

Rubbish removal (n=3832)	Number (n)	Percentage (%)
Removed by local authority/private company at least once a week	1,994	49.1
Removed by community members, contracted by municipality at least once a week	1,289	40.8
Own refuse dump	169	2.5
Dump or leave rubbish anywhere	45	1.8
Communal refuse dump	83	1.4
Removed by local authority/private company less often than once a week	107	1.3
Removed by community members, contracted by municipality less than once a week	54	1.1
Other	45	1.0
Communal container/central collection point	25	0.7
Removed by community members at least once a week	11	0.2
Removed by community members, less often than once a week	10	0.2

Table 29 shows that a higher proportion of female-headed households have their disposal removed by local authority/private company at least once a week (50.4%). The City of Cape Town had the highest proportion of households who had the disposal removed by community members contracted by the municipality at least once a week (46%), while Central Karoo had the highest proportion of households who used their own refuse dump (9.8%). The City of Cape Town (2.2%) had the highest proportion of households who dump or leave rubbish anywhere, whilst Garden Route (0.7%) had the least. Figure 13 indicates the proportion of households receiving free refuse removal services, and 59.3% of the households indicated that they were not receiving free refuse removal services, whilst only 39.8% of the households received free refuse removal services (Figure 13).

Table 29: Households rubbish disposal methods by sex of the household head and district

		Household head sex		District					
		Male	Female	Cape Winelands	Central Karoo	City of Cape Town	Garden Route	Overberg	West Coast
Removed by local authority/private company at least once a week	%	48.4	50.4	58	43.8	47	46.2	53.1	57.9
	95% CI	[40.0-56.9]	[41.5-59.2]	[48.7-66.7]	[32.5-55.8]	[35.3-59.1]	[35.7-57.0]	[44.3-61.8]	[45.1-69.7]
Removed by local authority/private company less often than once a week	%	1.3	1.2	4.6	3.2	0.2	1.9	1.5	5.2
	95% CI	[0.8-2.1]	[0.7-2.2]	[2.4-8.7]	[1.7-5.9]	[0.0-1.0]	[0.8-4.5]	[0.5-3.9]	[3.0-9.1]
Removed by community members, contracted by municipality at least once a week	%	39.7	42.5	25.6	33.6	46	36.6	36.2	26.4
	95% CI	[33.0-46.9]	[33.8-51.7]	[16.7-37.2]	[23.9-44.8]	[35.8-56.6]	[25.8-48.8]	[27.1-46.4]	[15.3-41.6]
Removed by community members, contracted by municipality less than once a week	%	1.2	0.6	2.3	2.1	0.9	0.7	1.4	1.6
	95% CI	[0.7-2.2]	[0.3-1.2]	[1.1-4.7]	[1.1-4.0]	[0.4-1.9]	[0.3-1.5]	[0.6-2.9]	[0.6-4.1]

		Household head sex		District					
		Male	Female	Cape Winelands	Central Karoo	City of Cape Town	Garden Route	Overberg	West Coast
Removed by community members at least once a week	%	0.2	0.1	1.2	0	0	0	0	0.5
	95% CI	[0.1-0.7]	[0.0-0.4]	[0.4-3.2]					[0.1-3.7]
Removed by community members, less often than once a week	%	0.2	0.1	0.2	0.7	0.2	0.1	0.2	0.1
	95% CI	[0.1-1.0]	[0.0-0.3]	[0.0-1.2]	[0.2-2.6]	[0.0-1.1]	[0.0-0.9]	[0.0-1.1]	[0.0-0.9]
Communal refuse dump	%	1.3	1.6	1.7	3.7	1.1	2.2	3.7	0.8
	95% CI	[0.6-3.1]	[0.7-3.8]	[0.7-3.7]	[1.5-8.9]	[0.3-4.7]	[0.5-9.1]	[1.2-10.4]	[0.3-2.1]
Communal container/central collection point	%	1	0.3	0.2	0.3	0.8	0.8	1.3	0.5
	95% CI	[0.4-2.3]	[0.1-1.4]	[0.0-1.2]	[0.0-1.7]	[0.2-2.7]	[0.3-2.2]	[0.2-6.9]	[0.1-3.1]
Own refuse dump	%	3.3	1.3	3.1	9.8	0.9	8.7	1.7	5.1
	95% CI	[1.7-6.1]	[0.7-2.5]	[1.3-7.1]	[4.0-22.1]	[0.2-4.1]	[3.5-20.0]	[0.4-7.2]	[1.9-13.1]
Dump or leave rubbish anywhere	%	1.8	1.5	1.5	1.4	2.2	0.7	0.8	0.8
	95% CI	[0.6-5.3]	[0.4-4.7]	[0.5-4.6]	[0.4-5.2]	[0.6-8.0]	[0.1-5.0]	[0.3-2.2]	[0.1-5.3]
Other	%	1.4	0.5	1.6	1.5	0.8	2	0.4	1
	95% CI	[0.6-3.1]	[0.2-1.5]	[0.5-4.5]	[0.7-3.5]	[0.2-3.8]	[0.9-4.7]	[0.1-2.4]	[0.3-4.0]

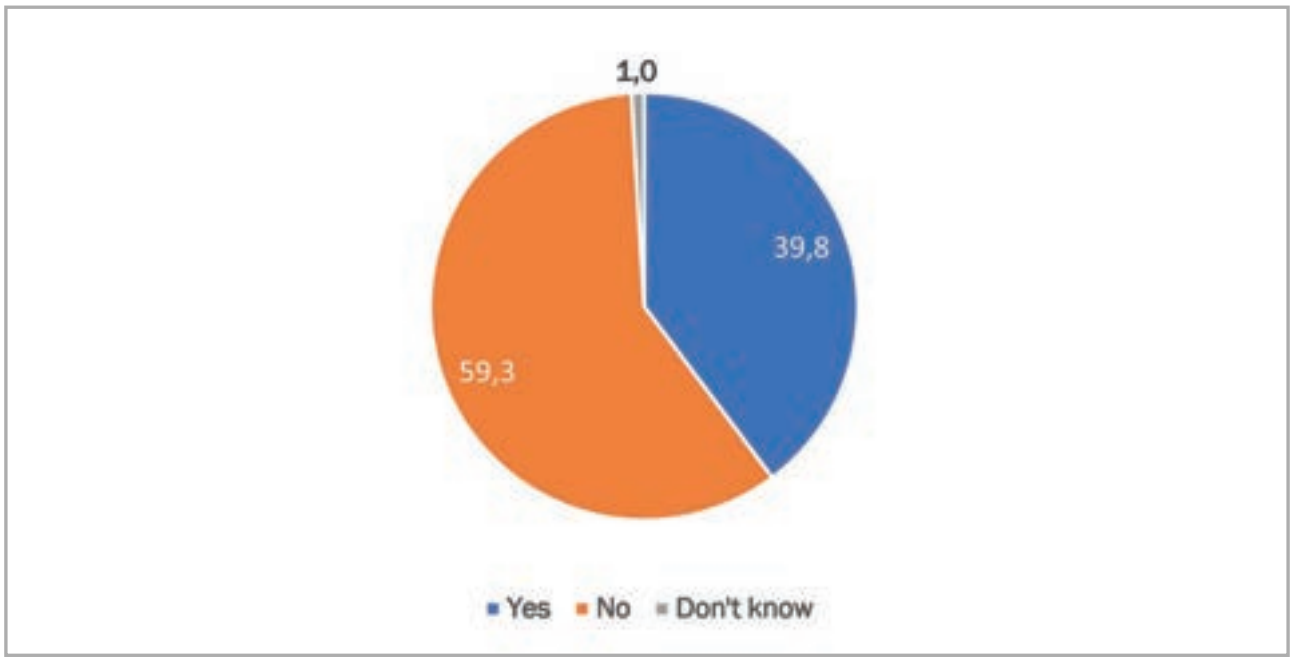


Figure 13: *Proportion of households receiving free refuse removal services (n=3450)*

5.5 Energy

5.5.1 Access to electricity

Figure 14 shows that the majority of households in the Western Cape indicated that they had access to electricity (95.3%). Table 30 shows an almost equal distribution between female-headed (95.1%) and male-headed households (95.6%) that had access to electricity. The city of Cape Town (96.6%) had the highest proportion of households with access to electricity, whilst Cape Winelands (92.5%), Central Karoo (92.2%) and West Coast (92.9%) had almost the same distribution among themselves. Overberg (91.4%) had the lowest proportion of households with access to electricity. Figure 15 shows that 56.5% of the households in the Western Cape Province indicated that they were receiving free electricity as part of the Free Basic Electricity Programme (FBE). Under this programme, qualifying households receive 50kWh per month.

Figure 14: *Proportion of households with access to electricity (n=3 894)*

Table 30: Access to electricity by household head sex and district

	Yes		No		Don't know	
	%	95% CI	%	95% CI	%	95% CI
Household head sex						
Male	95.6	[93.5-97.0]	4	[2.7-6.1]	0.4	[0.2-0.7]
Female	95.1	[92.7-96.8]	4.7	[3.1-7.2]	0.1	[0.0-0.3]
District						
Cape Winelands	92.5	[87.2-95.7]	6.8	[3.9-11.7]	0.7	[0.2-2.1]
Central Karoo	92.2	[85.5-96.0]	7.1	[3.6-13.7]	0.7	[0.3-1.7]
City of Cape Town	96.6	[93.7-98.2]	3.2	[1.8-5.8]	0.2	[0.0-1.2]
Garden Route	94.2	[90.5-96.5]	5.1	[3.0-8.5]	0.7	[0.3-1.5]
Overberg	91.4	[80.7-96.5]	8.4	[3.4-19.3]	0.2	[0.0-1.2]
West Coast	92.9	[90.5-94.7]	5.5	[4.0-7.5]	1.6	[0.8-3.2]

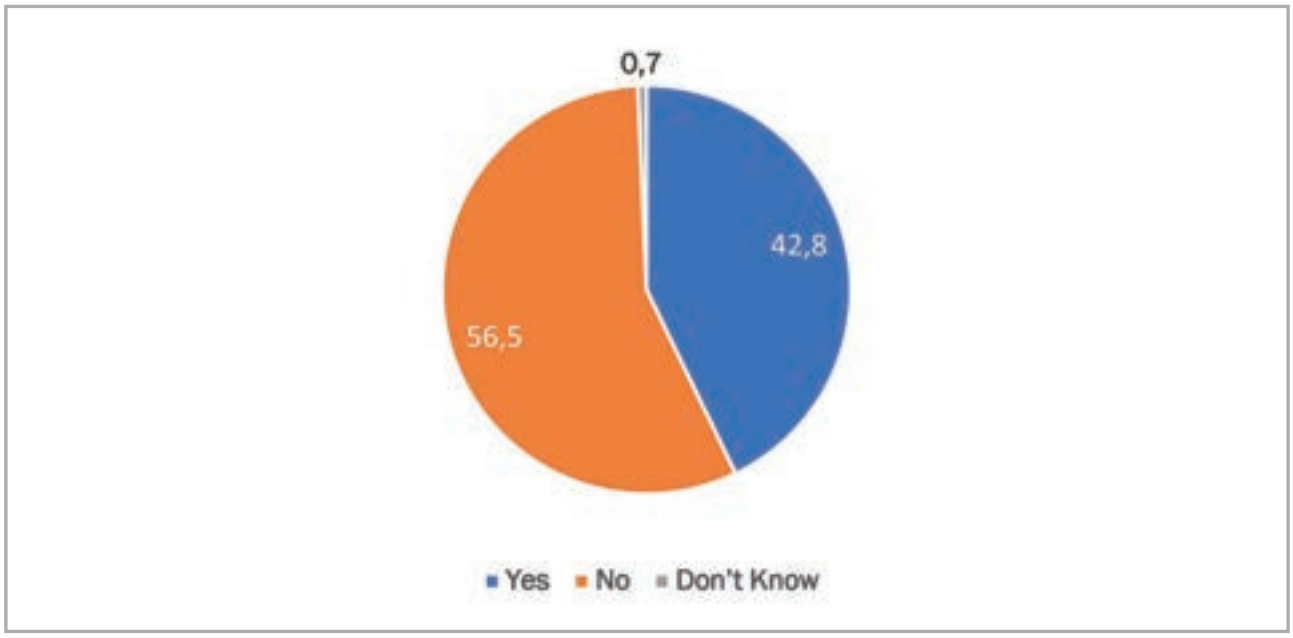


Figure 15: *Proportion of households receiving free electricity (n=3639)*

Table 31 shows households receiving free electricity by the sex of the household head and district. More female-headed households (49%) reported to be receiving free electricity than male-headed households (38.8%). Central Karoo District had the highest proportion of households who were receiving free electricity (54.3%), followed by Garden Route (49.7%) - while Overberg had the highest proportion of households who were not receiving free electricity (63.6%).

Table 31: Households receiving free electricity by sex of the household head and district

	Yes		No		Don't know	
	%	95% CI	%	95% CI	%	95% CI
Household head sex						
Male	38.8	[33.8-44.2]	60.5	[55.0-65.7]	0.7	[0.3-1.6]
Female	49	[42.4-55.6]	50.3	[43.8-56.9]	0.6	[0.2-1.7]
District						
Cape Winelands	36	[27.0-46.1]	62.1	[52.3-71.0]	1.9	[0.9-4.0]
Central Karoo	54.3	[43.1-65.0]	44.6	[34.4-55.3]	1.1	[0.4-3.1]
City of Cape Town	43.4	[36.4-50.8]	56	[48.7-63.1]	0.5	[0.2-1.5]
Garden Route	49.7	[39.8-59.7]	50	[40.0-59.9]	0.3	[0.1-1.1]
Overberg	35.5	[26.7-45.5]	63.6	[53.6-72.5]	0.9	[0.4-2.1]
West Coast	38.3	[29.3-48.2]	61.3	[51.6-70.1]	0.4	[0.1-1.6]

5.5.2 Energy sources for cooking, lighting, water heating, and space heating

Energy sources were categorized into cooking, lighting, water heating, and space heating (Table 32). Our result shows that electricity from the mains (99.1%) was the main energy source for lighting for the majority of the households in the Western Cape Province, followed by gas (9.0%) which was the second most used energy source for cooking. Gas (5.9%) was mainly used for space heating by the Western Cape Province households.

Table 32 shows that the City of Cape Town (91.6%) had the highest proportion of households whose main source of energy for cooking was electricity from the mains, followed by the Central Karoo and Garden Route with an equal distribution (85%). Overberg (11.8%) had the highest proportion of households whose main source of energy for cooking was gas, while Central Karoo (2.2%) used wood as their main source of energy for cooking. There was a high proportion of female-headed households (91.9%) who used electricity from mains as the source of energy for cooking (Table 33).

Table 32: Household's main source of energy for cooking, lighting, water heating, and space heating

	Cooking	Lighting	Water heating	Space heating
	%	%	%	%
Electricity from mains	89.5	99.1	93.4	63.5
Other source of electricity (e.g., Generator)	0.4	0.3	0.7	0.2
Gas	9.0	0.2	2.2	5.9
Paraffin	0.4		0.3	5.4
Wood	0.6		0.8	3.4
Coal	0.0		0.1	0.2
Solar energy	0.1	0.3	0.9	0.1
Other, specify	0.1	0.1	0.1	0.1
None	0.0		1.5	21.2
Candles		0.1		

Table 33: Source of energy for cooking by sex of the household head and district

		Household head sex		District					
		Male	Female	Cape Winelands	Central Karoo	City of Cape Town	Garden Route	Overberg	West Coast
Electricity from mains	%	87.8	91.9	87.7	85	91.6	85	81.7	84.7
	95% CI	[84.8-90.3]	[88.6-94.3]	[83.5-91.0]	[79.1-89.4]	[87.9-94.3]	[80.6-88.6]	[75.7-86.5]	[80.6-88.1]
Other source of electricity (e.g., Generator)	%	0.3	0.4	0.9	0.4	0.2	0.8	0.4	0.6
	95% CI	[0.2-0.6]	[0.1-1.4]	[0.4-2.1]	[0.2-1.3]	[0.0-1.1]	[0.3-2.5]	[0.1-1.6]	[0.2-1.7]
Gas	%	10.9	6.3	9.8	11.3	7.5	11.8	15.4	13.1
	95% CI	[8.6-13.8]	[4.6-8.6]	[6.8-14.0]	[7.8-16.1]	[5.2-10.7]	[9.2-15.2]	[10.9-21.3]	[9.9-17.0]
Paraffin	%	0.4	0.4	0.4	0.3	0.4	0.4	0.3	0.6
	95% CI	[0.1-1.1]	[0.1-1.7]	[0.1-1.5]	[0.1-1.2]	[0.1-2.5]	[0.1-1.7]	[0.1-1.2]	[0.2-1.6]
Wood	%	0.4	0.8	1	2.2	0.3	1.2	0.5	0.8
	95% CI	[0.2-0.8]	[0.3-2.0]	[0.4-2.5]	[0.9-5.1]	[0.1-1.3]	[0.5-3.1]	[0.1-3.1]	[0.3-2.0]

		Household head sex		District					
		Male	Female	Cape Winelands	Central Karoo	City of Cape Town	Garden Route	Overberg	West Coast
Coal	%	0.1	0	0.2	0	0	0.1	0.2	0
	95% CI	[0.0-0.2]	[0.0-0.1]	[0.0-1.3]			[0.0-0.9]	[0.0-1.2]	
Solar energy	%	0.1	0.1	0	0.7	0	0.5	0.2	0.2
	95% CI	[0.0-0.2]	[0.0-0.5]		[0.2-2.3]		[0.1-2.0]	[0.0-1.7]	[0.0-1.1]
Other	%	0.1	0	0	0	0	0	1.1	0.2
	95% CI	[0.0-0.3]	[0.0-0.3]					[0.3-4.6]	[0.0-1.1]
None	%	0	0	0	0	0	0	0.2	0
	95% CI	[0.0-0.1]						[0.0-1.1]	

Table 34 shows that electricity from the mains was the most common energy source for water heating in the Western Cape households, accounting for 95.3% of energy sources used for water heating in the City of Cape Town (Table 36). None reported using coal for water heating as the source of energy in the Central Karoo, City of Cape Town, Garden Route, and the West Coast. Only a few households reported to be using solar energy (less than 4%) as their main energy source for water heating among Western Cape households. The majority of male-headed households (94.1%) used electricity from mains as the source of energy for water heating (Table 34).

Table 34: Source of energy for water heating by sex of the household head and district

		Household head sex		Districts					
		Male	Female	Cape Winelands	Central Karoo	City of Cape Town	Garden Route	Overberg	West Coast
Electricity from mains	%	94.1	92.5	89.4	90.5	95.3	90.8	91.2	88.1
	95% CI	[91.9-95.6]	[89.2-94.8]	[84.6-92.8]	[86.6-93.4]	[92.0-97.3]	[87.0-93.5]	[86.7-94.3]	[83.2-91.7]
Other source of electricity (e.g., Generator)	%	0.7	0.8	0.7	0.6	0.7	1.1	0.8	0.3
	95% CI	[0.3-1.6]	[0.3-2.1]	[0.3-1.8]	[0.2-1.4]	[0.3-1.8]	[0.4-2.7]	[0.3-2.1]	[0.1-1.1]
Gas	%	2.7	1.5	3.5	2.6	1.7	2.7	3	3.6
	95% CI	[1.7-4.1]	[0.9-2.7]	[1.9-6.3]	[1.5-4.7]	[0.9-3.3]	[1.7-4.2]	[1.8-4.9]	[2.1-6.1]
Paraffin	%	0.3	0.3	0.4	0.2	0.4	0	0.2	0.2
	95% CI	[0.1-1.2]	[0.1-1.9]	[0.1-1.5]	[0.0-1.1]	[0.1-2.5]		[0.0-1.1]	[0.0-1.1]
Wood	%	0.6	1.2	1.5	2.1	0.5	1.7	1	1
	95% CI	[0.3-1.0]	[0.5-2.4]	[0.7-3.4]	[0.9-5.0]	[0.2-1.4]	[0.9-3.2]	[0.3-3.0]	[0.5-2.0]
Coal	%	0	0.1	0.4	0	0	0	0.2	0
	95% CI	[0.0-0.2]	[0.0-0.3]	[0.1-2.5]				[0.0-1.2]	
Solar energy	%	0.8	1.1	1.3	1.3	0.3	2	2.1	3.5
	95% CI	[0.4-1.5]	[0.6-2.2]	[0.5-3.0]	[0.5-3.5]	[0.1-1.3]	[1.1-3.7]	[0.6-7.2]	[1.1-10.0]
Other	%	0.1	0	0	0	0	0	1.1	0
	95% CI	[0.0-0.3]	[0.0-0.3]					[0.3-4.6]	
None	%	0.8	2.5	2.9	2.7	1.1	1.8	0.5	3.4
	95% CI	[0.4-1.7]	[1.4-4.6]	[1.3-6.4]	[1.4-5.3]	[0.4-3.1]	[0.8-4.0]	[0.1-3.4]	[1.8-6.6]

Table 35 shows that the predominant energy source for space heating was electricity from the mains, with Cape Winelands being the highest (65.3%). Nearly one-third (30.5%) of the households did not use anything for space heating in the Garden Route District. Wood was mainly used in Central Karoo (9.7%) for space heating. Female-headed households (64.4%) had the highest proportion of households using electricity from the mains than male-headed households (63%).

Table 35: Main source of energy for space heating by sex of the household head and district

		Household head sex		Districts					
		Male	Female	Cape Winelands	Central Karoo	City of Cape Town	Garden Route	Overberg	West Coast
Electricity from mains	%	63	64.4	65.3	48.9	66	56	60.4	53
	95% CI	[58.9-66.9]	[59.6-68.9]	[56.6-73.1]	[42.0-55.9]	[60.2-71.4]	[48.3-63.5]	[53.8-66.5]	[47.8-58.2]
Other source of electricity (e.g., Generator, etc.)	%	0.1	0.3	0.4	0.1	0.2	0.2	0.5	0.2
	95% CI	[0.1-0.3]	[0.1-2.1]	[0.1-1.5]	[0.0-1.0]	[0.0-1.4]	[0.0-1.1]	[0.2-1.4]	[0.0-1.1]
Gas	%	5.7	6.2	3.4	2.6	6.8	4.1	7.5	3.2
	95% CI	[3.9-8.2]	[3.8-9.8]	[2.1-5.4]	[1.5-4.3]	[4.5-10.0]	[2.9-5.8]	[5.2-10.8]	[1.8-5.7]
Paraffin	%	4.7	6.1	8.3	1.6	6.1	2.6	4.1	0.9
	95% CI	[3.1-7.2]	[3.6-10.2]	[4.1-16.1]	[0.8-3.2]	[3.5-10.4]	[1.6-4.2]	[2.1-7.7]	[0.2-4.6]
Wood	%	4.4	2.1	3.4	9.7	2.7	5.9	7.7	2.5
	95% CI	[2.9-6.6]	[1.2-3.4]	[1.9-5.9]	[6.1-14.9]	[1.2-5.6]	[3.7-9.3]	[4.9-12.0]	[1.2-5.3]
Coal	%	0.3	0	0	0.9	0.2	0	0.5	0.5
	95% CI	[0.1-1.1]	[0.0-0.2]		[0.3-2.9]	[0.0-1.3]		[0.2-1.6]	[0.2-1.4]
Solar energy	%	0.1	0.1	0	0.2	0	0.5	1.1	0.2
	95% CI	[0.0-0.5]	[0.0-0.5]		[0.0-1.4]		[0.1-2.0]	[0.2-5.2]	[0.0-1.1]
Other	%	0.2	0	0	0	0.2	0.1	0.2	0.2
	95% CI	[0.1-1.1]				[0.0-1.1]	[0.0-0.9]	[0.0-1.1]	[0.0-1.1]
None	%	21.4	20.8	19.3	36	18	30.5	18	39.4
	95% CI	[17.1-26.6]	[16.0-26.5]	[13.1-27.4]	[28.8-44.0]	[12.8-24.5]	[25.1-36.5]	[12.9-24.4]	[33.5-45.6]

6 Agriculture

6.1 Agriculture and Production Systems

The aim of this section, which focuses on the food availability aspect of food security, is to explain how various households in the Western Cape Province produce food. In the African environment, many households depend on agriculture as their main source of food; as a result, they raise crops and cattle to feed their households. As a result, this section will describe trends in agricultural productivity, land availability, and ownership throughout the several districts.

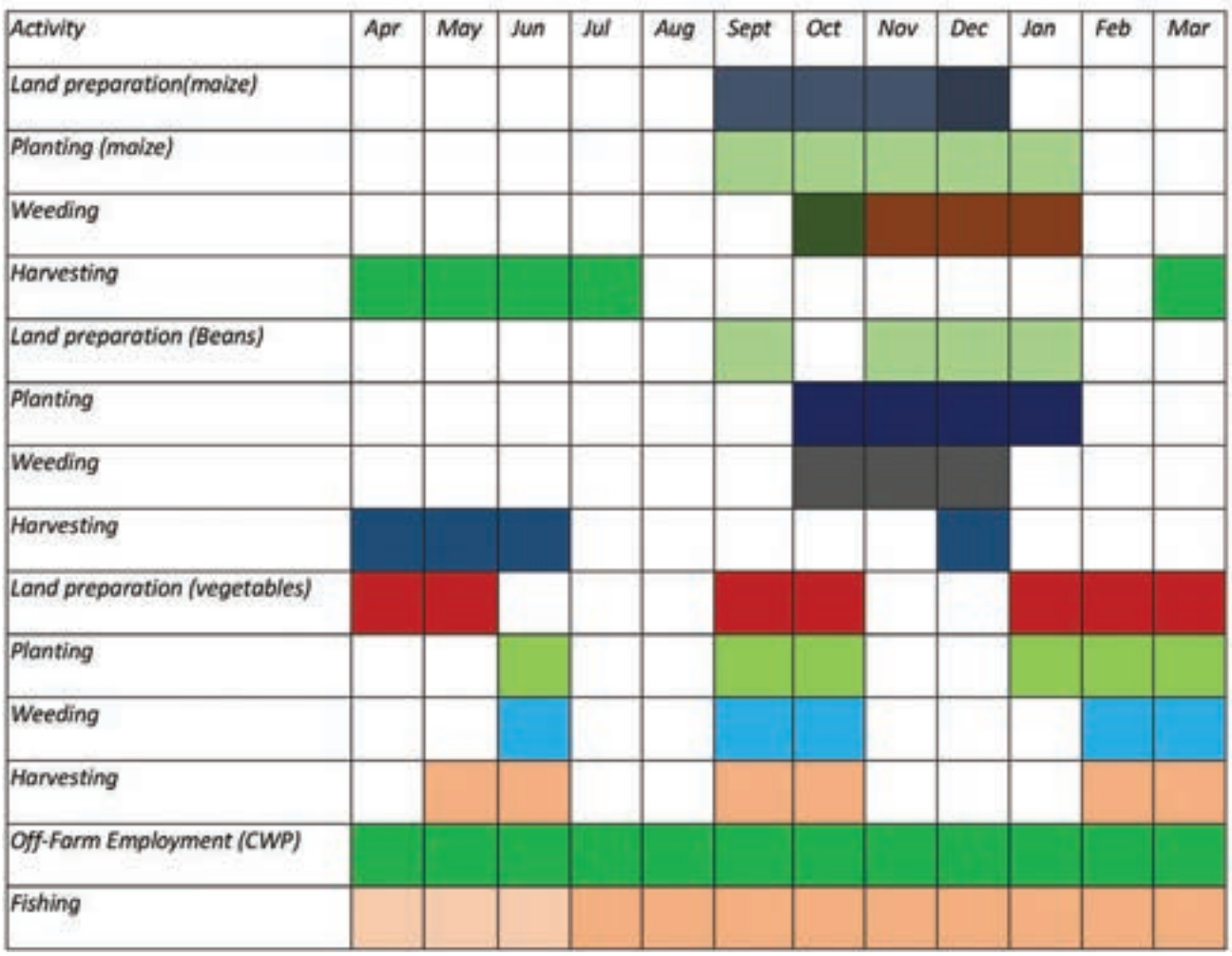


Figure 16: *Seasonal calendar*

Findings from the HEA focus group discussions indicate that agricultural production and value chains have a critical role in household food and nutrition security. The figure below depicts a seasonal calendar in the Western Cape Province. The rain season (September to

February) is characterised by land preparation, planting, and weeding. Much of the rural life in the zone is still determined by agricultural seasons, although this has been ameliorated by employment, fishing, and social grants, which are year-round contributors to people's livelihoods. Livelihood information is organised temporally by consumption year, which begins with the start of the main dry harvest and runs through to just before the next year's main dry harvest. The main dry harvest begins in May, so the consumption year begins that month and runs up until the end of the following April. The livelihood strategies presented in this document apply to a particular year, one that is neither very good nor bad but is 'typical', or occurs frequently. The main season for farming begins with land preparation in spring, followed by ploughing and planting, depending on the timing of the rains. Weeding (a period of intense activity and one in which work opportunities increase) takes place from December to April, with the dry harvest (another period for employment) beginning in April. The main crops grown during this period are maize, beans, and vegetables. Fishing is done throughout the year and contributes significantly to the livelihood of many households in the province.

6.1.1 Household access to land

When it comes to land rights, South Africa has a dual system that consists of statute law enshrined in the Constitution and customary law enshrined mostly in patrilineal tribal traditions and practices (Toulmin, 2008). Overall, access to land by households in the Western Cape Province is extremely low (see Figure 17) with at least 70% of households in all the five district municipalities reporting not having access to land. Overberg, Cape Winelands, and Central Karoo districts are the three districts in the province with the highest percentage of households who have access to land (29%) as shown in Figure 17. The district with the least number of households with access to land is the West Coast District municipality, with 20%.

It should be noted that most of the land in the Western Cape Province is privately owned. Within the West Coast District, however, there are some few areas where ownership should be noted: Moravian Mission Stations where land is communally owned by the church i.e., Goedverwhact, Wittewater and Wupperthal. There is land held by the trust for the community by the national department responsible for land reform in terms of The Rural Areas Act, Act 9 of 1987 i.e., Ebenhaeser. There is also West Coast National Parks owned by SANParks. Saldanha Port is owned by the Transnet Port Authority. The region is also known for its Rooibos tea production, which is the only place in the world where it is produced. It is also known for its production of wheat, often called the breadbasket of South Africa.

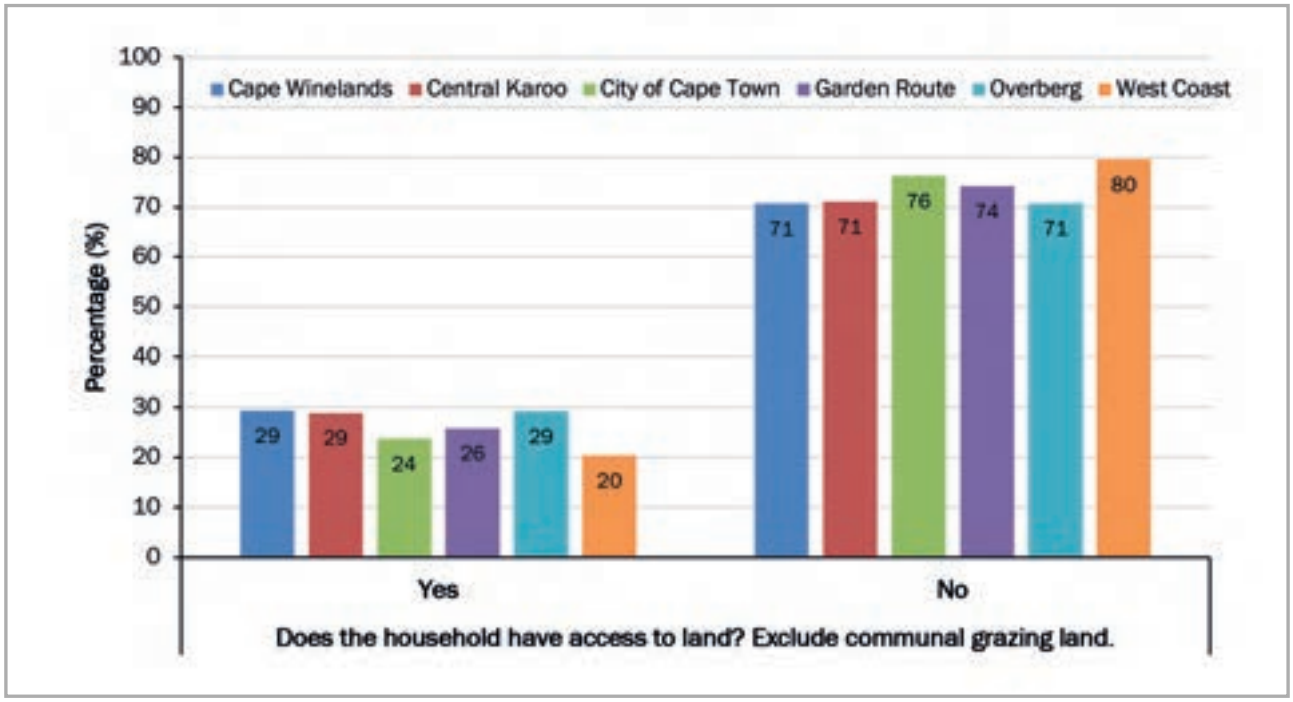


Figure 17: *Household access to land in the Western Cape Province*

Disaggregated by gender, male-headed households on average, have a higher percentage when it comes to access to land. This is a little bit pronounced among males in Cape Winelands, Overberg, and Garden Route, with 68.6%, 67.9% and 65.8%, respectively.

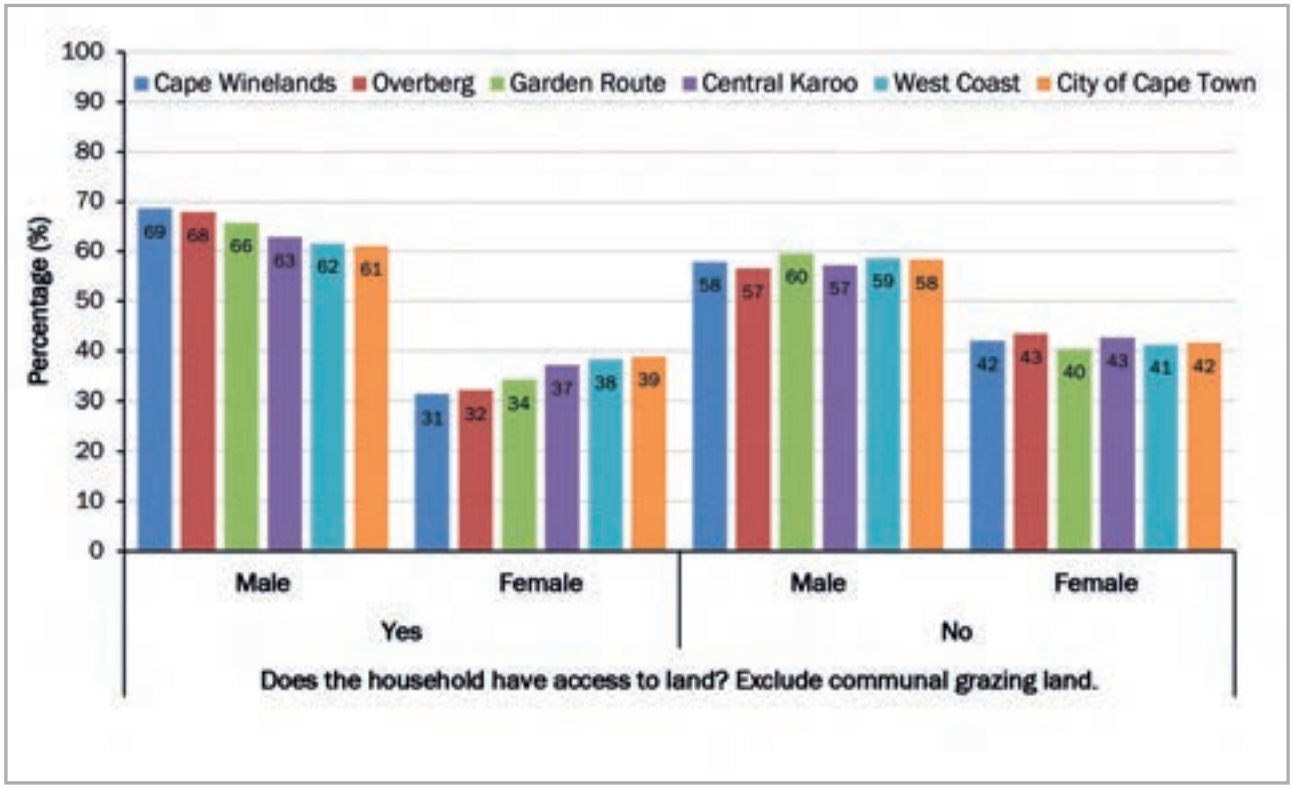


Figure 18: *Land access disaggregated according to household head sex*

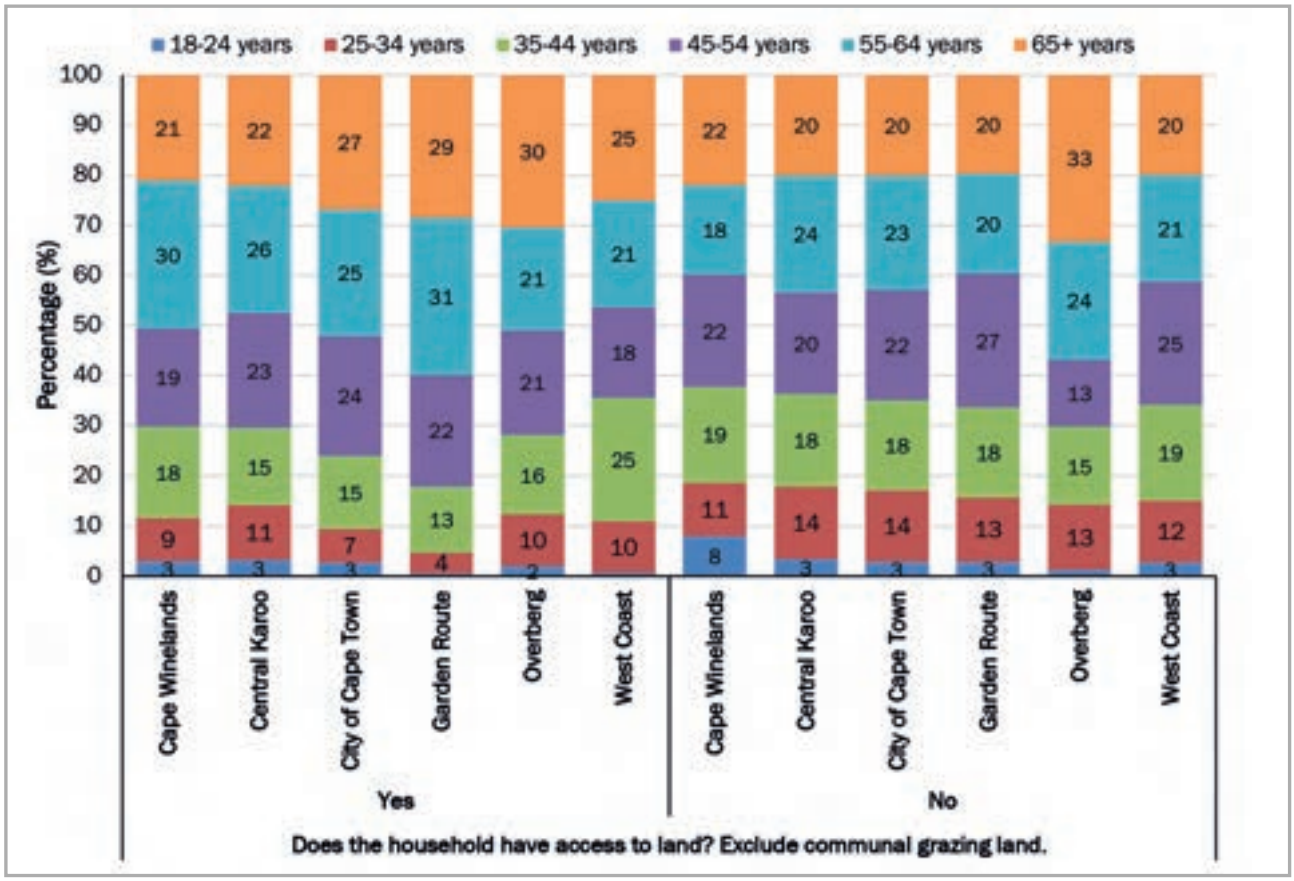


Figure 19: *Access to land disaggregated according to age*

Land access varied disproportionately according to the different age categories, as shown in Figure 19. Entirely, all the respondents in the 18-24 years age category have extremely limited access to land across the five districts, except for the Cape Winelands District, wherein 8% of the 18-24 years age group have access to the land. It should be noted that, as is expected, in a well-functioning society, we expected low levels of child/youth-headed households, hence the extremely low levels of the youth with access to land. As expected, access to land increased with an increase in age, hence the age group between 25-44 years have the highest percentage of access to land.

6.1.2 Land tenure system

Results from the household survey show that of the land that they access to, most of it is owned by the households (Figure 20), with Overberg District households at the forefront with 92.7%, followed by the other districts with at least 80% of the households owning the land they have access to. There is, however, a small percentage of households who reside on land which is rented i.e., Cape Winelands and West Coast districts have the highest number of households renting, reported at 16.3% and 15.2%, respectively. In all the districts, almost all the households have access to land, which is less than 3ha. This result indicates that the majority of the reported land owned is merely for residential purposes and not enough for agriculture production purposes (Figure 21). Ownership of the land in this context is a small area for dwelling with extremely limited backyard farming or gardening. Garden Route has the largest percentage of households (30%) with yards bigger than 500m^2. Of that percentage, larger than 500m^2, 16% is bigger but less than 1000m^2 and 6 % is larger than 1000m^2 but less than 2000m^2.

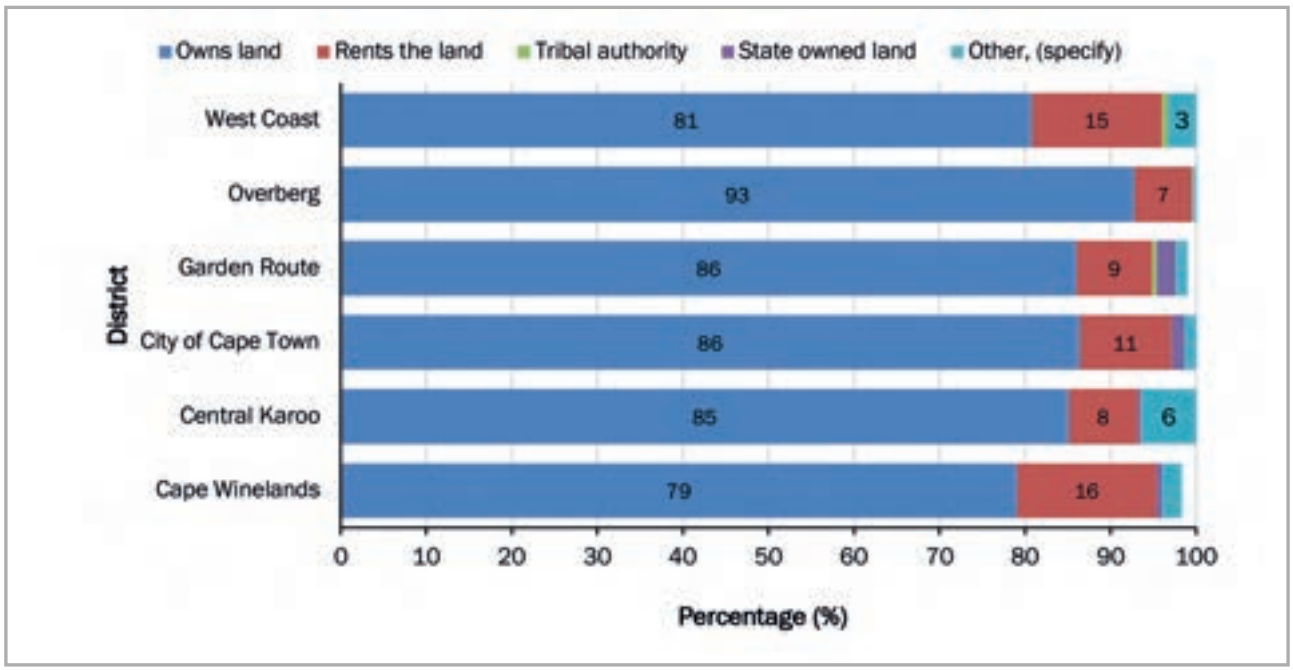


Figure 20: *Land tenure in the Western Cape Province*

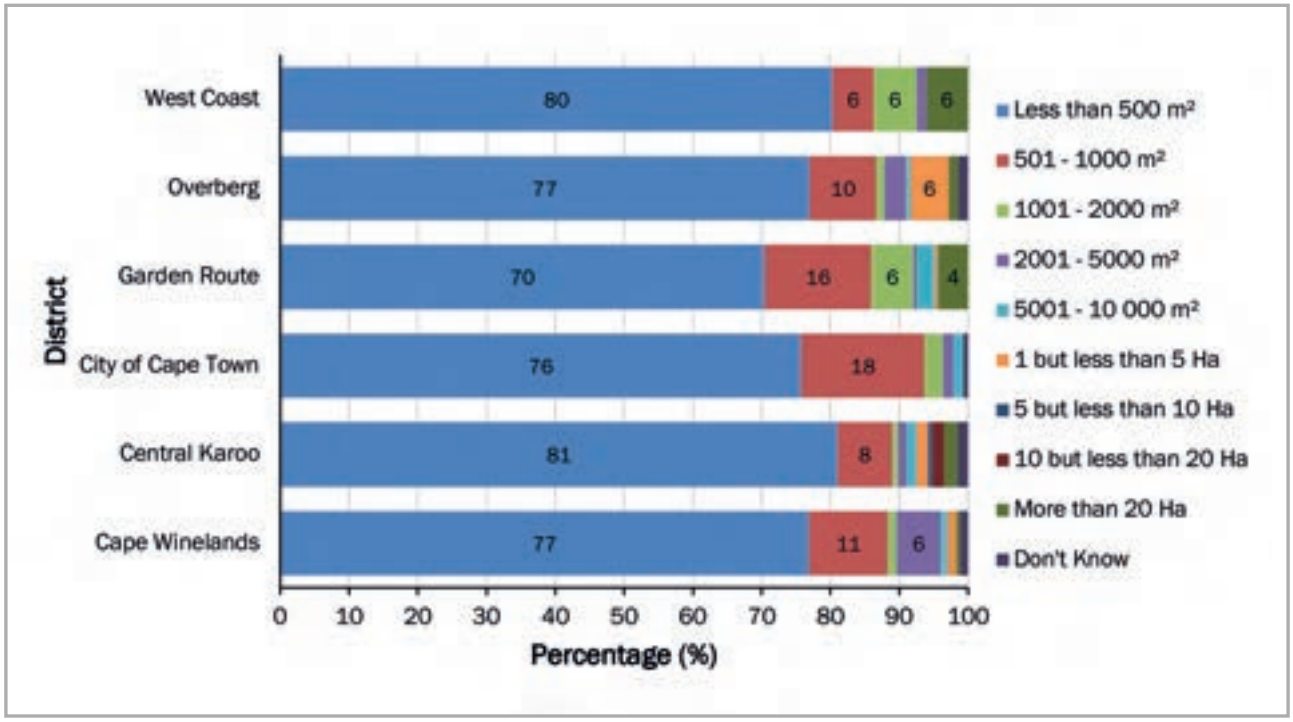


Figure 21: The approximated agricultural land size accessed by households

6.1.3 Use of land for food production or other agricultural products

Within the province, the number of households who use the land for food and agricultural production is extremely low (Figure 22). Only Garden Route District has a slightly higher percentage (30%) of households who have access to land using it for agricultural purposes (Figure 22). It should be noted that a higher percentage (above 75% in all municipalities) of households reported that their yards are less than 500m^2, except for Garden Route District, hence the low level of households practising agriculture. Therefore, the land that was regarded as 'owned' was primarily meant for residential purposes with no adequate opportunities for backyard farming. The low level of involvement of the households in agricultural activities on their land might be influenced by the high concentration of commercial farms and wineries in the province.

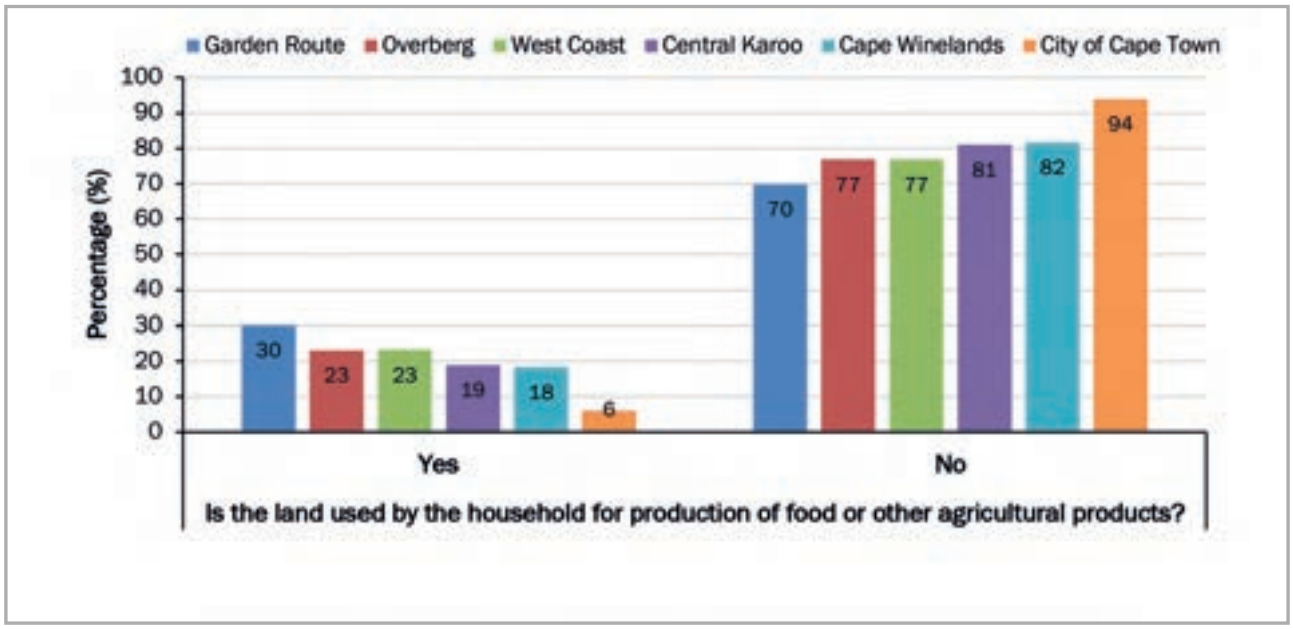


Figure 22: *Land use for food and other agricultural production*

6.1.4 Crop and livestock production

Households in the Western Cape Province are practising livestock production at a low rate. West Coast District is the only district with a slightly higher percentage of livestock production (38%), it is then followed by Garden Route District with 28%. The low level of participation by households in livestock production can ascribed to the small size of the stands, high proportion of commercial farms, and wineries in the area.

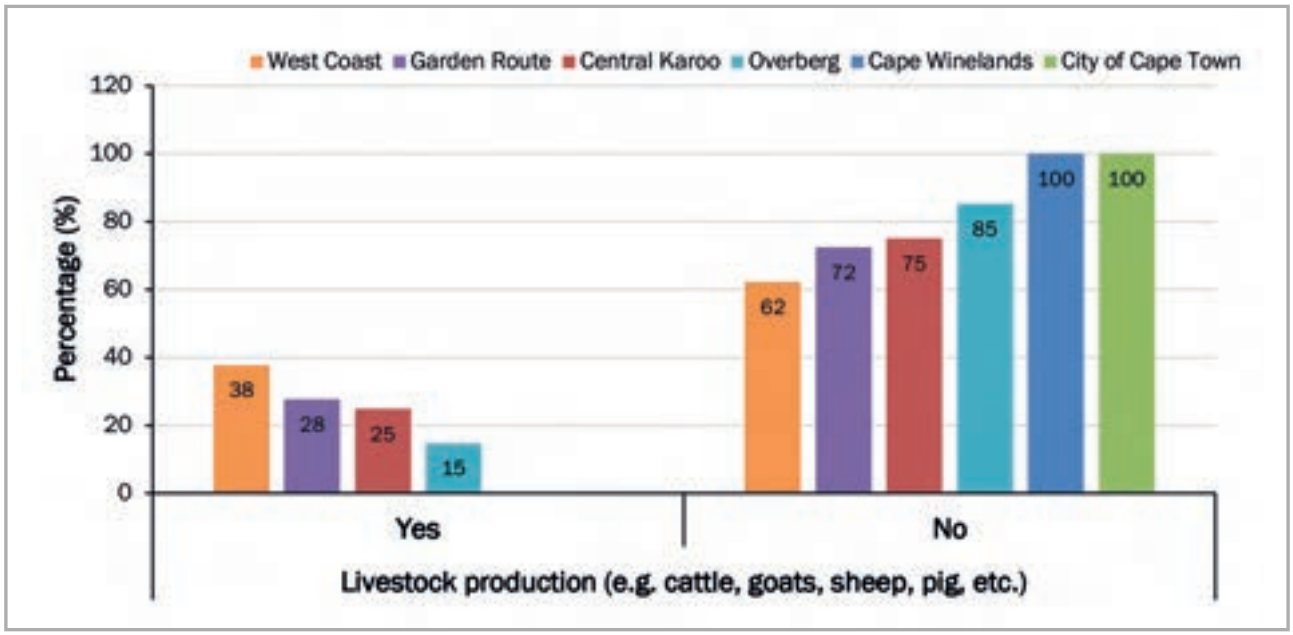


Figure 23: *Livestock production by district*

Generally, poultry production is practised by an extremely low number of households in the Western Cape Province. The results showed that there are no households which practise poultry production within the City of Cape Town metropolitan. The least level of poultry production was reported in Cape Winelands and Overberg districts, which recorded 3% and 7%, respectively (Figure 24).

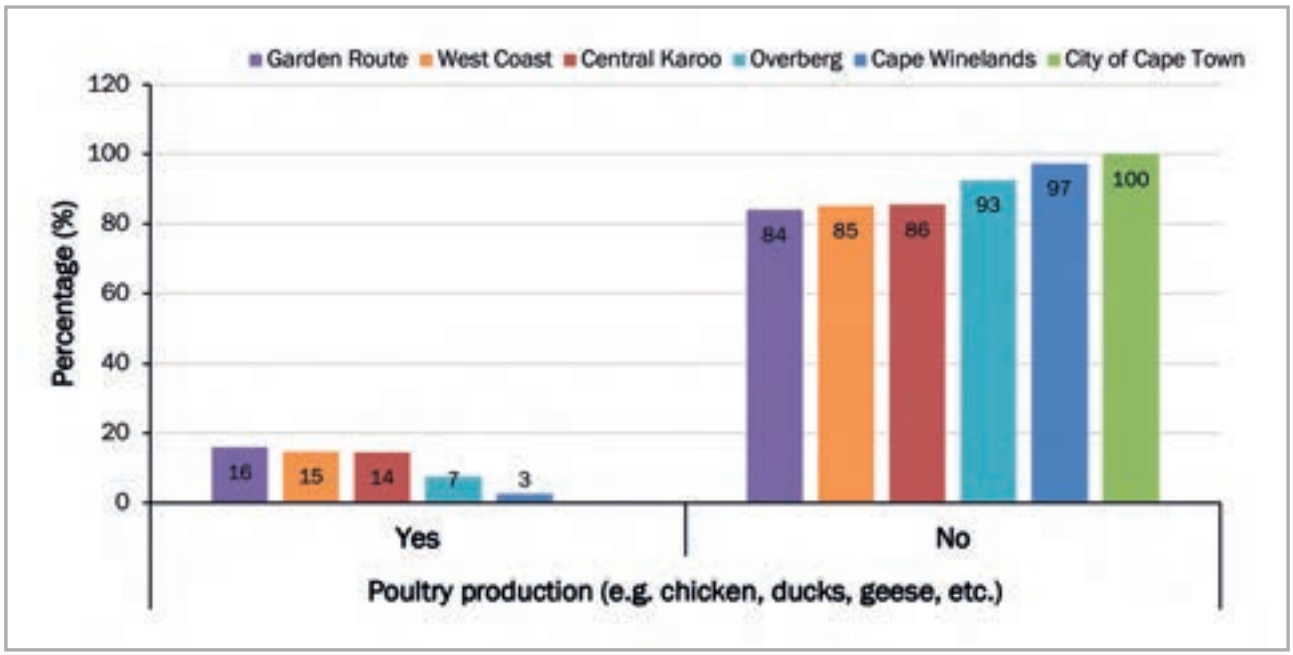


Figure 24: *Poultry production by district*

Households in the Western Cape Province reported an extremely low percentage of engagement in grain crop production, with Garden Route and West Coast districts reporting to have some fairly low level of engagement in crop production at 17% and 9%, respectively (Figure 25). Such low levels of grain production can be ascribed to the fact that most of the households have smaller yards (less than 500m^2). Even though the Western Cape (mainly the West Coast) is known for its high-value crops production i.e., wheat and hops, the households have reported a low percentage of production.

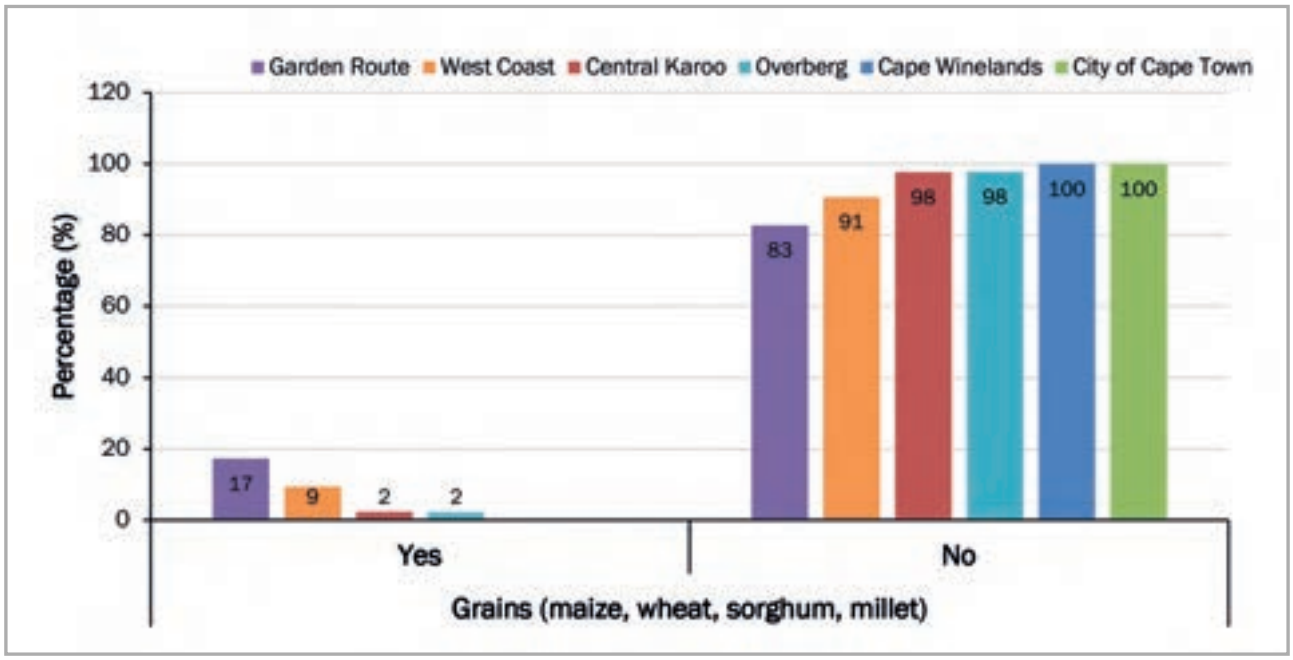


Figure 25: *Household involvement in crop production*

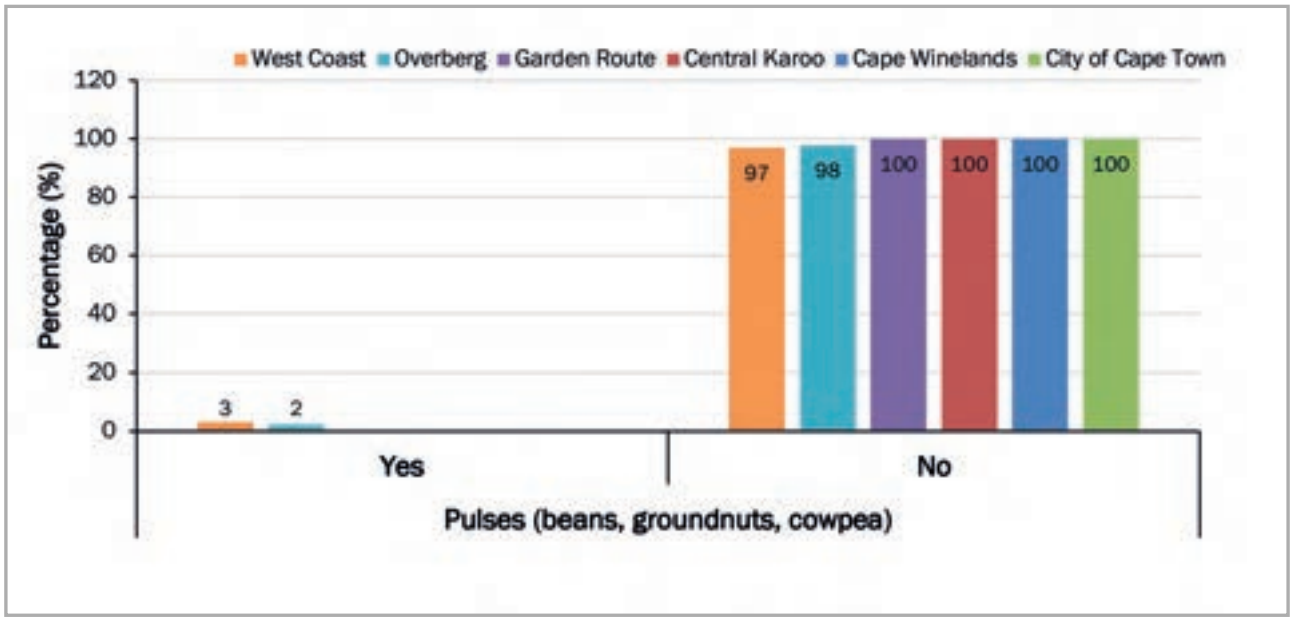


Figure 26: *Pulses Production by district*

The production of pulses was reported to be almost entirely not practised by most households in the Western Cape Province within all six districts (Figure 26). Only the West Coast and Overberg districts have reported it, with 3% and 2%, respectively.

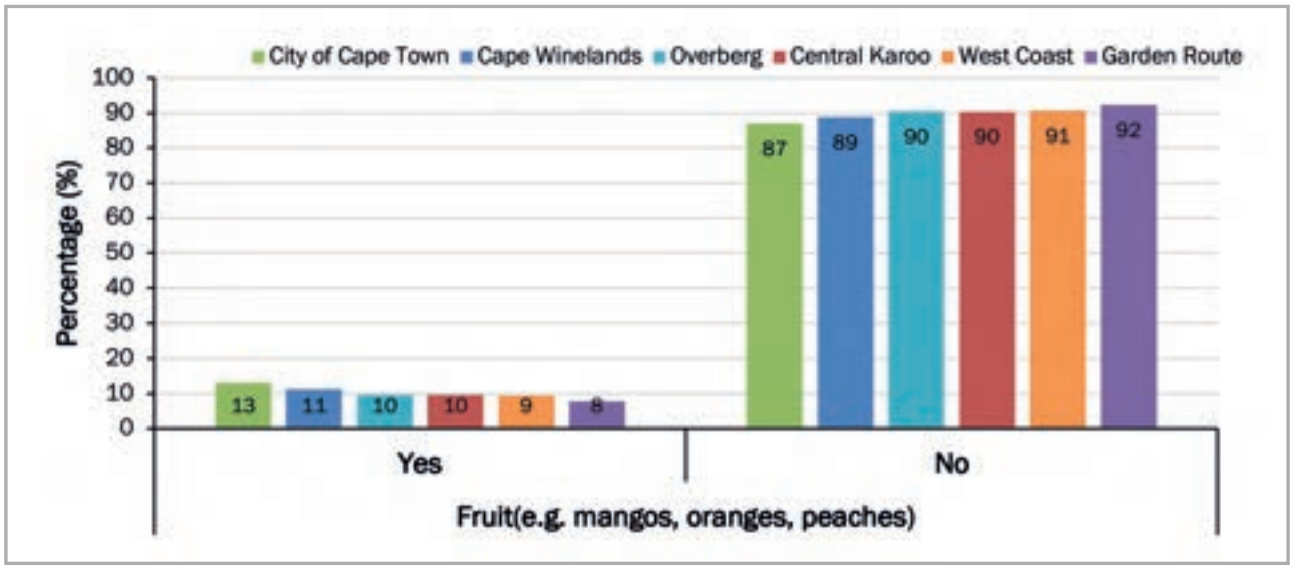


Figure 27: *Household fruit production*

Fruit production was reported to be low in all the districts in the Western Cape Province. The highest engagement on fruit production was reported to be 13% in the City of Cape Town. It should be noted that the province is known to be the biggest producer of citrus fruits and has the biggest factories for canned fruits in South Africa.

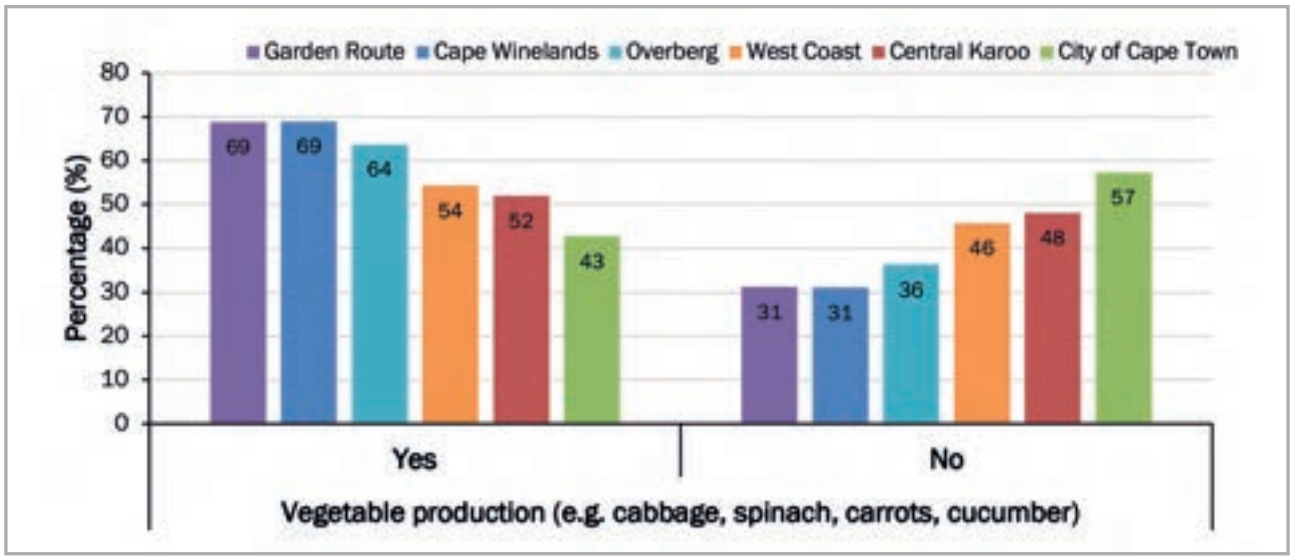


Figure 28: *Household vegetable production*

6.1.5 Major crops grown

Crop production plays a major role in supplementing food availability among the rural households in the province. Qualitative results from HEA show that maize, beans, potatoes, and vegetables are the major crops grown in the open access livelihood zones of the province. Hence agricultural extension services for both livestock and crops are needed by most of the households in these areas.

6.2 Wealth Breakdown, Food, and Income Sources

Wealth breakdown is the process by which people within a livelihood zone are grouped together using local definitions of wealth and the quantification of their assets. The wealth breakdowns are used to identify the poorest households or those that are most vulnerable to projected shocks. Criteria was generated by communities and are, therefore, credible and locally relevant sources of information on vulnerability. The level of division depended on how the community viewed their society, and the purpose of the analysis. The wealth

group in this case is a group of households within the same community who share similar capacities to exploit the different food and income options within a particular livelihood zone. It disaggregated the population into common 'access' groups, which allowed researchers to see important differences in household vulnerabilities to different shocks and to estimate numbers of people who may be affected by different economic changes.

Sources of food are expressed in terms of contribution to the minimum human food energy needs, which is 8,800 kJ/person/day. Wealthier households may consume considerably more than this, for example 12,144 kJ/person/day, which is 138% of minimum food needs. Some of this consumption may be wasted, for example when food is thrown away or incompletely eaten. Even the poorest households may consume slightly more than the minimum requirement, for example 111%, or 9,768 kJ/person/day.

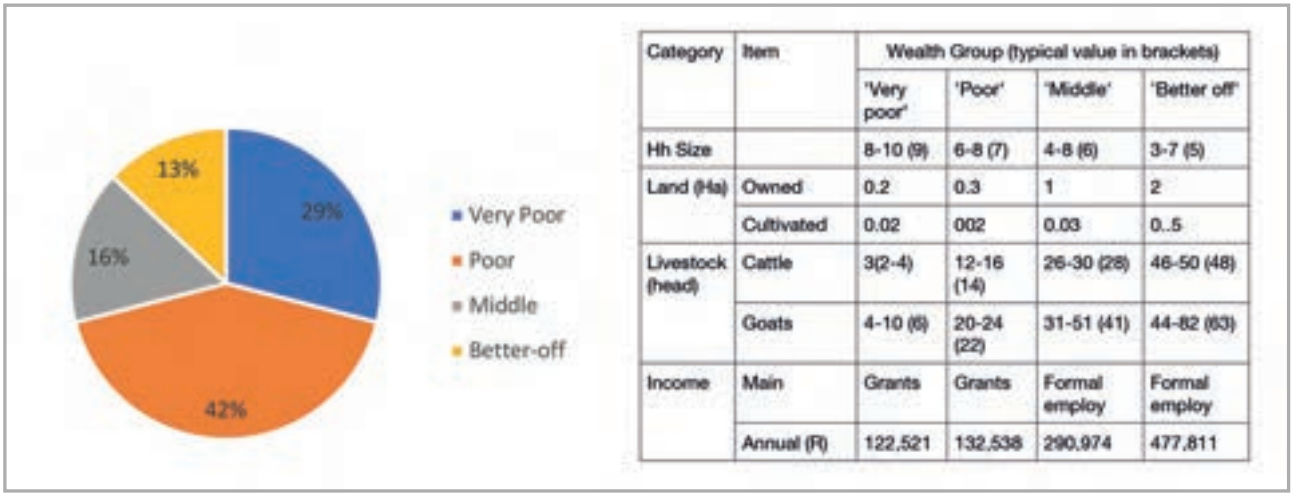
The analysis showed that geography plays a critical role in determining household's options for obtaining food and income in a society. However, it is not the only factor that determines the pattern of livelihood. While geography tends to define a household's options for obtaining food and income, the ability to exploit those options and to survive in a crisis is determined largely by wealth. In other words, what people have by way of land, capital, and livestock, together with their educational status and access to political and social networks determines the ways in which they are able to get food and cash, as well as the ways in which they will respond to sudden or long-term change.

This section provides the analysis of wealth, food, and income sources in the three livelihood zones in the province. The analysis focused on factors that determine how well-off community members might be based on prevailing livelihood assets. The wealth breakdown is the analysis which entails grouping households based on wealth and assets. The investigation of differences between households is central to building a meaningful analysis of food security and vulnerability to different hazards. Results emerging from the HEA focus group discussions indicate that most of the households in Western Cape Province are 'poor' and 'very poor'. This result is a cause for concern with regards to government interventions that need to be tailor-made for this province.

6.2.1 Southern Coast Duineveld Livelihood Zone (ZASCD) of Garden Route, Overstrand, and Overberg districts

Wealth in this area is determined by four factors:

1. Employment, a product of education, and good social connections.
2. Ownership of a business, such as a spaza shop or bakkie or taxi.
3. Land holding; and
4. Household livestock ownership.



Category	Item	Wealth Group (typical value in brackets)			
		'Very poor'	'Poor'	'Middle'	'Better off'
Hh Size		8-10 (9)	6-8 (7)	4-8 (6)	3-7 (5)
Land (Ha)	Owned	0.2	0.3	1	2
	Cultivated	0.02	002	0.03	0..5
Livestock (head)	Cattle	3(2-4)	12-16 (14)	26-30 (28)	46-50 (48)
	Goats	4-10 (6)	20-24 (22)	31-51 (41)	44-82 (63)
Income	Main	Grants	Grants	Formal employ	Formal employ
	Annual (R)	122,521	132,538	290,974	477,811

Figure 29: *Wealth breakdown in ZAWSC Livelihood Zone*

Land holdings increase with wealth but not as exponentially as the factors listed above (3 ha across the wealth groups). The wealthiest households, described as the 'better-off', are those with permanent work, a salary and have business opportunities. They have an average annual income of R477,881 compared to the R122,521 of the 'very poor' households. Households that have lower-paying or less permanent formal employment and some business opportunities with average annual income of R290,974 are referred to as the 'middle'. Those who depend primarily on grants are described as the 'poor' and 'very poor'; collectively, they are about 29% of households. These 'very poor' and 'poor' supplement their grant income with casual labour, self-employment and, in very small quantities, crops and livestock.

'Better-off' households are able to develop slightly more land and produce crops for sale, using savings from their other income sources to afford inputs (including labour). Similarly, they derive a small cash benefit from their animals. Middle households also sell crops and livestock or livestock products. During the COVID-19 lockdown restrictions, the 'poor' and 'very poor' households are the ones who suffer the most impacts of food insecurity.

Livestock holdings also increase substantially with wealth. Cattle are considered more as determinants of wealth; wealthier households do keep them, while they may not keep any small stock - although on average, they do keep more goats than poorer households.

6.2.2 Cape Winelands vineyards, fruit, and other farming (ZAVIN) livelihood zone of Cape Winelands District

Wealth in this livelihood zone is determined primarily by three factors:

1. Employment, a product education, and good social connections;
2. Ownership of a business, such as a spaza shop or bakkie or taxi; and
3. Livestock ownership, especially cattle.

Category	Item	Wealth Group (typical value in brackets)			
		'Very poor'	'Poor'	'Middle'	'Better off'
Hh Size		7-9 (8)	5-7 (6)	4-6 (5)	3-5 (4)
Land (Ha)	Owned	0.1	0.1	0.7	1
	Cultivated	0.1	0.1	0.4	1
Livestock (head)	Cattle	1-3(2)	3-5 (4)	10-18 (14)	30-40 (35)
	Goats	2-4 (3)	4-10 (7)	20-30 (25)	30-40 (35)
Income	Main	Grants	Grants	Formal employ	Formal employ

Figure 30: *Wealth breakdown in ZAVIN Livelihood Zone of Capelands District*

Land holdings increase with wealth but not as exponentially as the factors listed above (0.1ha for the poorest against 1ha for the wealthiest). Since farming in this zone is important and this requires resources and capital, the amounts of land owned and cultivated vary with wealth. 'Better-off' households lever their fixed incomes and assets to develop more land and cultivate farms that are eight times larger than those of 'very poor' households.

The wealthiest households, described as the 'better-off', are those with permanent work, a salary, and have business opportunities. They have an average annual income of R303,410 compared to less than R5,000 per month of the 'very poor' households who struggle to meet their daily food and non-food needs. The results indicate income disparities among the 'poor' and 'better-off' households in the livelihood zone. Households that have lower-paying or less permanent formal employment and some business opportunities with an average annual income of R169,363 are referred to as the 'middle'. Those who depend primarily on grants are

described as the 'poor' and 'very poor'; collectively, they are about 71% of households. These 'very poor' and 'poor' supplement their grant income with casual labour, self-employment and, in very small quantities, crops and livestock.

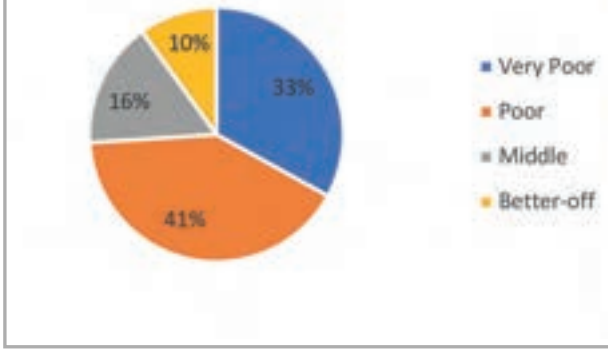
'Better-off' households are able to develop slightly more land and produce crops for sale, using savings from their other income sources to afford inputs (including labour). Similarly, they derive a small cash benefit from their animals. Middle households also sell crops and livestock or livestock products. During the COVID-19 lockdown restrictions, the 'poor' and 'very poor' households are the ones who suffer the most impacts of food insecurity.

During interviews, key informants in the villages tended to use larger household sizes compared with those from other surveys, such as the census. This was possibly due to key informants referring to family units rather than the stricter definition of household. These family units will certainly share some resources, including grants such as pensions and child grants, cultivated land (shared in terms of labour required and production) or the proceeds from casual labour. They are, therefore, used in the ensuing calculations on sources of food and income - these can be scaled to the appropriate household size from the census.

6.2.3 Outeniqua Plateau mixed farming, dairy, and forests (ZAOUT) livelihood zone of Garden Route District

Wealth in this livelihood zone is determined primarily by three factors:

1. Employment, a product of education, and good social connections;
2. Ownership of a business, such as a spaza shop or bakkie or taxi; and
3. Livestock ownership, especially cattle.



Category	Item	Wealth Group (typical value in brackets)			
		'Very poor'	'Poor'	'Middle'	'Better off'
Hh Size		7-9 (8)	5-7 (6)	4-6 (5)	3-5 (4)
Land (Ha)	Owned	0.1	0.1	0.7	1
	Cultivated	0.1	0.1	0.4	1
Livestock (head)	Cattle	1-3(2)	3-5 (4)	10-18 (14)	30-40 (35)
	Goats	2-4 (3)	4-10 (7)	20-30 (25)	30-40 (35)
Income	Main	Grants	Grants	Formal employ	Formal employ

Figure 31: *Wealth breakdown in ZAOUT Livelihood Zone of Garden Route District*

Land holdings increase with wealth but not as exponentially as the factors listed above (0.1ha for the poorest against 1ha for the wealthiest). Since farming in this zone is important and this requires resources and capital, the amounts of land owned and cultivated vary with wealth. 'Better-off' households lever their fixed incomes and assets to develop more land and cultivate farms that are eight times larger than those of 'very poor' households.

The wealthiest households, described as the 'better-off', are those with permanent work, a salary and have business opportunities. They have an average annual income of R303,410 compared to less than R5,000 per month of the 'very poor' households who struggle to meet their daily food and non-food needs. The results indicate income disparities among the 'poor' and 'better-off' households in the livelihood zone. Households that have lower-paying or less permanent formal employment and some business opportunities with average annual income of R169,363 are referred to as the 'middle'. Those who depend primarily on grants are described as the 'poor' and 'very poor'; collectively, they are about 71% of households. These 'very poor' and 'poor' supplement their grant income with casual labour, self-employment and, in very small quantities, crops and livestock.

'Better-off' households can develop slightly more land and produce crops for sale, using savings from their other income sources to afford inputs (including labour). Similarly, they derive a small cash benefit from their animals. 'Middle' households also sell crops and livestock or livestock products. During the COVID-19 lockdown restrictions, the 'poor' and 'very poor' households are the ones who suffer the most impacts of food insecurity.

During interviews, key informants in the villages tended to use larger household sizes compared with those from other surveys, such as the census. This was possibly due to key informants referring to family units rather than the stricter definition of household. These family units will certainly share some resources, including grants such as pensions and child grants, cultivated land (shared in terms of labour required and production) or the proceeds from casual labour. They are, therefore, used in the ensuing calculations on sources of food and income - these can be scaled to the appropriate household size from the census.

6.2.4 Source of food and income in ZASCD zone of Garden Route, Overstrand and Overberg districts

Crop production contributed to 2% and 6% of the food sources for the 'very poor' and 'poor' wealth groups respectively. Food purchases contributed about 66% and 57% of the food needs for the 'very poor' and 'poor' households, respectively. Despite the good rainfall and fertile soils, purchases still made up a significant portion of people's sources of food. The contribution to food energy from non-staple food purchase increased steadily from 29% to 35% across the wealth groups. The 'very poor' and 'poor' households also accessed food from surrounding wild reserves/ forests, fishing, and school feeding programme. The 'very poor' and 'poor' households could hardly cover their basic food and livelihoods needs in normal times, leaving little financial ability to invest in their children's needs, such as education. About 84% and 80% of the 'very poor' and 'poor' households' food needs were drastically affected by COVID-19 restrictions during lockdowns, leaving them vulnerable to food insecurity.

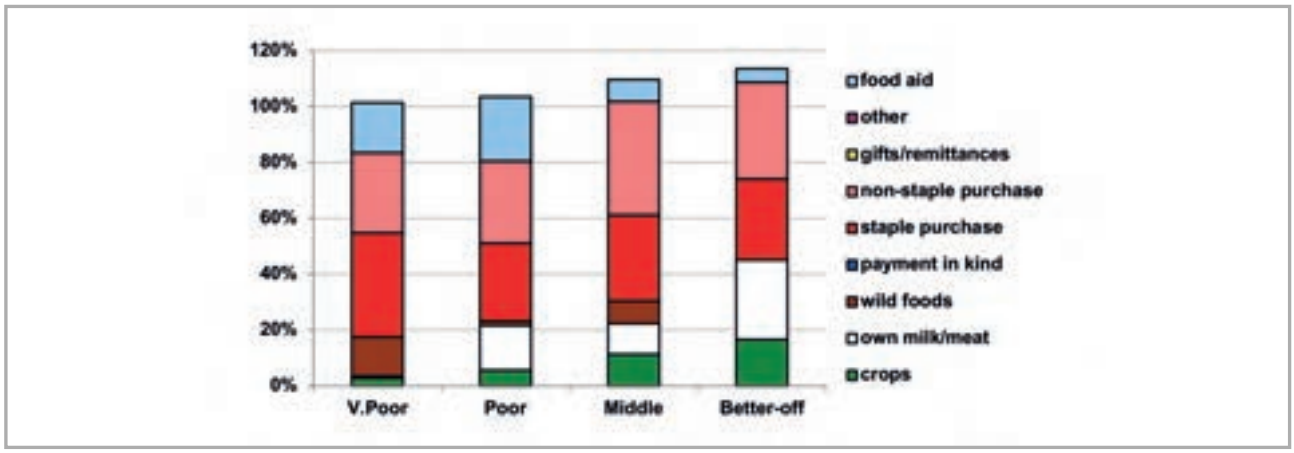


Figure 32: *Sources of food in ZASCD (Expressed as percentage of minimum average food energy needs) for each wealth group*

Wealthier households have capital for inputs and hired labour, ensuring their crops are planted and weeded in time, as well as being protected from pests.
'Middle' and 'better-off' households obtained a significant proportion of their needs from their livestock; this was usually from cow milk and occasional slaughter for meat. Dairy production in this zone is not commensurate with herd sizes and livestock ownership.

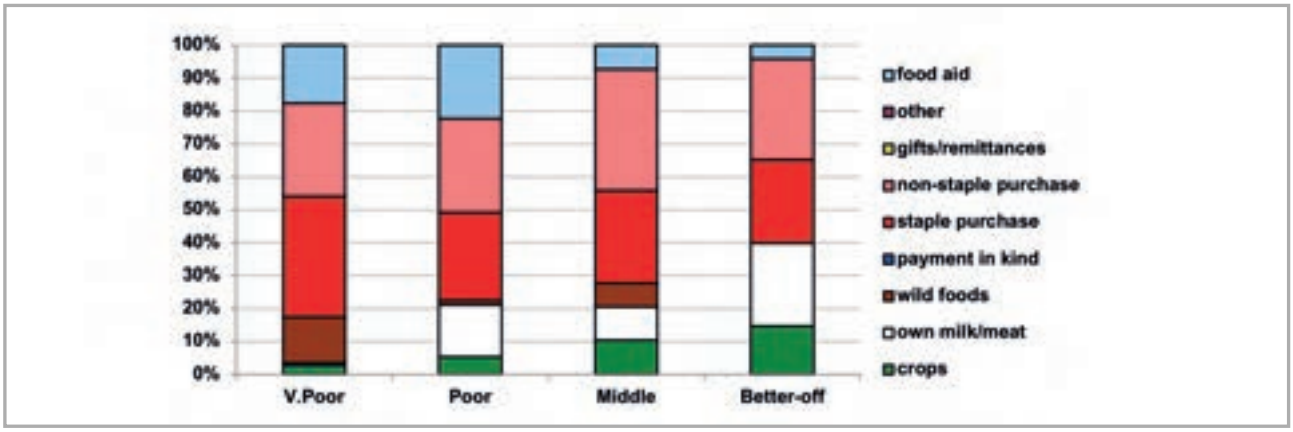


Figure 33: *Sources of food in ZASCD (expressed as percentage of overall total food energy needs) for each wealth group*

The poorest households' children received additional food from school lunches, which is the official food assistance. Wealthier households tend to send their children to fee-paying schools that do not offer meals.

6.2.5 Gender analysis of who produces Food in in ZASCD zone of Garden Route, Overstrand and Overberg districts

Policy makers recognize that youths and women represent a vast human resource potential in development, with their own specific problems, concerns, needs, and aspirations. They need to be promoted to ensure their participation, equity, and equality in all development programmes. Gender and social status play an important role in determining access to food and cash, and responses to shocks and change. 'Poor' female-headed households with little land may work for 'better-off' households to get money to buy food; the 'better-off' may use profits from agriculture and employment as capital to engage in trade and business enterprises. In the event of a crisis and the COVID-19 lockdowns, 'poor' and 'better-off' households were affected differently. The 'poor' households lost opportunities to hire out their labour and obtain income for their daily needs, whereas the 'better-off' households managed to use their savings to cushion their households from food insecurity. Therefore, different wealth groups warrant separate examination for relevant policy options to improve their household welfare.

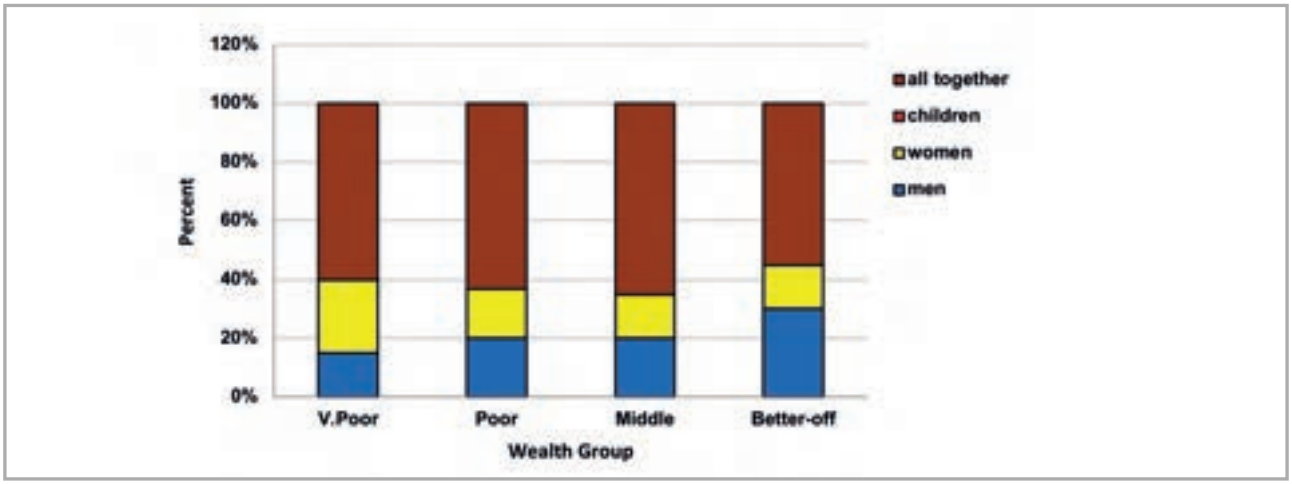


Figure 34: *Gender breakdown of who produces food in the zone for each wealth group*

The results indicated that men and women altogether contributed significantly to generate food. This was about 60 percent across all wealth groups. Women appear to contribute significantly to the production of food among all wealth groups, ranging from 15% among 'better-off' and 25% among 'very poor' households. However, there are still challenges and emerging issues relating to gender mainstreaming and youth participation in development. These include HIV and AIDS, poor youth participation in the development agenda, gender-based

violence (GBV), increased environmental degradation, climate change, and high levels of poverty. Women still face many challenges, including the burden of care, which takes away much of their time for productive work. They also have poor access to extension services, information, inputs, and markets. Hence, addressing the gender gap in development including agriculture could raise the scale of economic activities, crop production, boost agricultural yield, overall GDP, and lift a significant proportion of people out of poverty. Further, there has been a general inadequacy among all the gender structures at all levels to maintain a collective and sustained response to gender and youth empowerment issues.

6.2.6 Sources of cash income in ZASCD Zone of Garden Route, Overstrand, and Overberg districts

Cash incomes varied considerably across wealth groups, with the 'better-off' earning R477,881 per annum, seven times as much as the 'very poor', who earned only R122,521 per annum. Figure 35 below shows this distribution - it must be noted that the bars in the figure are not quartiles, they represent wealth groups and wealth groups are not distributed evenly (see **Wealth Breakdown**, above).

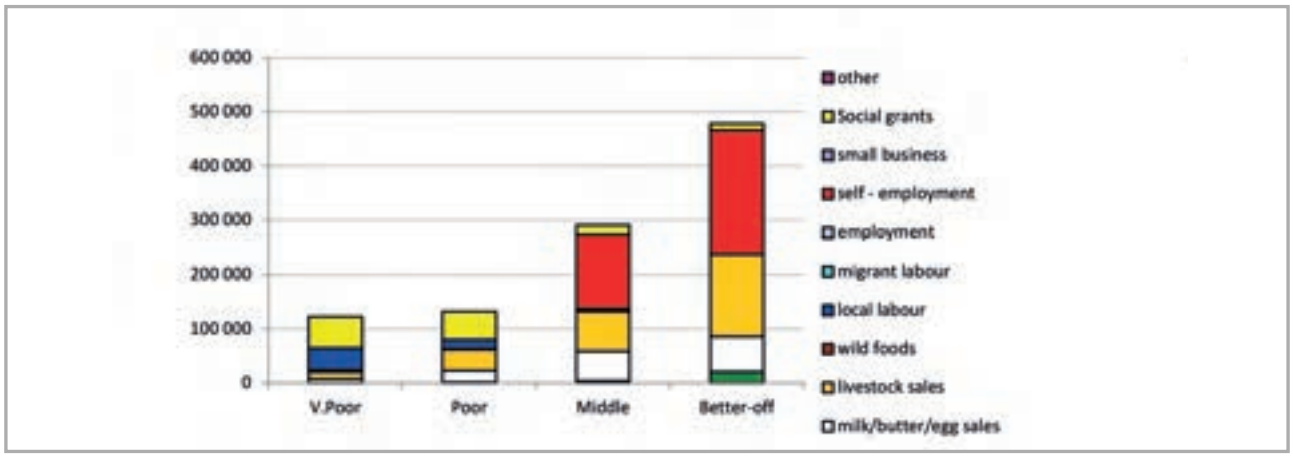


Figure 35: *Sources of annual cash income by wealth group*

The main sources of cash incomes in the zone are employment (both formal and self) - for the 'middle' and 'better-off' - and cash grants for the 'poor' and 'very poor'. This is in keeping with most surveys that ask for the main livelihood source.

However, the point of this enquiry was to gain an understanding of how all livelihood sources come together to make up an income. This is essential because it enables practitioners to link a hazard (such as a price change) to outcomes and it enables other users to see potential areas of intervention. By dividing the value of each source by the total income, we can see these proportions, and this is presented in the graph in Figure 36 below.

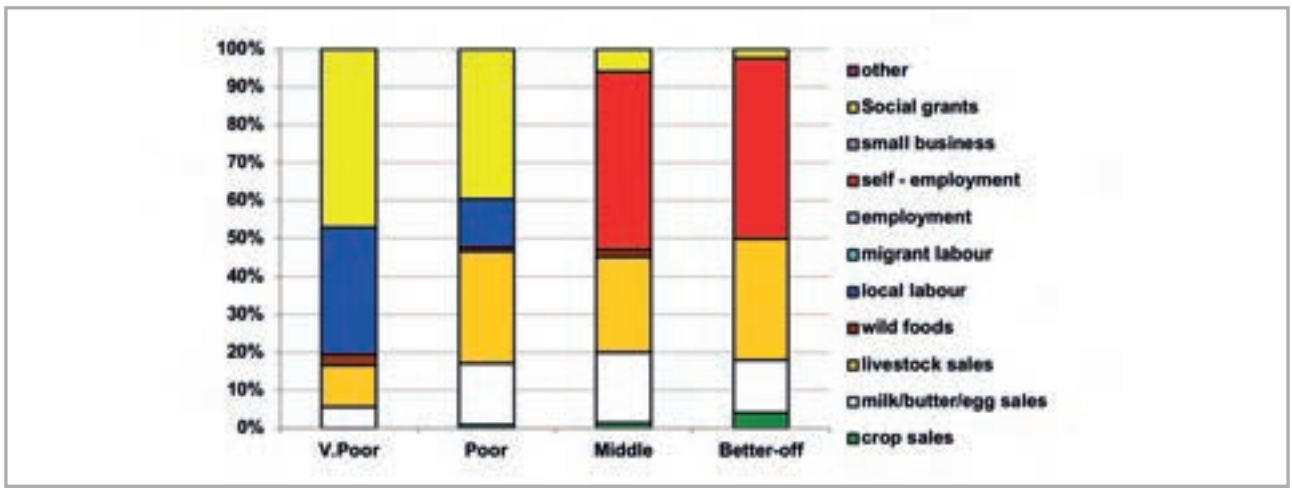


Figure 36: *Sources of annual cash income as a percentage of total, by wealth group*

For the 'very poor' and 'poor', grants made up 46% and 40% of total cash income, respectively; the remainder was from casual labour and employment (mostly domestic work, agricultural piece work, construction jobs, etc.) and self-employment (collecting natural products for sale, weaving, making bricks, etc.). The 'poor' earn small amounts of income through livestock sales - usually goats and gifts/ remittances. This, coupled with a small income from the formal sector, was what distinguishes their livelihoods from that of the 'very poor'. The analysis showed that 'poor' households would lose up to 54 percent of their income sources due to COVID-19 lockdowns and any movement restrictions in the area. Income from casual labour would not be available during the pandemic lockdowns, leading to worsening food security situation for the 'very poor' and 'poor' households who comprise the majority of the population in this area.

The 'middle' and 'better-off' gain their cash from a formal wage or salary for the better part of their income. Some 'middle' households may have a member that works seasonally on the commercial farms, but earnings typically amount to almost R126,000 per annum, while the 'better-off' earn above R168,000 per annum. 'Middle' and 'better-off' households also gain a little cash from grants (for example, pensions and fostering are not means-tested and the probability of a household having a pensioner in it is about one in two). The 'middle' and 'better-off' wealth groups also have employment opportunities and businesses which contribute to their improved livelihood and welfare. These well-off households were able to cushion their food availability and access even during lockdowns as they can buy in bulk and store during any unforeseen event or crisis.

The earnings from livestock products are very low for the 'very poor' and 'poor' households, which is lost productivity. The number of cows that are milked compared with those likely to be lactating is low and this is due to a few factors: lack of economic incentives for milking, lack of time by the cattle-owners (because they are full-time employed), and minimal herd management.

6.2.7 Sources of food and income in ZAVIN of Cape Winelands district

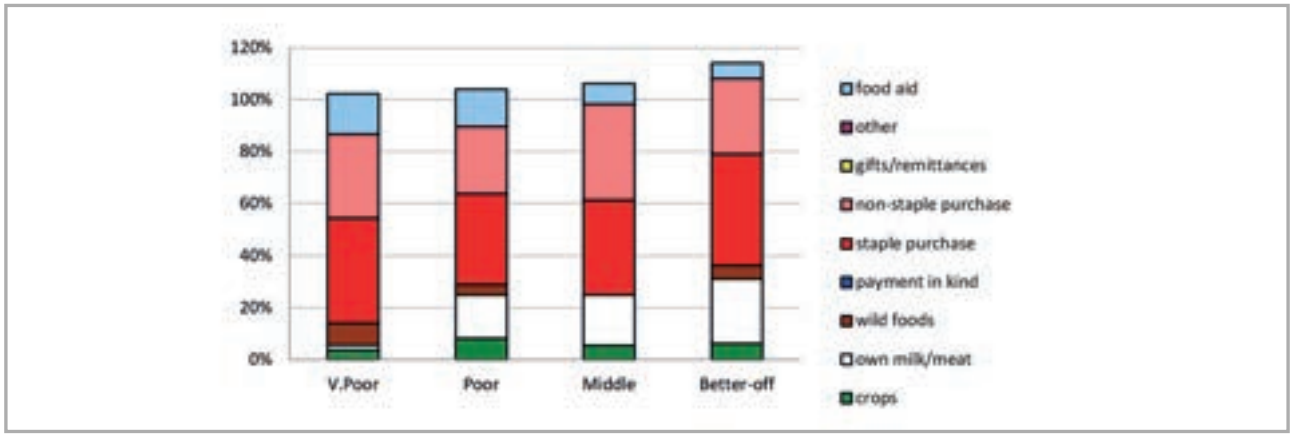


Figure 37: *Sources of food in ZAVIN (expressed as percentage of minimum average food energy needs) for each wealth group*

Purchases were the largest source of people's food, contributing about 76% to 74% of minimum food energy needs. The contribution from staple food purchases decreased steadily as households get wealthier. The contribution from non-staple food purchases never increased with increasing wealth. Most households and all wealth groups also consume food from their own crop production, although the majority of the 'very poor' lack the labour and capital to produce any significant quantities of their own food. The 'better-off' and 'middle' have the highest contribution to their food energy from both staple and non-staple crops, at about 70% to 53% of their minimum needs, respectively. The analysis showed that about 76% and 74% of the food purchases which needed to be obtained on an almost daily basis from local markets were affected for the 'very poor' and 'poor' households in this area during COVID-19 lockdowns. This exacerbated the food insecurity level of the 'poor' and 'very poor' households in the area.

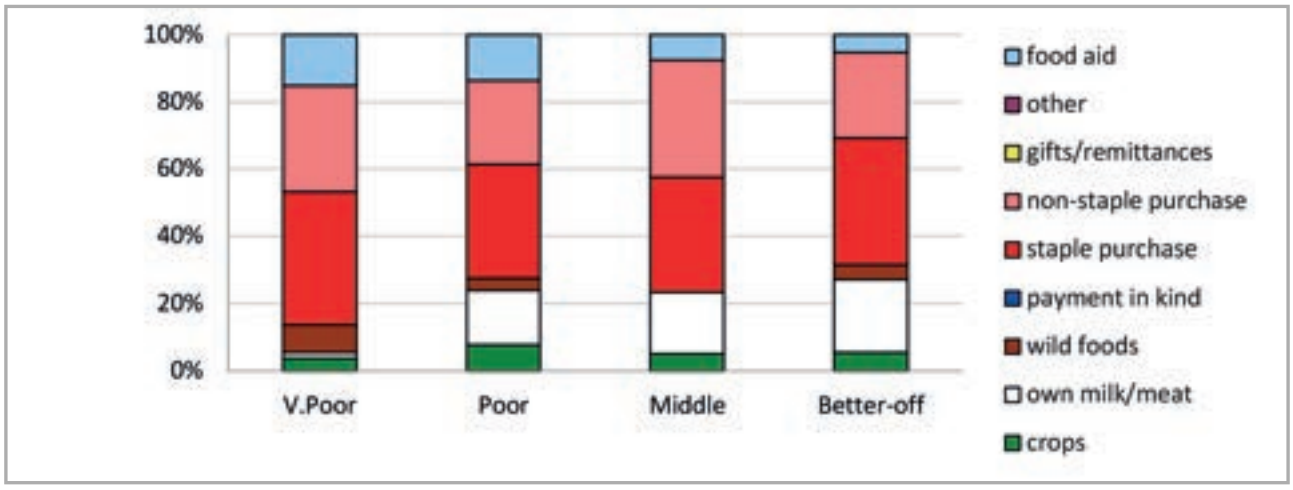


Figure 38: *Food source as contribution to the total in ZAVIN*

Only the 'middle' and 'better-off' households obtain substantial food from their livestock products: this is usually from cow milk and occasional slaughter for meat (the 'poor' obtain a small contribution from the meat of an occasional slaughter). Dairy production in this zone is not commensurate with herd sizes and livestock ownership. In general, a fraction of lactating cows (about 1:3 to 1:6) is milked for consumption.

The poorest households' children receive additional food from school lunches, which is the official food assistance. This food source for the poor households was also affected as schools were closed during the COVID-19 lockdowns. Wealthier households tend to send their children to fee-paying schools that do not offer meals. All households may collect wild foods for consumption, but the quantities involved do not merit a significant contribution to food energy.

6.2.8 Gender Breakdown of who produces/ generates food

Policymakers recognize the need for a participatory and inclusive approach in improving access to food and income in the communities. Hence there is a need to promote and ensure inclusion of the youths and women in food production. This is very critical to promote and ensure participation, equity, and equality in all development programmes.

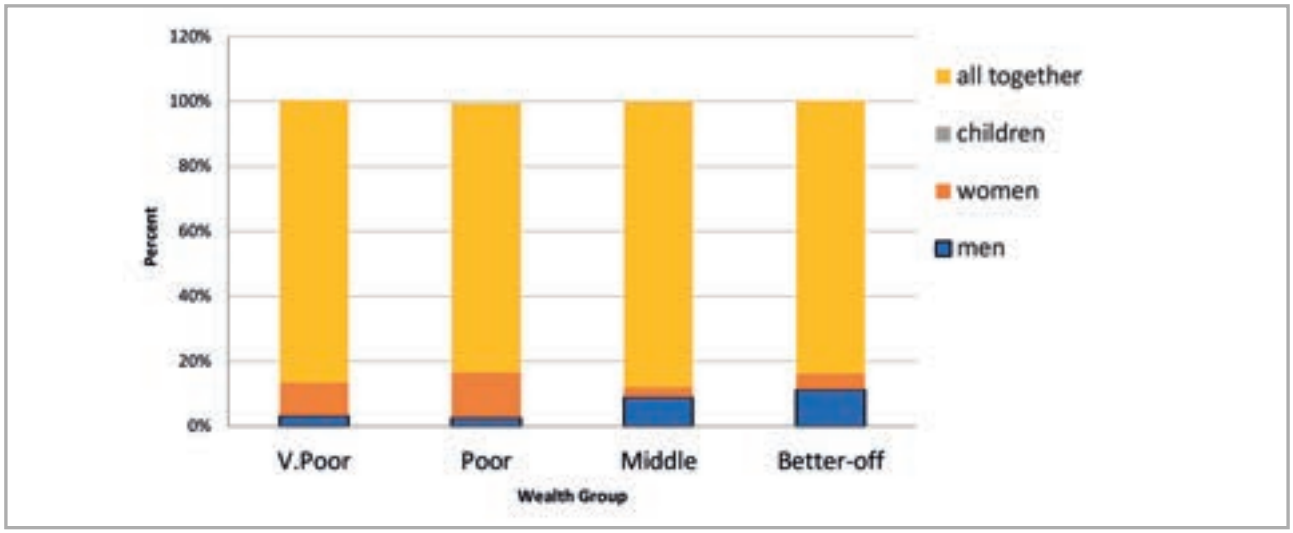


Figure 39: *Gender breakdown of who produces food in the zone for each wealth group*

The results indicated that young adults, men, and women altogether contribute significantly to generate food among the 'poor' and 'very poor' households in most districts and municipalities in this livelihood zone. Women appeared to contribute significantly to the production of food among 'middle' and 'better-off' households. However, there are still challenges and emerging issues relating to gender mainstreaming and youth participation in development. These include HIV and AIDS, poor youth participation in the development agenda, gender-based violence (GBV), increased environmental degradation, climate change, and high levels of poverty. Women still face many challenges, including the burden of care which takes away much of their time for productive work. They also have poor access to extension services, information, inputs, and markets. Hence addressing the gender gap in development including agriculture could raise the scale of economic activities, crop production, boost agricultural yield, overall GDP, and lift a significant proportion of people out of poverty.

6.2.9 Sources of Cash in ZAVIN Zone of Cape Winelands District

Cash incomes vary considerably across wealth groups, with the 'better-off' earning R303,861 per annum, more than ten times as much as the 'very poor', who earn R32,410 per annum. Figure 40 shows this distribution as the bars represent wealth groups and wealth groups.

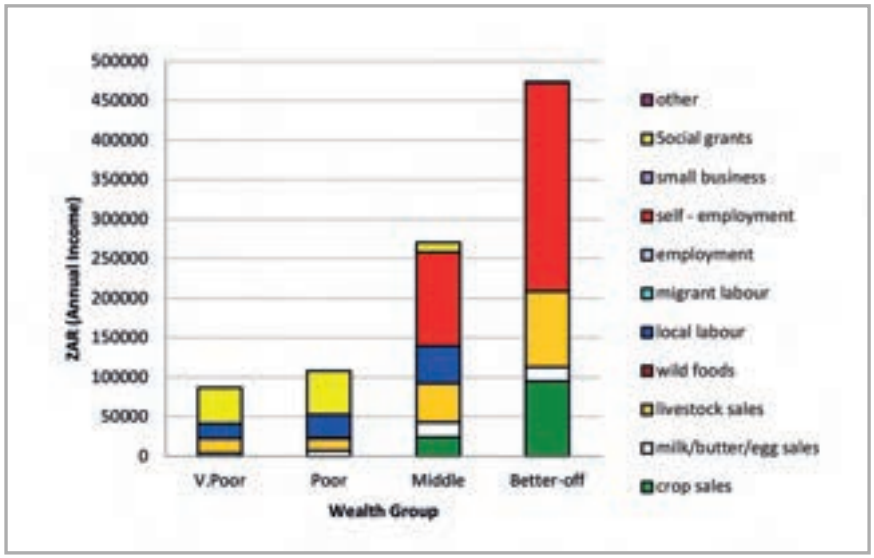


Figure 40: *Sources of annual cash income by wealth group in ZAVIN*

The main sources of cash incomes in the zone are formal employment -for the 'middle' and 'better-off' - and cash grants for the 'poor' and 'very poor'. This is consistent with most surveys that assess livelihood strategies and their contribution to the main livelihood income source.

However, the point of this enquiry was to gain an understanding of how all livelihood sources contribute to the main income of each wealth group in the sampled communities. This is important because it enables practitioners to link a hazard (such as a price change) to an income, and it enables other users to see potential areas of intervention. By dividing the value of each source by the total income, we can see these proportions, and this is presented in the graph above.

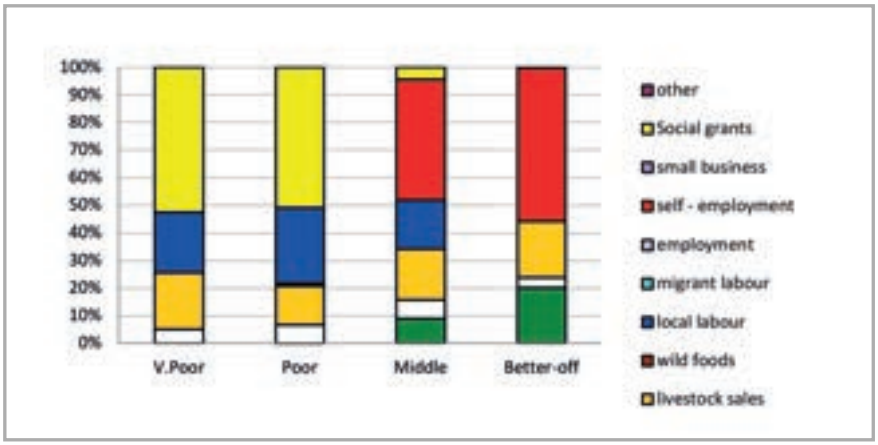


Figure 41: *Sources of annual cash income as a percentage of total, by wealth group in ZAVIN*

For the 'very poor' and 'poor', grants make up 34% and 52% of total cash income, respectively, with the remainder coming from casual labour (mostly domestic work, agricultural piece work, construction jobs, etc.), and self-employment (collecting natural products for sale, weaving, making bricks, etc.). The 'poor', 'middle', and 'better-off' earn some of their cash from animal sales and from petty trading or a small business.

The 'middle' and 'better-off' gain their wealth from a formal wage or salary for the better part of their income. Some 'middle' households may have a member that works seasonally on the commercial farms, but earnings typically amount to almost R79,000 per annum, while the 'better-off' earn more. 'Middle' and 'better-off' households also gain a little cash from grants. The earnings from livestock products are nil, which is lost productivity. The number of cows that are milked compared with those likely to be lactating is low and this is due to a number of factors: lack of economic incentives for milking, lack of time by the cattle-owners (because they are full-time employed), and minimal herd management.

6.2.10 Sources of food and income in ZAOUT of Garden Route District

Purchases were the largest source of people's food, contributing about 76% to 74% of minimum food energy needs. The contribution from staple food purchases decreased steadily as households get wealthier. The contribution from non-staple food purchases never increased with increasing wealth. Most households and all wealth groups also consume food from their own crop production, although the majority of the 'very poor', lack the labour and capital to produce any significant quantities of their own food. The 'better-off' and 'middle' have the highest contribution to their food energy from both staple and non-staple crops, at about 70% to 53% of their minimum needs, respectively. The analysis showed that about 76% and 74% of the food purchases which needed to be obtained on an almost daily basis from local markets were affected for the 'very poor' and 'poor' households in this area during COVID-19 lockdowns. This exacerbated the food insecurity level of the 'poor' and 'very poor' households in the area.

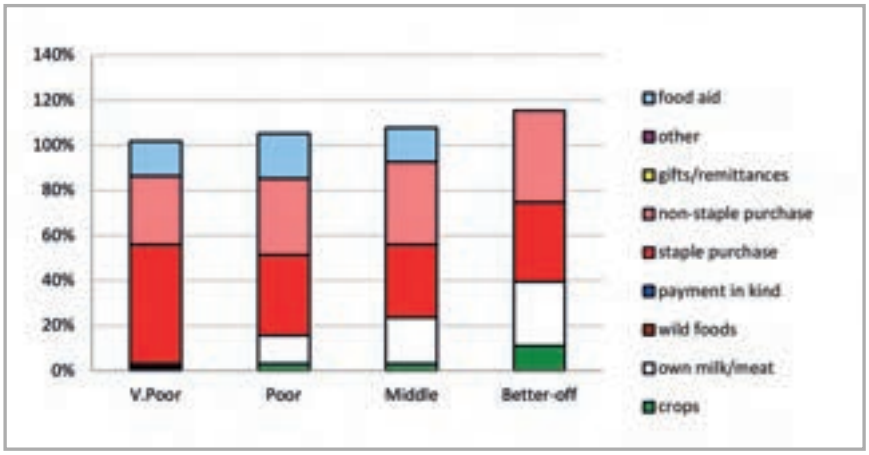


Figure 42: *Sources of food in ZAOUT (expressed as percentage of minimum average food energy needs) for each wealth group*

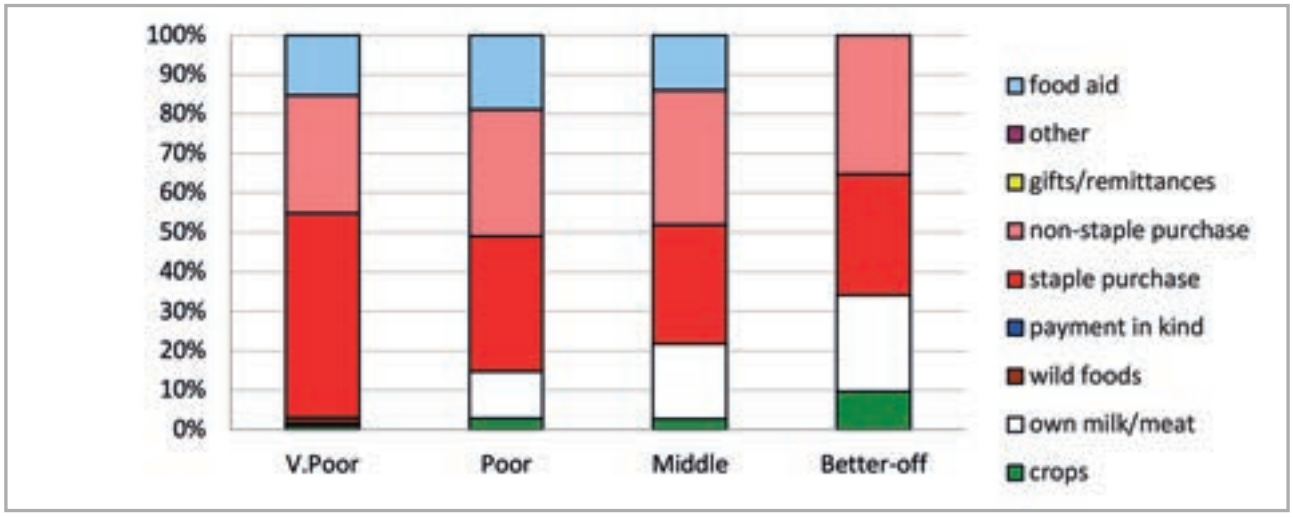


Figure 43: *Food source as contribution to the total in ZAVIN*

Only the 'middle' and 'better-off' households obtain substantial food from their livestock products; this is usually from cow milk and occasional slaughter for meat (the 'poor' obtain a small contribution from the meat of an occasional slaughter). Dairy production in this zone is not commensurate with herd sizes and livestock ownership. In general, a fraction of lactating cows (about 1:3 to 1:6) is milked for consumption.

The poorest households' children receive additional food from school lunches, which is the official food assistance. This food source for the poor households was also affected as school were closed during the COVID-19 lockdowns. Wealthier households tend to send their children to fee-paying schools that do not offer meals. All households may collect wild foods for consumption, but the quantities involved do not merit a significant contribution to food energy.

6.2.11 Gender Breakdown of who produces/ generates food in ZAOUT

Policymakers recognize the need for a participatory and inclusive approach in improving access to food and income in the communities. Hence, there is a need to promote and ensure inclusion of the youths and women in food production. This is very critical to promote and ensure participation, equity, and equality in all development programmes.

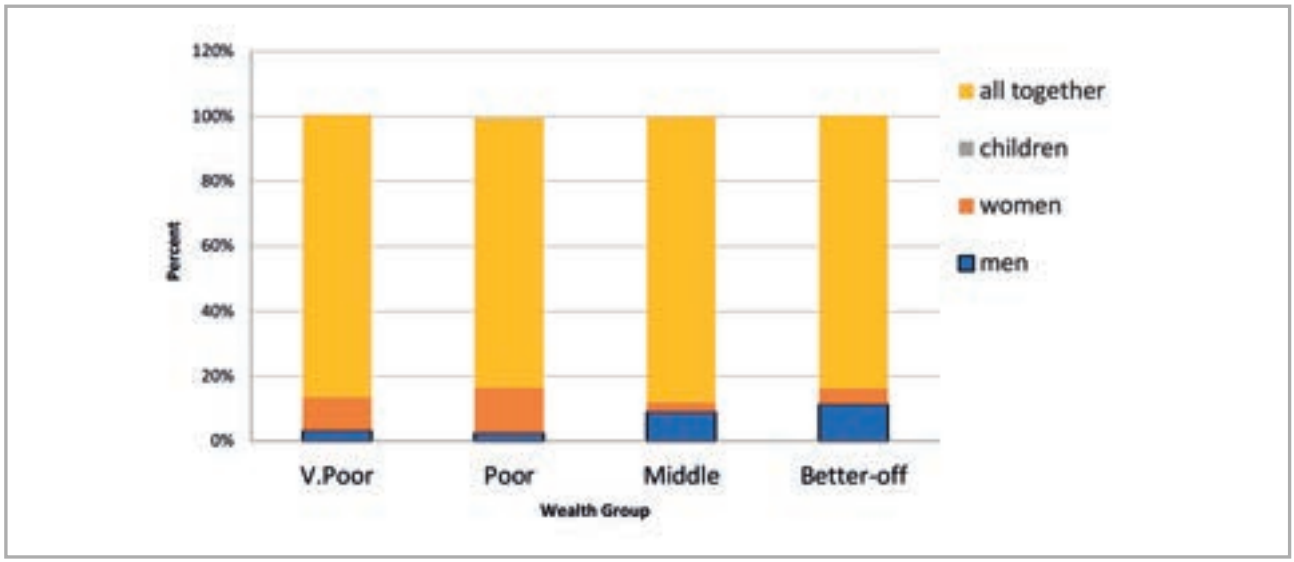


Figure 44: *Gender breakdown of who produces food in the zone for each wealth group*

The results indicated that young adults, men, and women altogether contribute significantly to generate food among the 'poor' and 'very poor' households in most districts and municipalities in this livelihood zone. Women appeared to contribute significantly to the production of food among 'middle' and 'better-off' households. However, there are still challenges and emerging issues relating to gender mainstreaming and youth participation in development. These include HIV and AIDS, poor youth participation in development agenda, gender-based violence (GBV), increased environmental degradation, climate change, and high levels of poverty. Women still face many challenges, including the burden of care which takes away much of their time for productive work. They also have poor access to extension services, information, inputs, and markets. Hence addressing the gender gap in development including agriculture could raise scale of economic activities, crop production, boost agricultural yield, overall GDP, and lift a significant proportion of people out of poverty.

6.2.12 Sources of Cash in ZAOUT zone of Garden Route District

Cash incomes vary considerably across wealth groups, with the 'better-off' earning R303,861 per annum, more than ten times as much as the 'very poor', who earn R32,410 per annum. Figure 45 shows this distribution as the bars represent wealth groups and wealth groups.

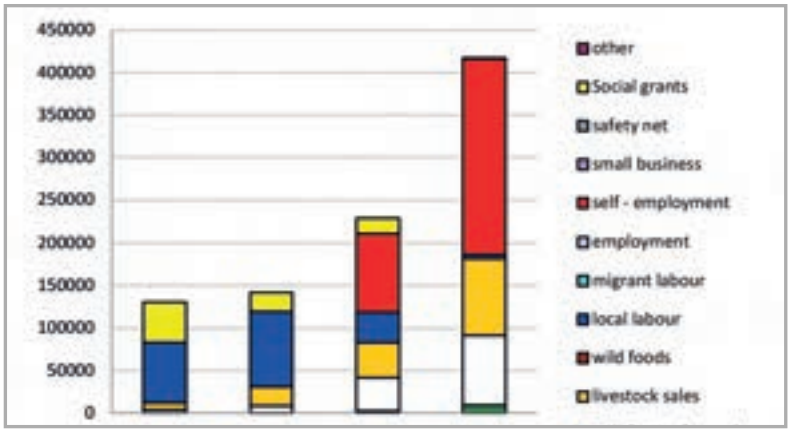


Figure 45: *Sources of annual cash income by wealth group in ZAOUT*

The main sources of cash incomes in the zone are formal employment - for the 'middle' and 'better-off' - and cash grants for the 'poor' and 'very poor'. This is consistent with most surveys that assess livelihood strategies and their contribution to the main livelihood income source.

However, the point of this enquiry was to gain understanding of how all livelihood sources contribute to the main income of each wealth group in the sampled communities. This is important because it enables practitioners to link a hazard (such as a price change) to an income and it enables other users to see potential areas of intervention. By dividing the value of each source by the total income, we can see these proportions, and this is presented in the graph above.

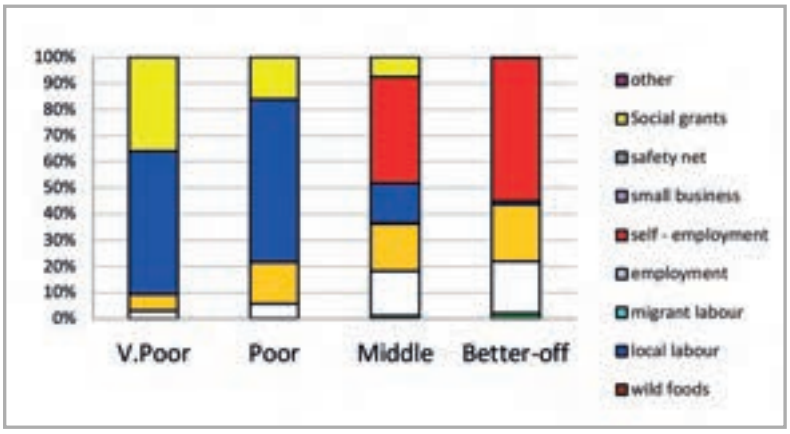


Figure 46: *Sources of annual cash income as a percentage of total, by wealth group in ZAOUT*

For the 'very poor' and 'poor', grants make up 34% and 52% of total cash income, respectively; the remainder coming from casual labour (mostly domestic work, agricultural piece work, construction jobs, etc.) and self-employment (collecting natural products for sale, weaving, making bricks, etc.). The 'poor', 'middle' and 'better-off' earn some of their cash from animal sales and from petty trading or a small business.

The 'middle' and 'better-off' gain their wealth from a formal wage or salary for the better part of their income. Some 'middle' households may have a member that works seasonally on the commercial farms, but earnings typically amount to almost R79,000 per annum, while the 'better-off' earn more. 'Middle' and 'better-off' households also gain a little cash from grants. The earnings from livestock products are nil, which is lost productivity. The number of cows that are milked compared with those likely to be lactating is low and this is due to a number of factors: lack of economic incentives for milking, lack of time by the cattle-owners (because they are full-time employed), and minimal herd management.

6.2.13 Hazards, vulnerabilities, and response strategies

Since households are dependent on markets for most of their food they are, therefore, most vulnerable to market shocks. These 'market shocks' may consist of escalating food prices, eroded grants (for example, when they are not adjusted to match consumer inflation), and job losses.

Floods and droughts are frequent and have an impact on food production by reducing crop production. However, unless food prices also rise simultaneously, households will manage crop losses by prioritising more cash for their food purchases. A severe drought can badly affect animal condition and production, but the current low productivity means that it would only have an impact on 'better-off' households' asset bases.

Additional response strategies households may engage in under stress are switching expenditure, seeking more casual work (usually outside of the village), or selling off assets or belongings.

6.3 Access to agriculture extension services, road infrastructure and markets

Access to agricultural extension services, road infrastructure, and markets has potential to improve household food security in the study area. This section highlights access to these services in the province.

6.3.1 Access to road infrastructure

Access to infrastructure such as roads is critical in enhancing food and nutrition security. Both females and males reported high levels of access to roads with the 25-34 age category having above 100% of access (Table 36). Across the six districts, road access was extremely good with the highest (100%) being recorded in the City of Cape Town, whilst the least was reported in both Garden Route and the West Coast districts (88%).

Table 36: Access to road infrastructure by households

Variable		Access to road Infrastructure			
		No		Yes	
		N	Row N %	N	Row N %
Household		18	6	192	94
Sex of household head	Male	13	7	139	93
	Female	5	5	53	95
Household head age	18-24	0	0	2	100
	25-34	0	0	13	100
	35-44	3	5	37	95
	45-54	4	11	40	89
	55-64	7	7	42	93
	65+	4	5	57	95
District	Cape Winelands	1	3	30	97
	Central Karoo	3	10	34	90
	City of Cape Town	0	0	10	100
	Garden Route	7	12	51	88
	Overberg	3	8	35	92
	West Coast	4	12	32	88

6.3.2 Access to markets by households

Access to markets was very high across all districts in the province (92%).

Table 37: Access to market by households

Variable		Access to market			
		No		Yes	
		N	Row N %	N	Row N %
Households		19	8	193	92
Sex of household head	Male	15	9	138	91
	Female	4	4	55	96
Household head age	18-24	1	7	1	93
	25-34	0	0	13	100
	35-44	2	2	38	98
	45-54	9	27	35	73
	55-64	6	6	45	94
	65+	1	1	60	99
District	Cape Winelands	0	0	31	100
	Central Karoo	5	15	34	85
	City of Cape Town	1	10	9	90
	Garden Route	5	8	53	92
	Overberg	2	4	35	96
	West Coast	6	15	31	85

6.3.3. Access to extension services by households

Access to agricultural extension services has been reported to be extremely low in the entire Western Cape Province (Figure 24). Crop production was reported to be extremely low in the previous sections and there is an extremely low percentage (4%) of households reporting to have received seedlings and fertilizers for free, and it does influence the low level of households' involvement in crop production. The situation is also exacerbated by the size of the stand and extensive commercial agriculture and the tourism industry in the province. Only about 1% of the households (Figure 47) have reported to have received support when it comes to dipping and vaccination services. Aggregated by district, the City of Cape Town has the highest percentage (28%) of households with access to agricultural extension services (Table 38).

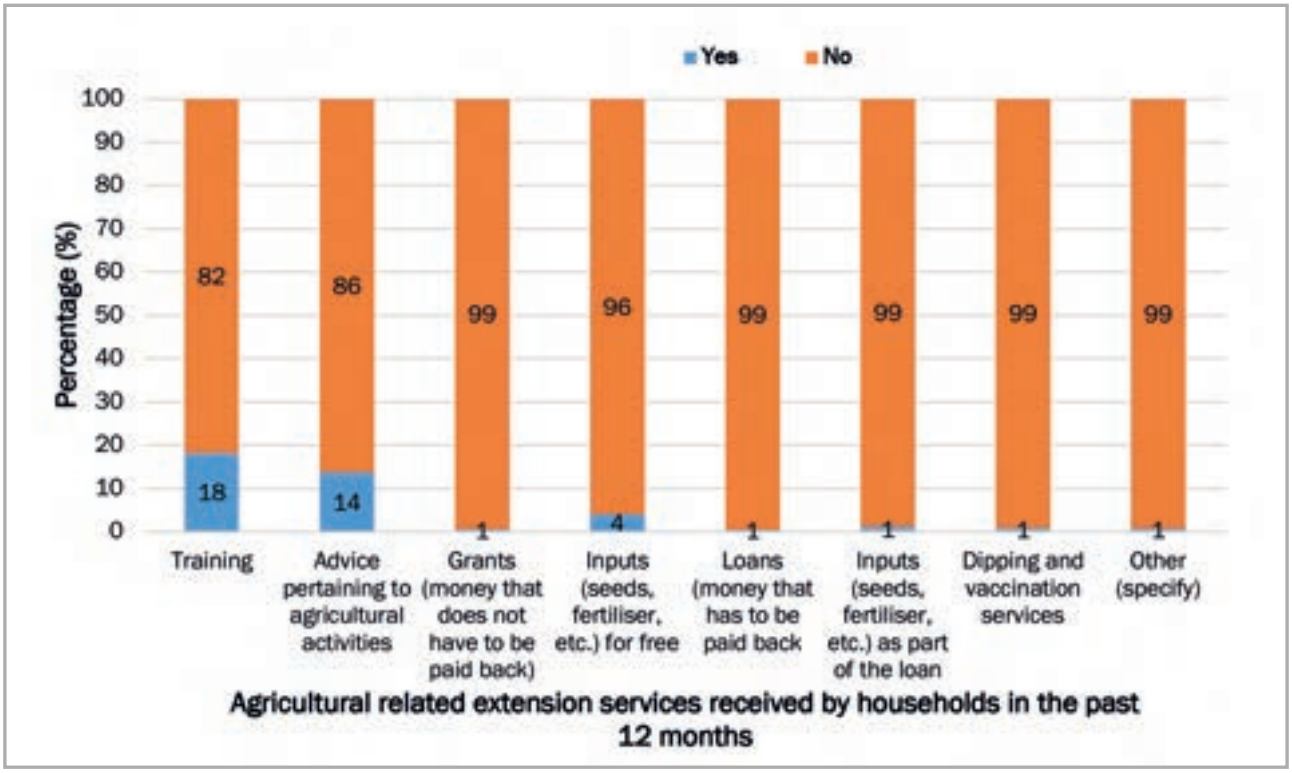


Figure 47: *Access to extension services by households*

Table 38: Household access to agricultural extension services

Variables		Access to extension services			
		No access		Access	
		N	Row N %	N	Row N %
Households		178	84.6	27	15.4
Sex of household head	Male	128	88	21	12
	Female	50	77	6	23
Household head age	18-24	2	100	0	0
	25-34	10	86	2	14
	35-44	33	74	6	26
	45-54	37	94	4	6
	55-64	38	70	10	30
	65+	57	98	5	2
District	Cape Winelands	29	94	2	6
	Central Karoo	30	80	7	20
	City of Cape Town	7	72	3	28
	Garden Route	52	92	5	8
	Overberg	29	88	5	12
	West Coast	31	84	5	16

Discussion

Seasonal variation

According to the findings shown by the seasonal calendar created from the focus group discussions in the Western Cape Province, the rainy season begins in September and lasts until February, during which time there are noticeable farming activities such as weeding, planting, and land preparation. Yet, the province's planting and rainfall onset dates are altering as a result of the changing climate. Crop harvesting and other activities like gardening begin in March and last until about June. Several investigations, including those by Phokele and Sylvester, have revealed similar season characterization (2012). Previous studies in Western Cape Province have reported that rainfall is highly seasonal with 95% occurring between October and March (M'marete, 2003), often with a mid-season dry spell during critical periods of growth (FAO, 2009). Midsummer drought often leads to crop failure and low yields (Beukes et al., 1999). Average rainfall is about 800mm but it often varies temporarily.

Access and land ownership

There is pronounced limited access to land (by households across the five districts of the Western Cape. Most of the districts reported very limited access to land. This explains the limited agriculture production of food crops in most of the districts. Most households reported that they own land, yet this land is less than 500m^2 hectares which is primarily used for residential purposes. This is buttressed by Nieuwoudt and Groenewald (2003) who noted that land holdings in these former homelands of South Africa are generally very small and are mainly used for residential and to some extent subsistence farming. Securing land rights for communities has been shown to improve production and household food security (Prosterman, 2013). In South Africa, as a country, there are dual systems when it comes to land rights i.e., statutory law vested in the Constitution and customary law vested mostly in patrilineal tribal traditions and customs (Toulmin, 2008). In Western Cape Province, most of the land is commercially held under minority ethnic group with very limited access to land for most households in remote and urban communities. The 18-24 year age group in Western Cape Province reported the least land access to land across all the districts, which calls for a need to empower the youths with land ownership since it is the category currently plagued by high levels of unemployment. This would result in increased participation by youths in agriculture income generating projects and improved food availability at the household level. Land access is also limited among female headed households. These findings follow a similar pattern across the other provinces in South Africa. As similarly echoed by Murugani et al. (2014) who argued that in the Limpopo Province, land access by females is mediated by patrilineal customary law where women have mostly secondary property rights as wives. Consequently, their land use security was derived from the family and other means of fostering accountability (Murugani et al., 2014). These cultural practices have led to women having limited access and user rights to land for agricultural purposes, particularly in rural communities.

7 Household Food and Nutrition Security Indicators

This section reports Food and Nutrition Security (FNS) as captured by the HFIAS, HHS, HDDS, and the FCS. These indicators are presented according to districts, sex, age, and other important variables. Correlation analyses are done to investigate the extent to which food security levels, as captured by the various indicators, vary across districts, demographics, and socio-economic characteristics of households.

7.1 Household Food Insecurity Access Scale

The Household Food Insecurity Access Scale (HFIAS) score measures the degree of food access challenges at the household level. It is calculated by adding the households' responses to nine questions asking about the frequency of certain behaviours that signify rising challenges in accessing food in a particular household (Coates et al., 2007). The higher scores indicate more food access challenges, while low scores indicate less food access challenges. The lower bound of the score is 0, while the upper bound is 27. The average HFIAS score for Western Cape was 7.5, with a range of 0 to 27.

Interpreting this continuous score in terms of its food security implications is not straightforward, necessitating the need to generate categorical indicators of food insecurity (Coates et al., 2007). However, when the HFIAS score is used to categorise households into four levels of food (in)security status (i.e., food secure, mildly food insecure, moderately food insecure, and severely food insecure), the picture becomes less rosy. The food secure category are those households that do not experience food access conditions, and rarely worry about not having enough food. Households in the mildly food insecure category worry about not having enough food sometimes or often, are unable to eat preferred foods, and rarely eat some foods considered undesirable. These households have not cut back on food quantities, and have not experienced most severe access food challenges such as running out of food, going to bed hungry, or going the whole day and night without eating. A moderately food insecure household frequently consumes food that is of low quality, and/or sometimes or often eats undesirable foods, and/or rarely or sometimes reduces quantities of food consumed (i.e., reducing the size of meals or number of meals). A severely food insecure household not only cuts back on meal size or number of meals often, but also experiences any of the three most severe conditions (running out of food, going to bed hungry, or going a whole day and night without eating). The cut-off was as follows: food secure if HFIAS is less than or equal to 1, mildly food insecure if HFIAS is between 2 and 8, moderately food insecure if HFIAS is between 9 and 17, and severely food insecure if HFIAS is greater than or equal to 18.

Figure 48 presents the proportion of the prevalence of food insecurity among the sampled households. The overall results showed that the majority of the households (54.7%) in the Western Cape Province experienced food insecurity, with 45.3% found to be food secure. Figure 48 shows that 17.3% of the households were severely food insecure, 22.1% of the surveyed households were moderately food insecure, and 15.3% of the households were mildly food insecure. Overall, the findings of this study slightly differ from the findings of the Stats SA (2021) which found more proportions of food secure households than the food insecure ones. However, this household food security situation is not strange, bearing in mind that the data was collected during the period of the COVID-19 pandemic which may have severely eroded the households' purchasing power and thus increased the proportions of food insecure households. The results are in line with most of the food security findings which generally indicate that a significant proportion of households' experience food access challenges in South Africa. For example, in 2016, SAVAC commissioned a study on livelihoods, food, and nutrition security in which more households were found to be food insecure than those that were food secure (Ngidi et al., 2016; Ngidi and Kajombo, 2017).

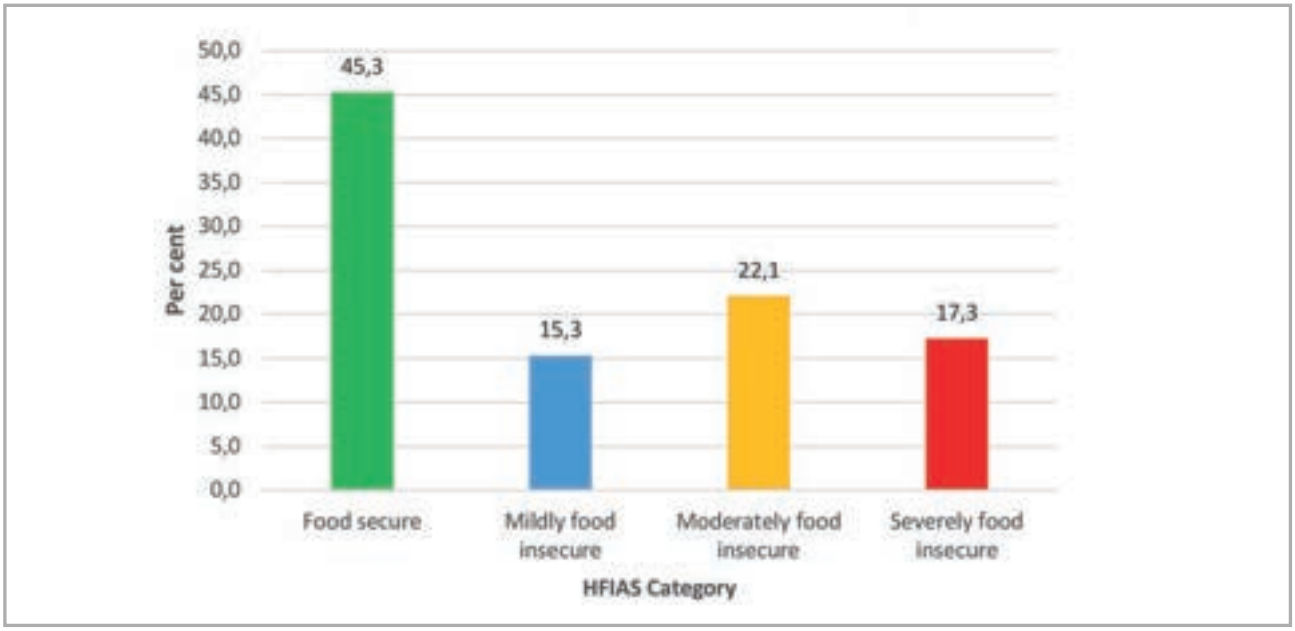


Figure 48: *The categorized food security situation, using HFIAS*

Table 39 and Figure 48 show that the food security status of households was found to be varied by sex and age of household head, as well as by district. The results show that male-headed households were slightly more food secure than female-headed households, with 50% of the male-headed households found to be food secure, compared to 39% of female-headed households. Similarly, Negesse et al. (2020) also found that the severity of food insecurity among female-headed households in Ethiopia was higher as compared with their men counterparts. In any category of the HFIAS, female-headed households experienced slightly higher levels of food insecurity. Severe food insecurity was experienced by 16% of the male-headed households compared to 20% of the female-headed households that fell within the same category. Approximately 20% and 25% of male-headed and female-headed households experienced moderate food insecurity, respectively. About 15% and 16% of male-headed and female-headed households experienced mild food insecurity, respectively.

Table 39: District level and gendered food security situation as determined by HFIAS

		Food secure		Mildly food insecure		Moderately food insecure		Severely food insecure	
		N	%	N	%	N	%	N	%
Sex of the Household Head	Male	994	50	348	15	509	20	316	16
	Female	515	39	259	16	405	25	304	20
Household head age	18 - 24	58	46	14	12	21	25	16	18
	25 - 34	172	45	72	17	86	17	82	22
	35 - 44	246	42	121	16	170	25	115	17
	45 - 54	283	39	121	17	223	25	153	20
	55 - 64	331	45	137	13	227	25	136	16
	65+	400	54	133	16	173	16	110	14

		Food secure		Mildly food insecure		Moderately food insecure		Severely food insecure	
		N	%	N	%	N	%	N	%
District	Cape Winelands	219	42	102	19	125	23	88	17
	Central Karoo	257	40	115	16	196	28	118	17
	City of Cape Town	265	47	83	15	118	21	103	18
	Garden Route	266	41	93	14	184	27	124	17
	Overberg	286	52	85	14	121	20	90	14
	West Coast	219	37	130	21	173	27	97	15

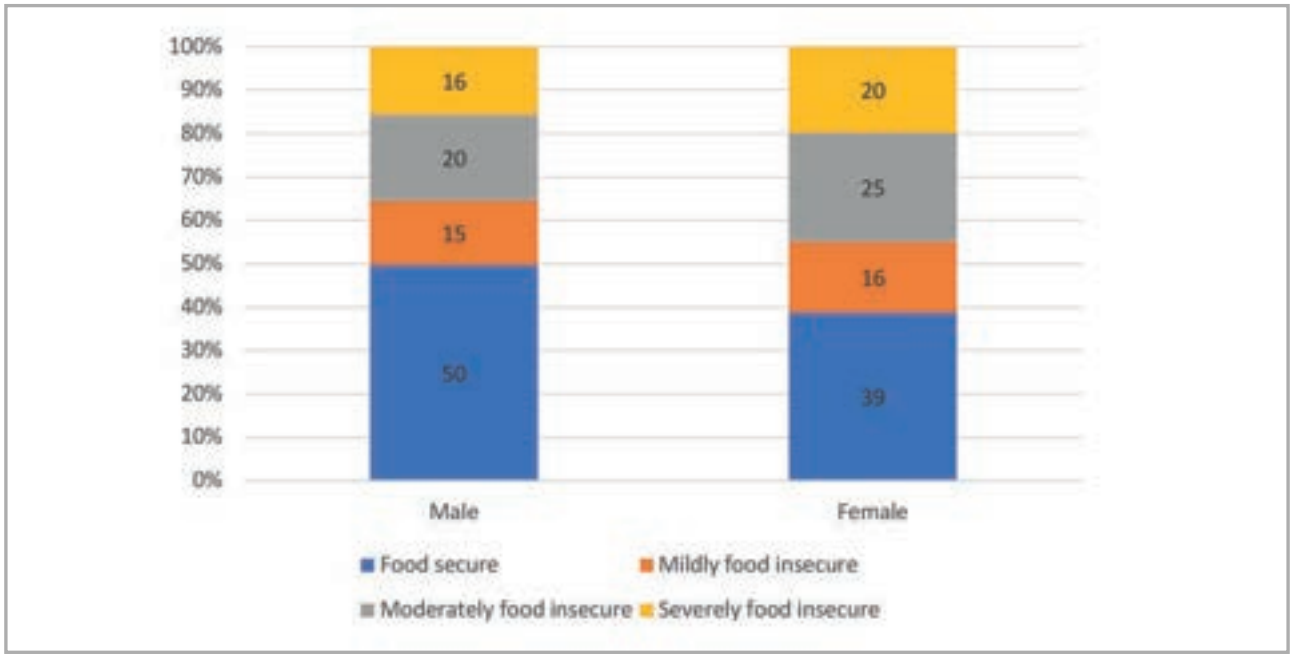


Figure 49: *Food security status by sex of household head*

Table 39 and Figure 50 show that households headed by the 65+ year age group had the highest proportion of households (54%) who were food secure. They were followed by those households headed by the 18-24 year age group, with 46% of the households headed by this age group found to be food secure. The least food secure age group was found to be the 45-54 year age group. This same age group was also found to be the second most severely food insecure age group, with 20% of the households headed by this age group found to be severely food insecure. The most severely food insecure age group was found to be in the 25-34 age group, with 22% of the households in the age group being severely food insecure.

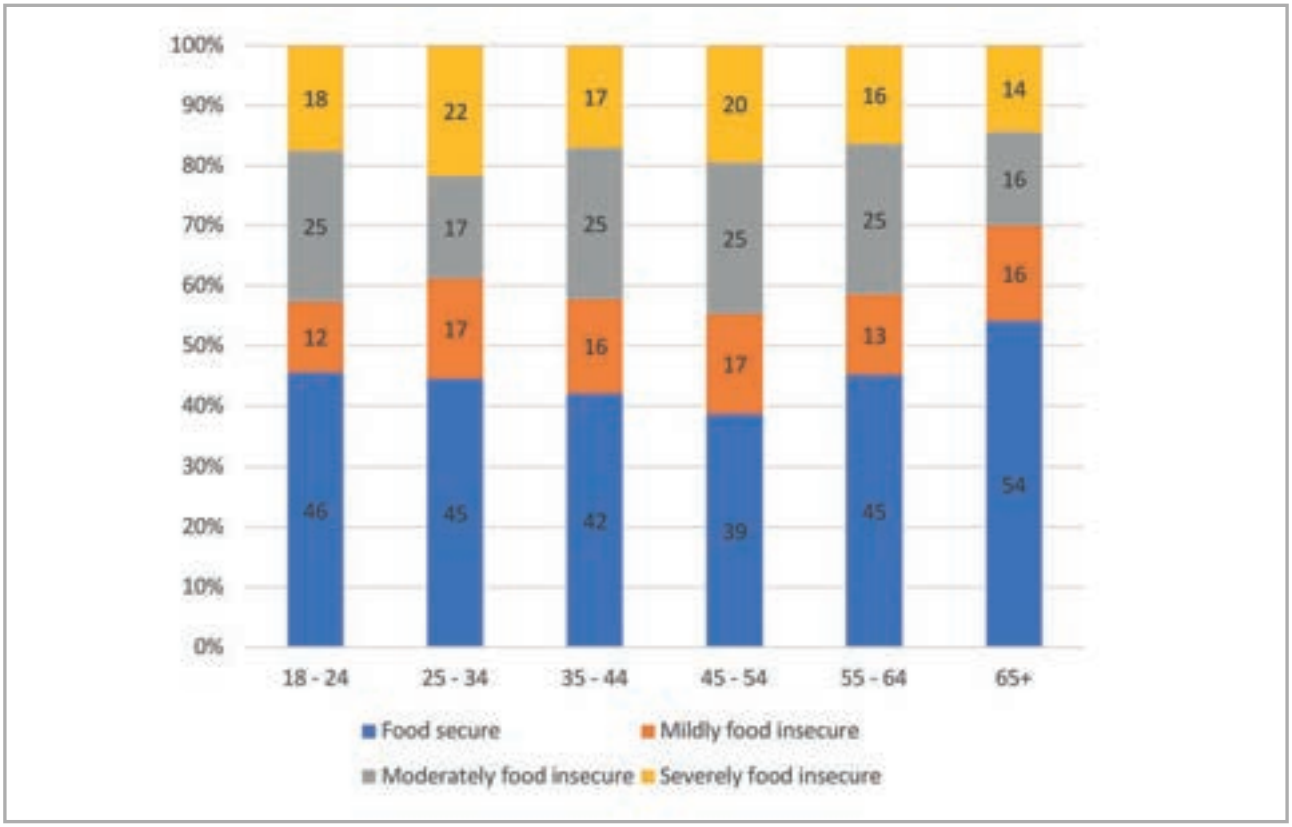


Figure 50: *Food security status by age group of household head*

Table 39 and Figure 52 show that the Overberg District had the highest proportion of households that were food secure (52%), followed by the City of Cape Town Metro, with 47% of the households that were found to be food secure. The least food secure district was found to be West Coast, with 37% of the households found to be food secure. The City of Cape Town had slightly the highest proportion of households experiencing severe food insecurity. About 18% of the households in the City of Cape Town Metro were severely food insecure. This was followed by households from Cape Winelands, Central Karoo, and Garden Route districts, with 17% of the households from each of these districts experiencing severe food insecurity. About 15% of the households in districts also experienced severe food insecurity, while another 14% of the severely food insecure households were from Overberg District. The Overberg District, therefore, experienced the least severe food insecurity compared to other provinces. Moderate food insecurity was largely experienced by households from the Central Karoo District, where 28% of the households were moderately food insecure. This was followed by households from Garden Route and West Coast districts, where 27% of the households from each of these districts were reported to have experienced moderate food insecurity. Mild food insecurity was largely experienced by households from the West Coast District, where 21% of the households from this district experienced mild food insecurity.

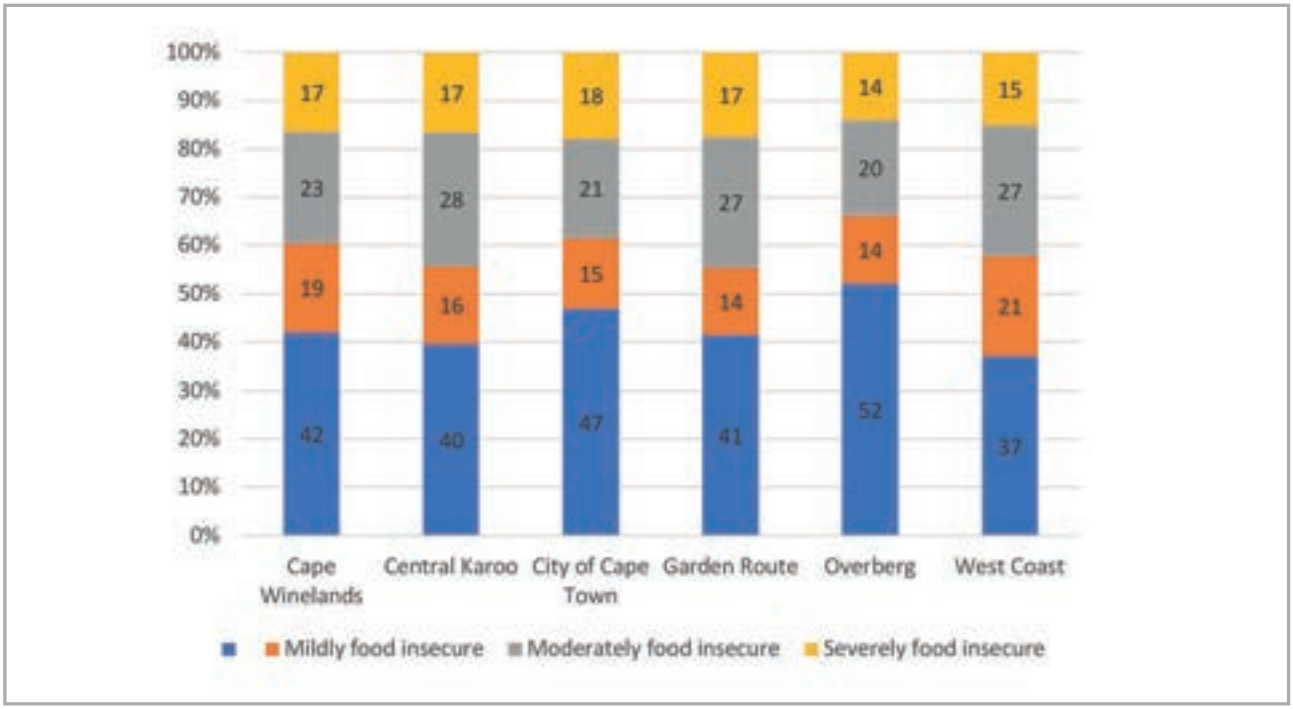


Figure 51: *Food security status by district*

7.2 Household Hunger Situation

The Household Hunger Scale (HHS) is a household food deprivation scale that is derived from selected HFIAS questions for use mainly in situations of high food insecurity levels. Figure 52 presents the results of the HHS scale, showing that most of the sampled households experienced little to no hunger (81.1%). About 13.2% of the households and 5.7%, respectively, experienced moderate hunger and severe hunger. While a considerable proportion of households experienced food insecurity (as shown by the HFIAS results), the HHS suggests that the level of food deprivation is not very severe for most of the households in the Western Cape Province.

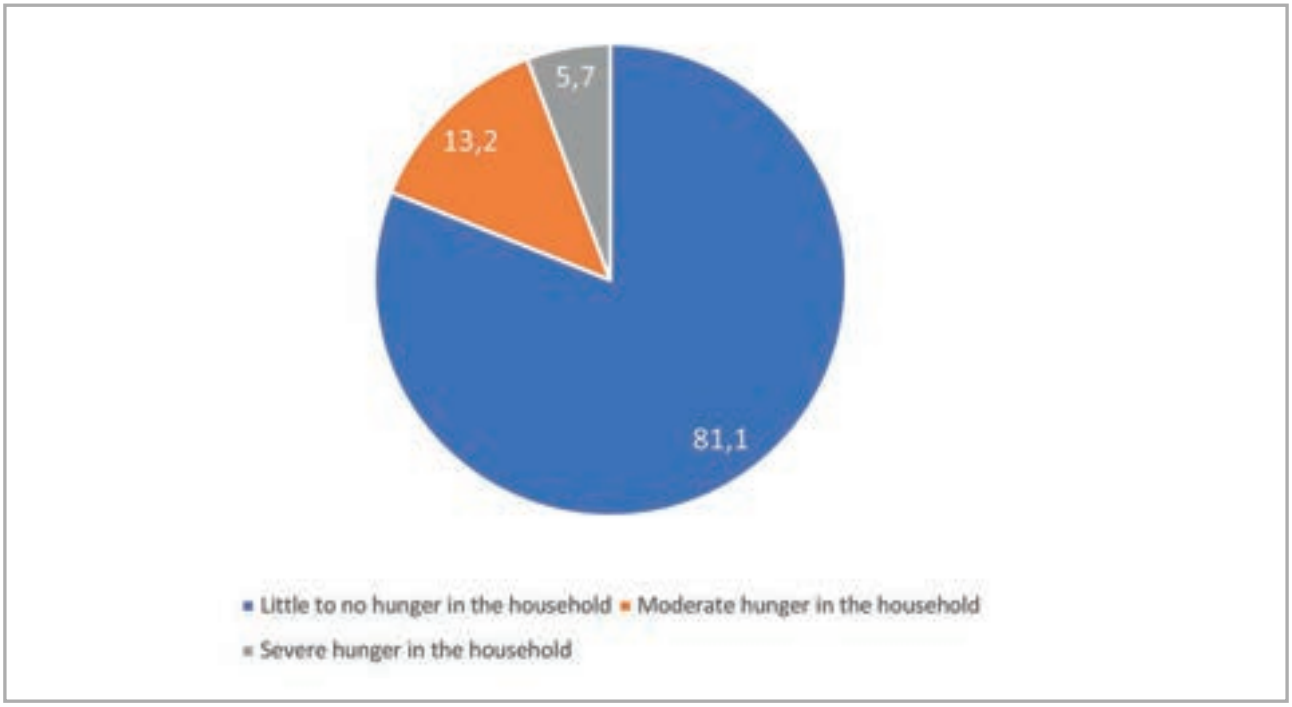


Figure 52: *Hunger experiences of households*

Table 40 presents the hunger status of households by sex, age, and district.Table 40 and Figure 52 show that the hunger status generally did differ between male-headed and female-headed households across all the categories of the HHS. Female-headed households generally experienced more hunger in the province.

Table 40: Food security situation, using HHS

		Little to no hunger in the household		Moderate hunger in the household		Severe hunger in the household	
		N	%	N	%	N	%
Sex of the household head	Male	1916	83	286	12	98	5
	Female	1213	78	282	15	95	6
household head age	18 - 24	97	79	13	12	6	9
	25 - 34	354	79	71	16	22	5
	35 - 44	550	81	108	14	35	5
	45 - 54	650	78	134	14	54	8
	55 - 64	699	82	136	12	39	5
	65+	738	84	97	11	35	5
District	Cape Winelands	461	81	76	13	33	6
	Central Karoo	571	80	120	16	33	5
	City of Cape Town	497	81	80	13	37	6
	Garden Route	567	80	101	13	49	7
	Overberg	517	85	81	12	17	3
	West Coast	524	80	111	16	24	4

Table 40 and Figure 53 indicate that 83% of the male-headed households experienced little to no hunger compared to 78% of the female-headed households. The proportion of female-headed households (15%) was higher than that of male-headed (12%) in the moderate hunger category. Severe hunger in the household was slightly higher among female-headed (6%) than among male-headed households (5%).

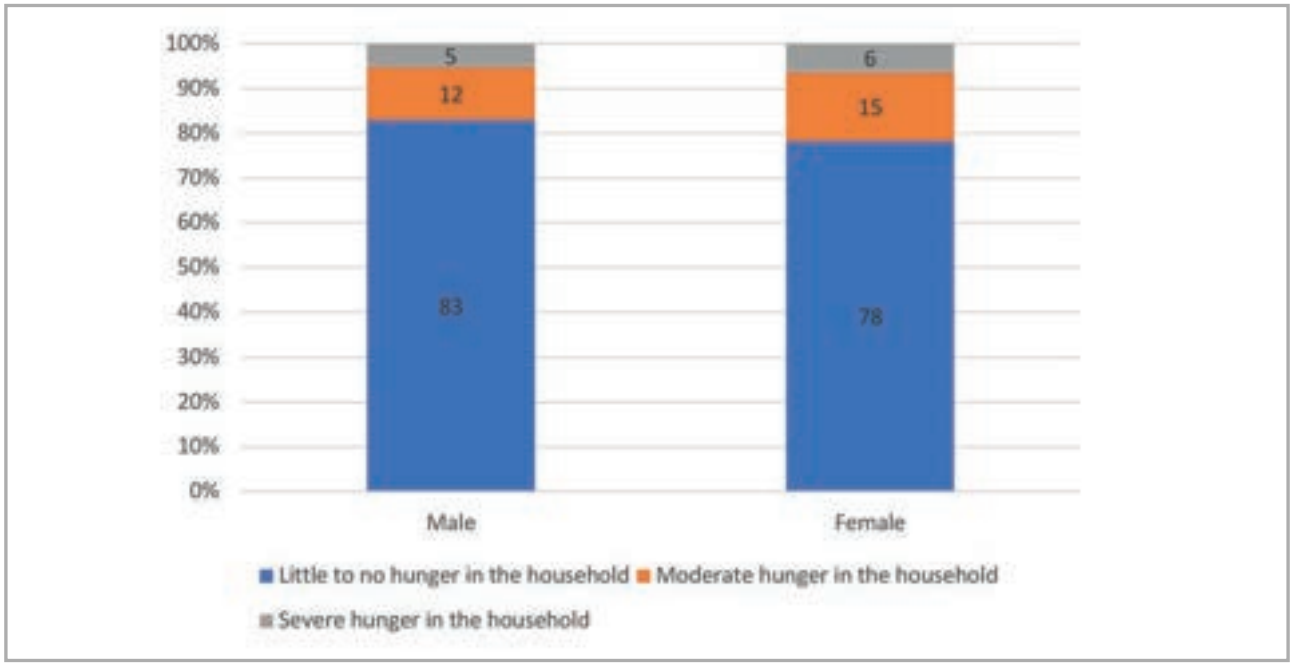


Figure 53: *Household hunger status by sex of household head*

The most food secure age group was found to be 65+ years, with 84% of the households headed by this age group experiencing little to no hunger in the household. This was followed by households headed by members in the age group of 55-64 years (Figure 54). Households in the age group of 25-34 years experienced relatively more moderate hunger compared to the other age groups, with 16% of the households in this age category experiencing moderate hunger. This was followed by households in the age categories of 35-44 and 45-54 years, where 14% from each of the household heads in these age groups, they have experienced moderate hunger in their households. Severe hunger in the household was largely experienced by 18-24, with 9% of the household's heads in this age found to be experiencing severe hunger.

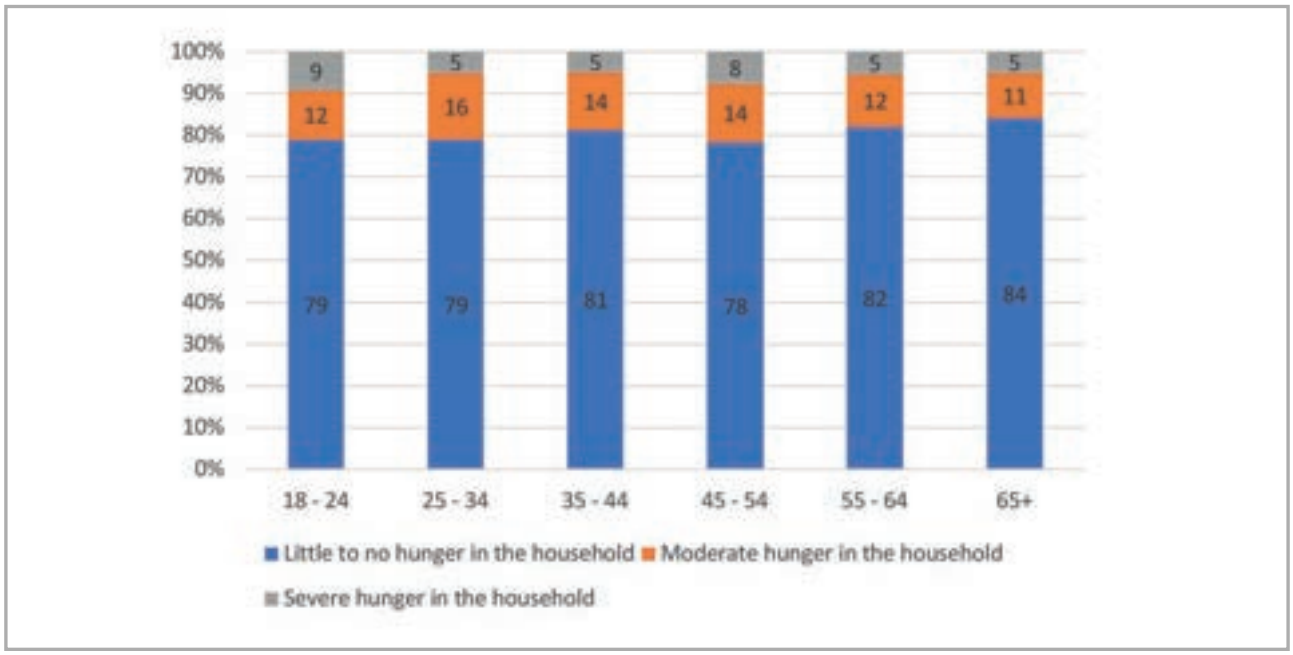
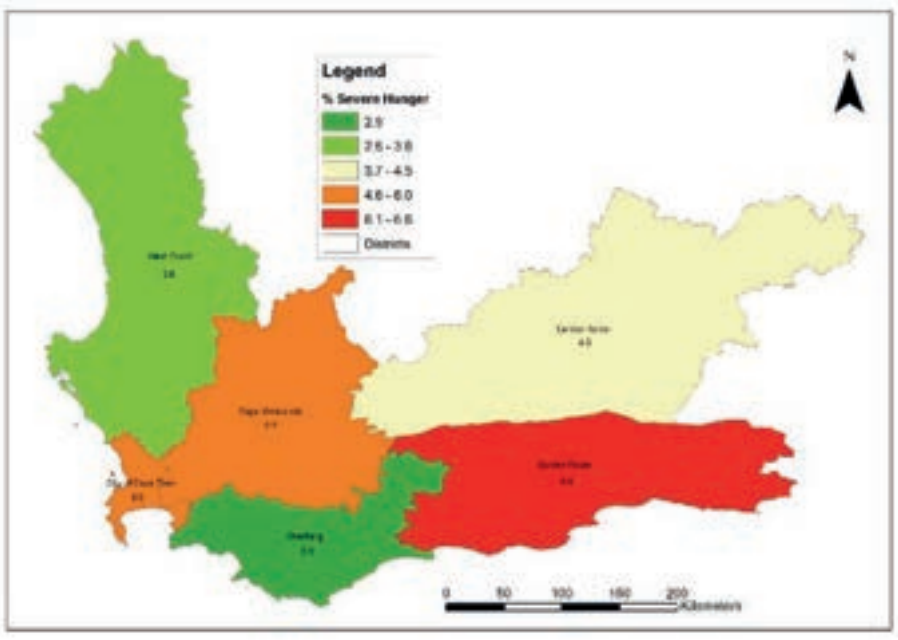


Figure 54: *Household hunger status by age group of household head*

There were minor variations in the hunger status of households across the six districts in the Western Cape Province. The Overberg District was the most food-secure district, with 85% of the households found to have experienced little to no hunger. This was followed by Cape Winelands and the City of Cape Town districts, with 81% of the households from each of the districts found to have experienced little to no hunger. Generally, households across all districts did not experience too much hunger, with 80% or more of the households in all districts experiencing little to no hunger. More households in Central Karoo and West Coast districts experienced moderate levels of hunger compared to the other four districts, where 16% of the households from each district was reportedly experiencing moderate hunger. Overall, there were slight differences in the proportion of households who experienced severe hunger in the six districts, ranging from 3% in the Overberg District to 7% in the Garden Route District. Therefore, households from the Garden Route District experienced more severe hunger compared to other districts.



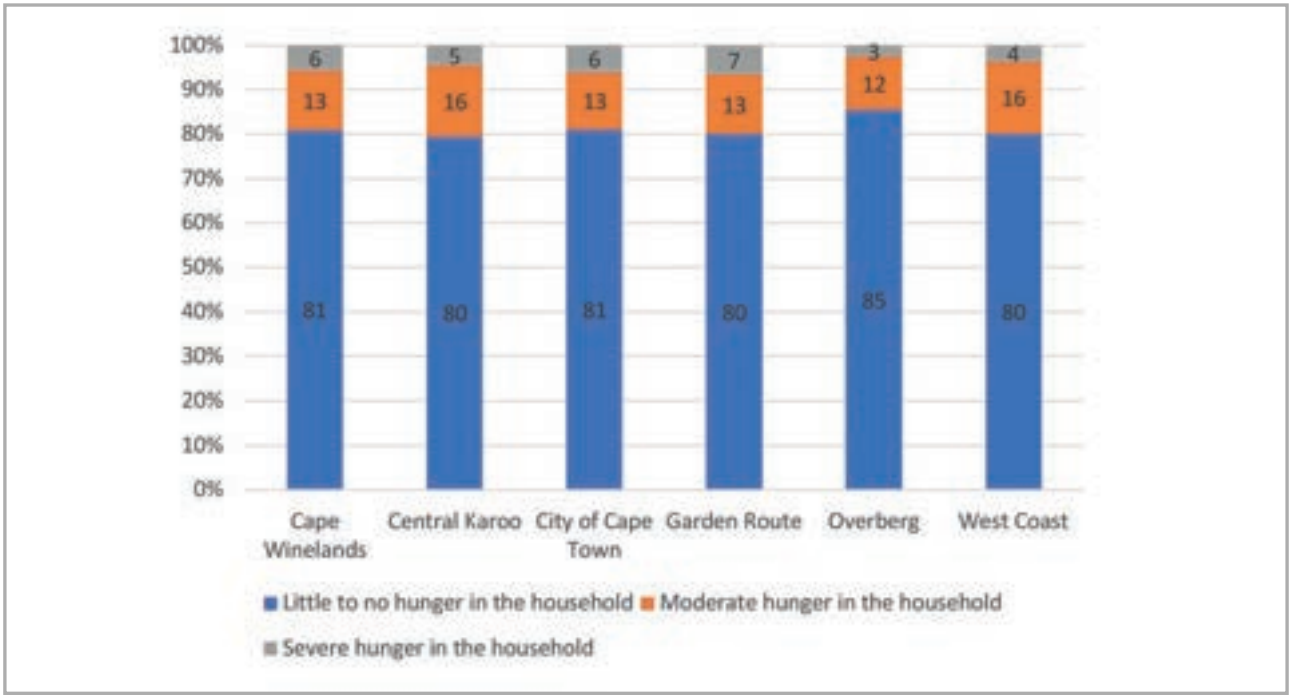


Figure 55: *Household hunger status by district*

7.3 Household Dietary Diversity Score (HDDS)

HDDS measures the economic ability of a household to access a variety of foods (Kennedy, 2009). Higher levels of HDDS imply improved chances for a household to consume enough of all food components necessary for good health. HDDS was constructed using the number of food groups consumed by the household over a 24-hour recall. The food items were categorized into 12 different food groups.

Figure 56 shows that on average, the households in Western Cape consumed more than 7 out of 12 food groups, which suggests above-average dietary diversity levels. Using the cut-offs suggested by Kennedy (2009), 83.3% of households consumed highly diverse diets (more or equal to 6 food groups) whilst 12.1% and 4.1% of the households consumed medium dietary diversity (4-5 food groups) and low diverse diets (less or equal to 3 food groups), respectively.

The results in Table 41 and Figure 57 show that 4% and 5% of the male-headed and female-headed households had the lowest dietary diversity, respectively. More female-headed (84%) than male-headed (82%) households were in the category of highest dietary diversity, suggesting that they had better access to diversified food. Both male-headed and female-headed households consumed about 4 and 5 food groups (medium dietary diversity), with 12% of the households from each gender group reported to have consumed medium dietary diversity. Concluding within the context of this tool, these results generally suggest that both male-headed and female-headed households have better access to diversified food.

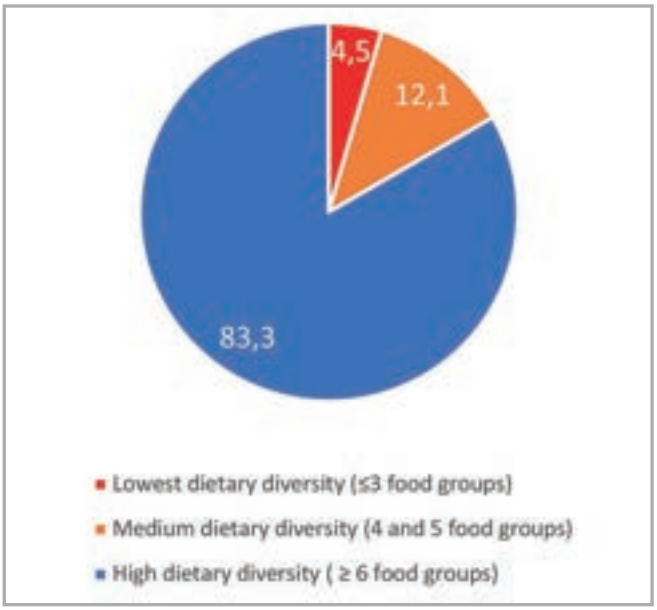


Figure 56: *Household Dietary Diversity Scores*

Table 41: Household Dietary Diversity Scores

		Lowest dietary diversity (≤3 food groups)		Medium dietary diversity (4 and 5 food groups)		High dietary diversity (≥ 6 food groups)	
		N	%	N	%	N	%
Sex of Household head	Male	78	4	276	12	1941	84
	Female	85	5	193	12	1311	82
Household head age	18-24	4	1	20	17	92	82
	25-34	20	6	63	15	363	79
	35-44	30	6	92	14	568	80
	45-54	42	5	108	12	687	82
	55-64	30	4	94	11	750	85
	65+	34	2	85	10	750	87
District	Cape Winelands	22	4	68	12	479	84
	Central Karoo	28	4	77	10	617	86
	City of Cape Town	29	5	76	12	508	83
	Garden Route	27	4	85	12	605	84
	Overberg	26	4	87	14	501	82
	West Coast	32	5	77	11	547	84

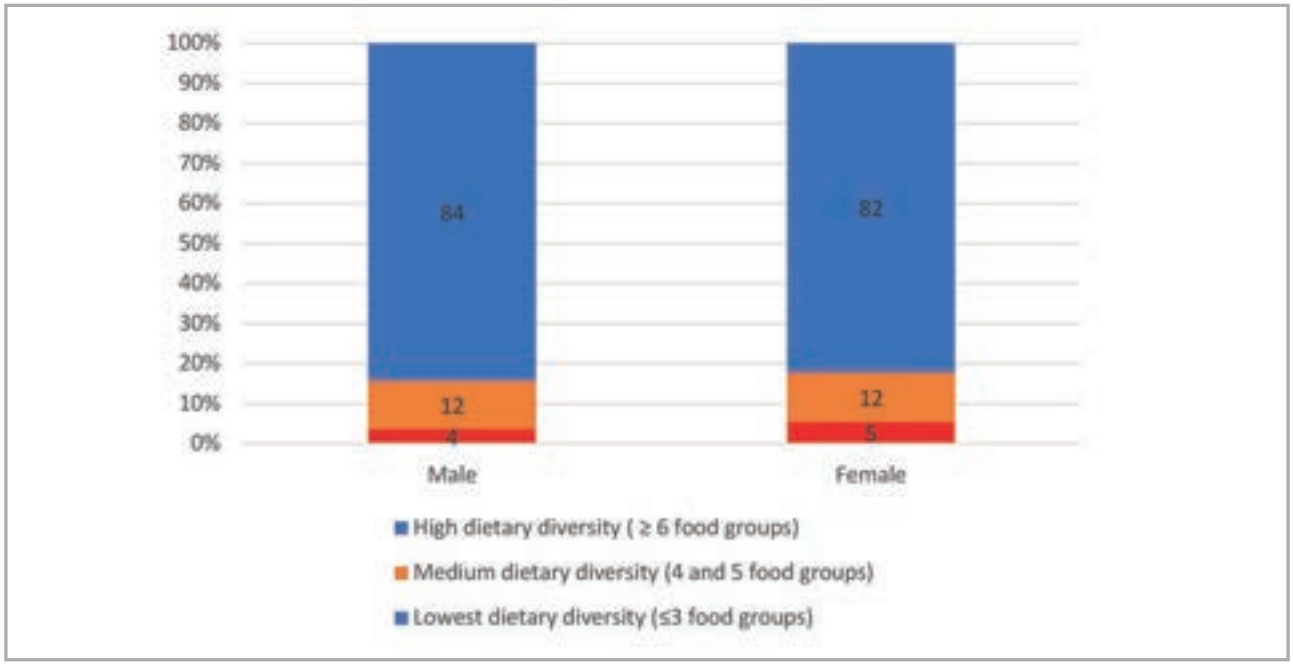


Figure 57: *Dietary Diversity Score category by sex of household*

In terms of the age groups, the majority of all age groups generally consumed a high dietary diversity, with results showing all age groups having a higher percentage of 79% or above of households that consumed highly diversified food. Results of the age groups also show that household heads aged 65+ and 55-64 years were the ones that largely consumed the highest dietary diversity, with 85% and 82% of the households from these age groups, respectively, found to have consumed the highest dietary diversity (Figure 58). Generally, households from different districts had the highest dietary diversity, with 82% or more found to be in the

category of high dietary diversity (Figure 59). Households in the Central Karoo District had the highest dietary diversity, with 86% of the households from this district having consumed the highest dietary diversity. Most households with the lowest dietary diversity were in Cape Winelands and Central Karoo districts. These results should be taken with caution because with 24-hour recall, it is possible to find the situation looking good in terms of food variety simply because on the previous day, it was pension day.

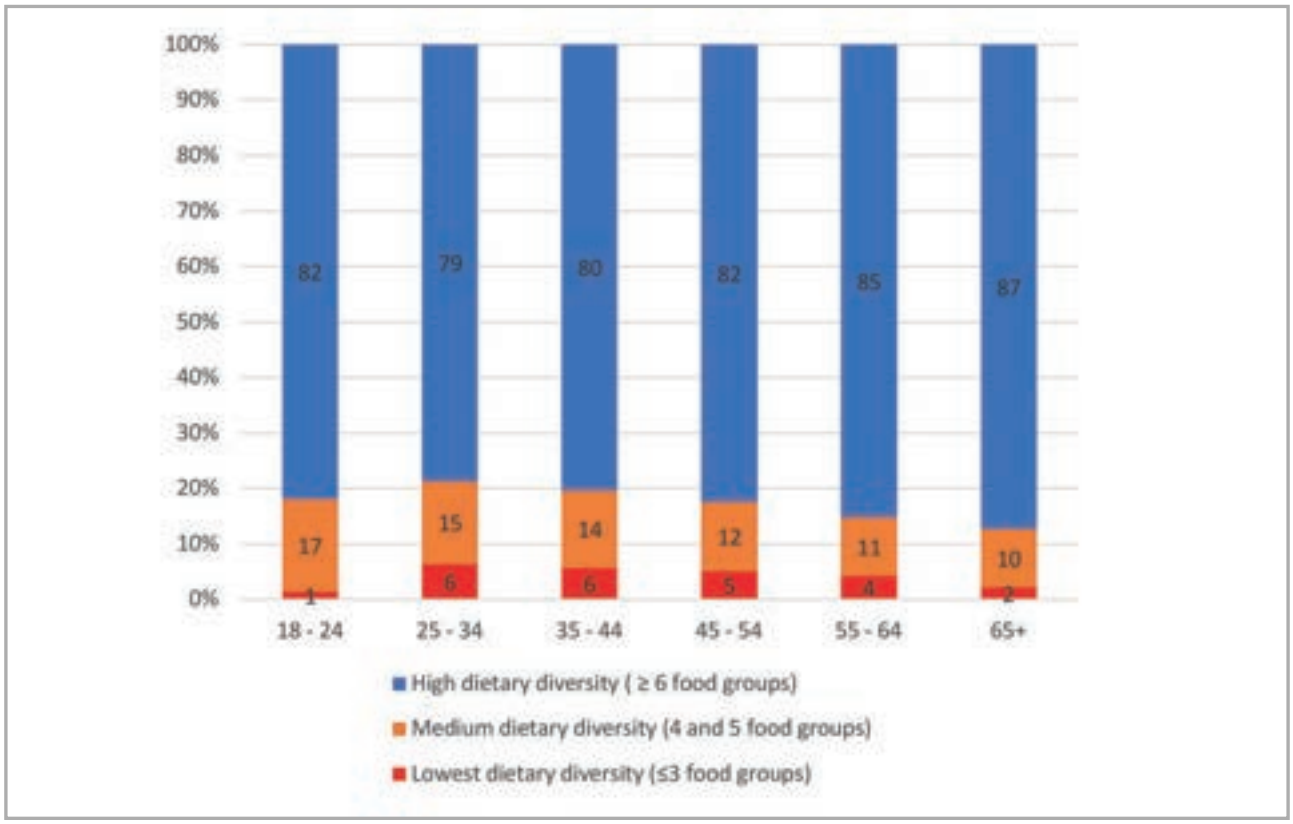


Figure 58: *Dietary diversity category by age of household head*

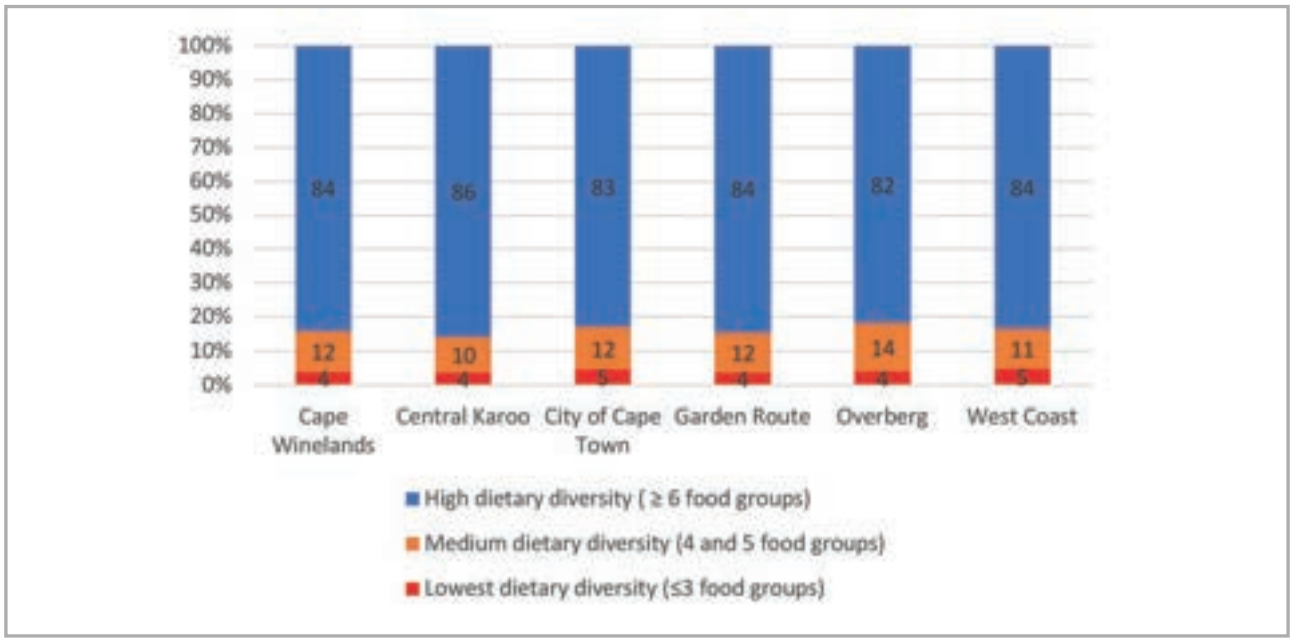


Figure 59: *Dietary diversity category by district*

However, HDDS should not be interpreted as a measure of nutrition or diet quality, as achieving a high dietary diversity score does not guarantee that important food groups, such as fruits and vegetables, are included in the diet. A household can lack crucial micro-nutrients even when consuming a diverse diet. Figure 60 shows the

food groups and their frequency of consumption by the households. The figure shows that the most popular food groups were cereals, condiments, sugars, oils and fats, meats, milk and milk products, other vegetables, meat, roots and tubers, eggs, other fruits, and fresh orange vegetables. The least consumed food groups were fish and sea foods, pulses and nuts, orange-coloured fruits, and dark green leafy vegetables. Figure 60 shows that the most consumed food groups were mostly the less healthy ones, providing a different light to Figure 61, which gives an impression of a highly diverse and healthy diet.

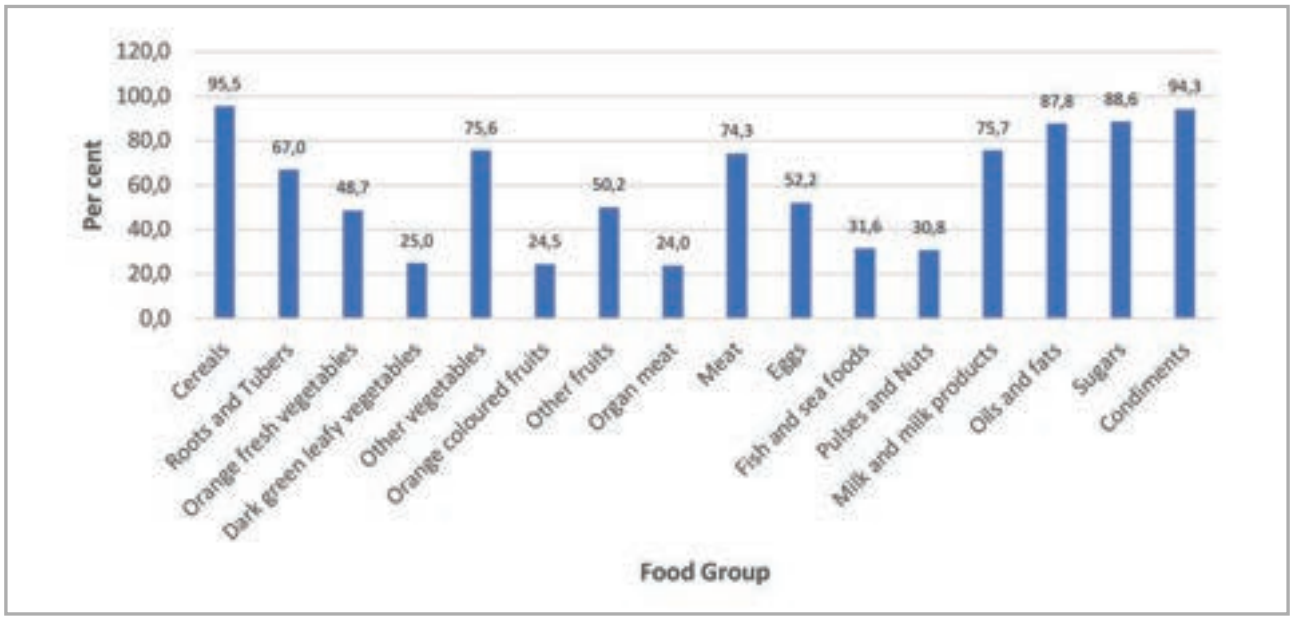


Figure 60: *Frequency of food group consumption*

7.4 Food consumption score

Food Consumption Scores (FSC) were calculated using the WFP methodology to further explore the levels of dietary diversity in the study areas. This FCS differs from Dietary Diversity in that it represents a weighted dietary diversity score. Figure 61 shows that about 72.8% of the households were consuming adequately (acceptable) diversified diets, and about 16.2% of households are at the borderline and could fall into unacceptable diversity of foods if no actions are taken to help them improve their diets. Results further indicate that 10.9% of the households consumed poor diets.

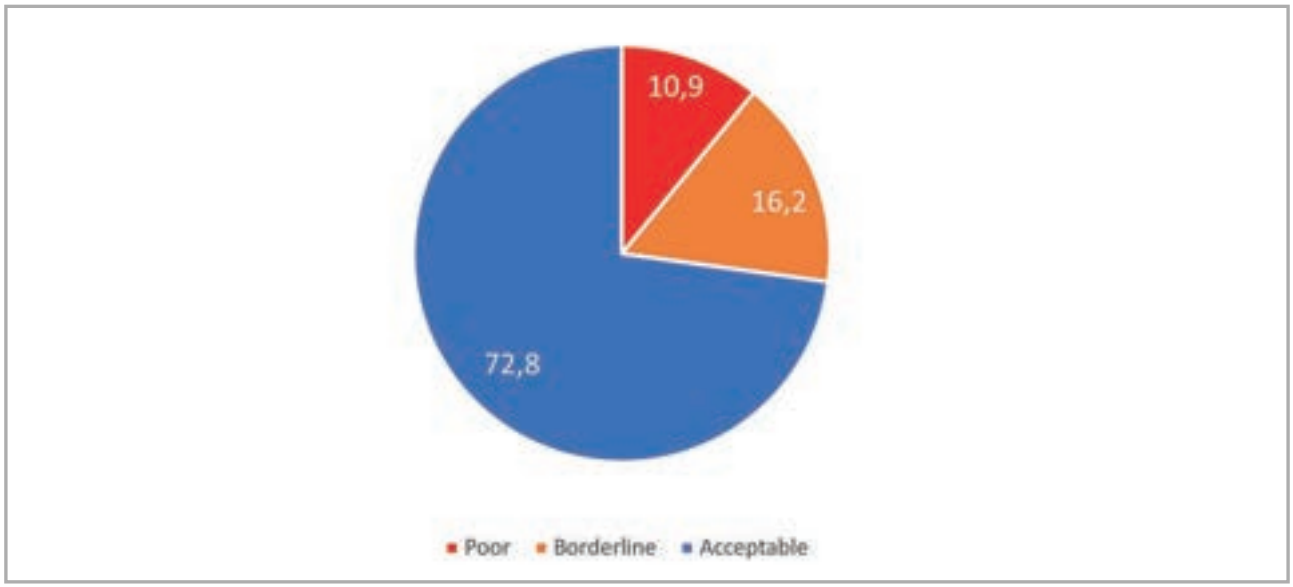


Figure 61: *Food consumption score*

Results in Table 42 present the food consumption score categories according to sex, age, and district.

Table 42: Food Consumption Score by sex, age of household head, and district

		Poor		Borderline		Acceptable	
		N	%	N	%	N	%
Sex of household head	Male	74	10	153	16	746	74
	Female	78	11	121	17	482	72
Household head age	18-24	11	37	11	11	24	53
	25-34	29	16	35	17	133	67
	35-44	33	16	47	20	204	64
	45-54	35	10	55	16	274	75
	55-64	20	6	50	15	293	80
	65+	20	6	62	15	287	79
District	Cape Winelands	9	3	63	25	187	72
	Central Karoo	20	7	32	12	220	81
	City of Cape Town	40	12	47	15	239	73
	Garden Route	31	11	50	17	203	72
	Overberg	31	12	32	13	204	75
	West Coast	24	10	51	20	178	70

Table 42 and Figure 62 presents the results showing the relationship between the sex of household head and food consumption category. The results indicate that male-headed households had slightly more acceptable diets compared to female-headed households. About 74% of the male-headed households were found to have consumed acceptable diets, compared to 72% of the female-headed households. Female-headed households were found in marginally slightly higher proportions in the 'poor' and 'borderline' category.

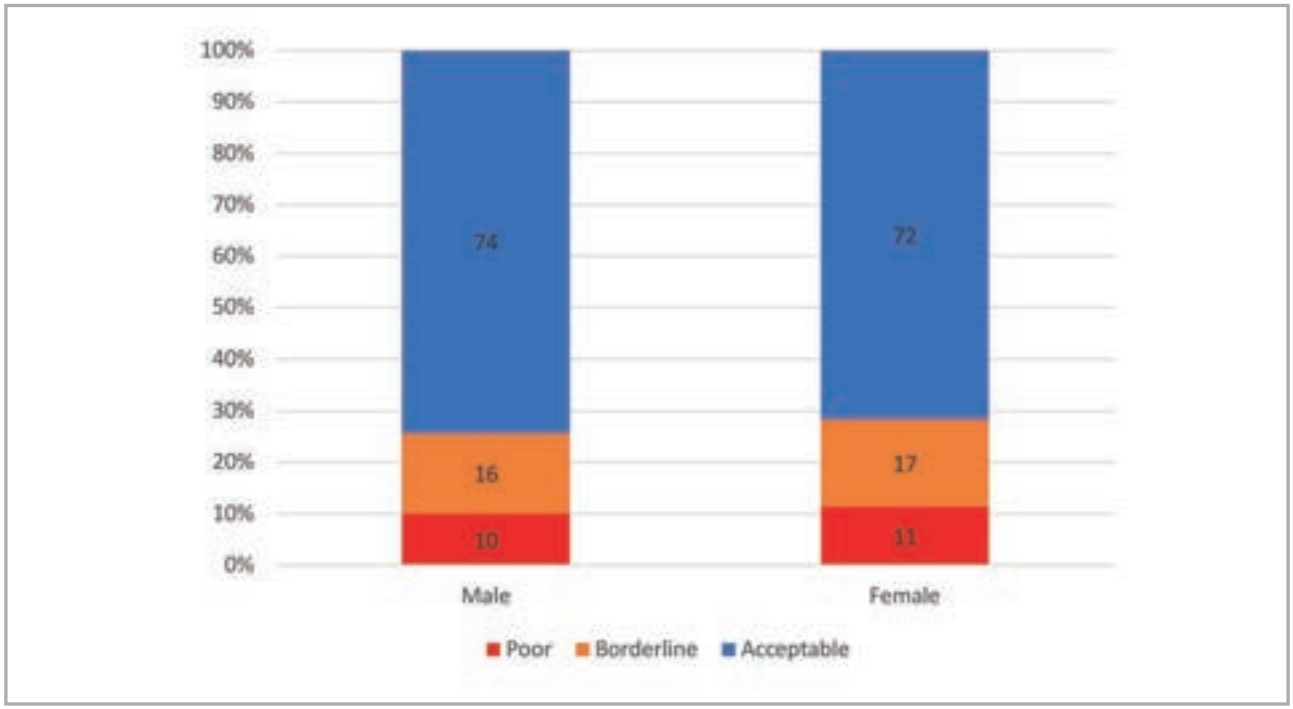


Figure 62: *Food consumption category by sex of household head*

The relationship between the age of household head and the chances of consuming acceptable diets was not linear (Figure 63). The proportion of households who consumed acceptable diets ranged from 53% to 80%. About 53% of the household heads in the age group 18-24 years consumed acceptable diets, whilst 79% of the households in the age group 65+ years were found to have consumed acceptable diets. The most households that consumed acceptable diets were in the age group 55-64 years. The most households in the borderline were in the age groups of 35-44 years, followed by households in the age group of 25-34 years. Most households with poor diets were in the age group of 18-24, with 37% of the households in this age category found to have consumed poor diets.

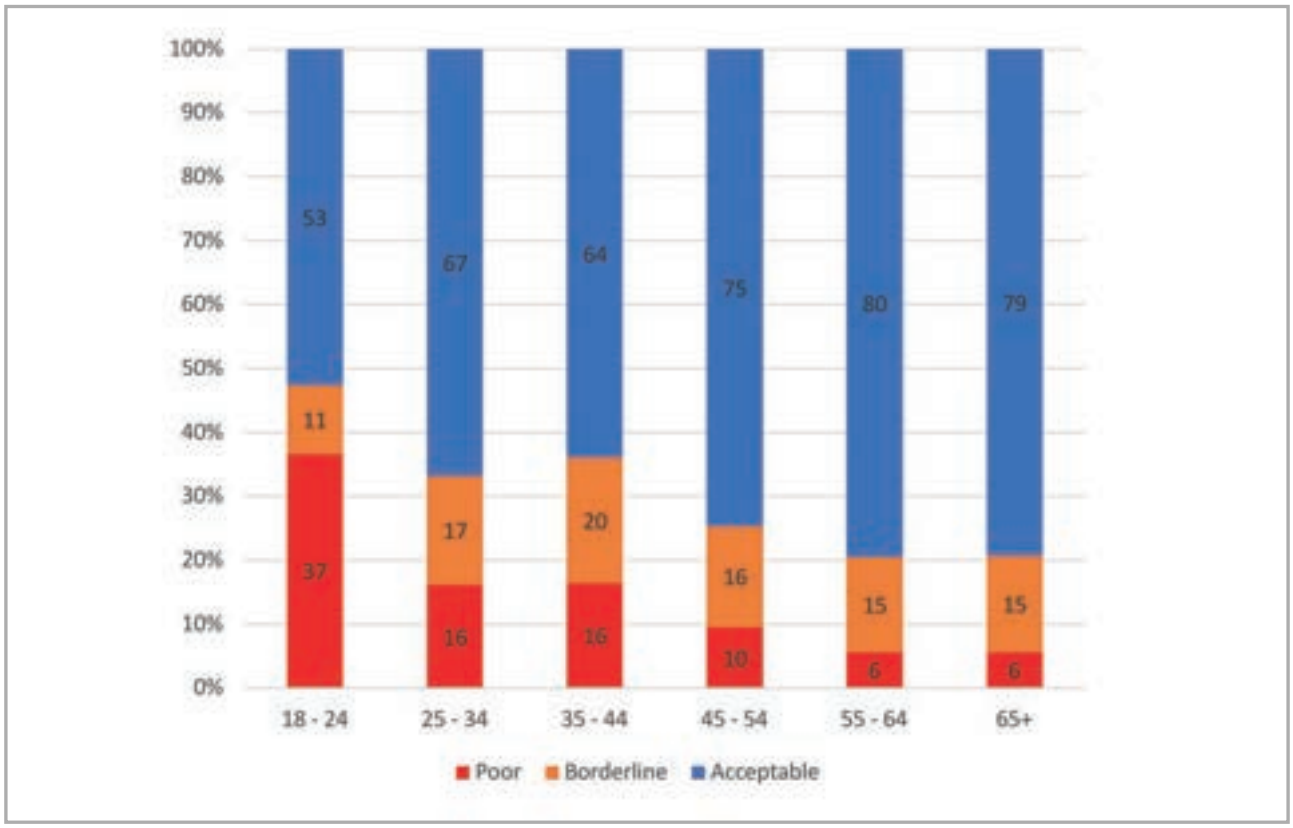


Figure 63: *Food consumption category by age of household head*

Regarding the districts, it was found that more households with poor diets were found in the City of Cape Town and Overberg districts, where 12% of the households from each of these districts were found to be in the category. This was followed by households from the Garden Route and West Coast districts, with 11% and 10% of the households in this category, respectively (Figure 64). Households from the Central Karoo District consumed diverse diets compared to the other districts, with 81% of the households in this category. The highest number of households on the borderline were from Cape Winelands District, followed by households from West Coast District.

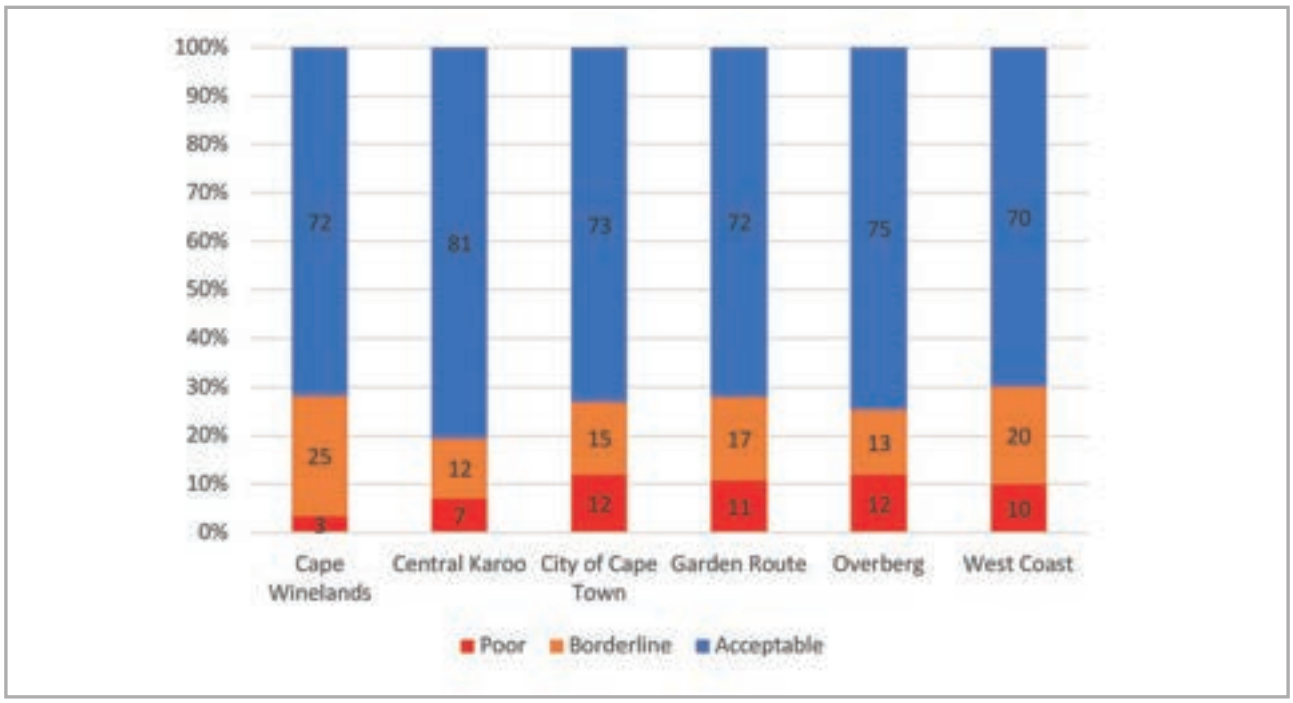


Figure 64: *Food consumption category by district*

7.5 Food expenditure

The food expenditure approach captures food security in terms of the amounts of money spent by a household to acquire food, and whether or not that amount is above or below the food poverty line. The food poverty line, commonly referred to as the 'extreme' poverty line, refers to the amount of money that an individual will need to afford the minimum required daily energy intake (Stats SA, 2021). In 2021, the food poverty line was R624 per person per month (Stats SA, 2021). On average, the households' food expenditure per person per month in the Western Cape Province was 819.60, which is higher than the food poverty line. Using the 2021 food poverty line (i.e., R624), Figure 65 shows that 58% of the households were below the food poverty line. This indicates very high levels of food poverty, which supports the results of the HFIAS.

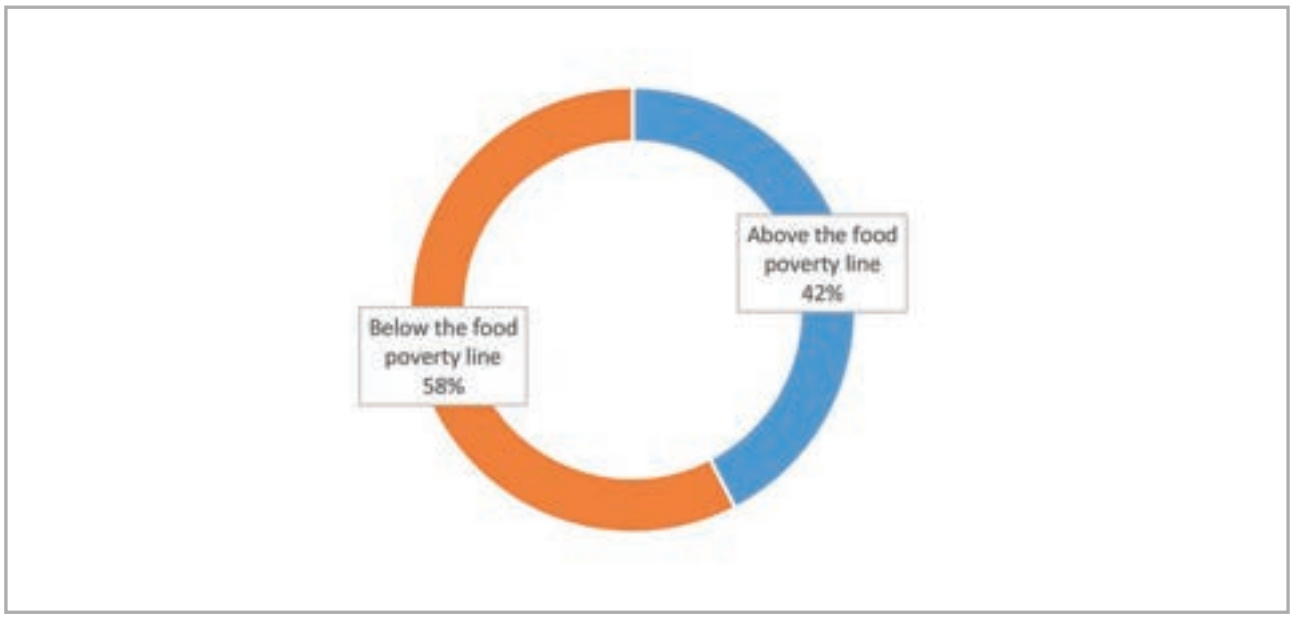


Figure 65: *Food poverty levels in the Western Cape*

The food expenditure and poverty levels varied by sex, age group and district (Table 43). The Table shows that a higher proportion of female-headed households (64.7%) were below the food poverty compared to male-headed households (52.8%). Across the age-groups, the results show food poverty was more prevalent among households headed by the 55-54 groups, and among those headed by heads at least 35-44 years old. Food poverty was relatively less prevalent among households headed by those in the 18-24 age group.

Table 43: Food expenditure per capita per month by sex, age group and district

Variable		Percentage above FPL	Percentage below FPL
All sample		42.4	57.6
Household head Sex	Male	47.2	52.8
	Female	35.3	64.7
Household head Age group	18-24	53.3	46.7
	25-34	43.0	57.0
	35-44	39.0	61.0
	45-54	34.2	65.8
	55-64	44.9	55.1
	65+	48.8	51.2
District	Cape Winelands	42.8	57.2
	Central Karoo	35.5	64.5
	City of Cape Town	41.4	58.6
	Garden Route	45.5	54.5
	Overberg	53.5	46.5
	West Coast	39.2	60.8

7.6 Relationship between household food security situation and socioeconomic factors

Household food security varies according to demographics, socio-economic characteristics, and support levels. This section presents results investigating the extent to which the food security status of households differs according to several factors. For this analysis, the HFIAS categories were merged into a binary food security status variable, indicating whether a household was food secure or food insecure. The three food insecurity categories (i.e., mild, moderate, and severe levels) were all captured as food insecure. Table 44 presents the results. The table shows that significant relationships were found between household food security status and some demographics and socio-economic factors such as gender, age of household heads / acting head, access to irrigation, improved water source, sanitation, social grants, household size, markets, education level of household head/ acting head, and involvement in agricultural production.

Table 44: Relationship of food security and socioeconomic factors

Variables	Categories	Food security status		t / Chi-square tests
		Food secure	Food insecure	
HH Sex	Male	49.6	50.4	***
	Female	38.8	61.2	
HH age	Mean age (years)	53.3	51.3	***
HH age group	18-24	45.6	54.6	***
	25-34	44.6	55.4	
	35-44	42.2	57.8	
	45-54	38.7	61.3	
	55-64	45.2	54.8	
	65+	54.2	45.8	
Marital status	Married	50.4	49.6	***
	Unmarried	39.6	60.4	
District	Cape Winelands	42.0	58.0	***
	Central Karoo	39.6	60.4	
	City of Cape Town	47.0	53.0	
	Garden Route	41.5	58.5	
	Overberg	52.1	47.9	
	West Coast	37.1	62.9	
HH education level	No schooling	28.8	71.2	***
	Primary	22.8	77.8	
	Matric	44.1	55.9	
	Tertiary	82.9	17.1	
Household size	mean	3.3	4.2	***
HH employment status	Employed	36.5	63.5	***
	Unemployed	58.0	42.0	
Access to social grants	Beneficiary	35.1	64.9	***
	Non-beneficiary	49.4	50.6	
Access to land	Yes	44.3	55.7	**
	No	45.2	54.8	
Involved in farming activities	Yes	44.3	55.7	***
	No	45.2	54.8	
Access to irrigation	Yes	68.9	31.1	***
	No	76.1	23.7	
Access to extension	Yes	46.0	54.0	***
	No	42.0	58.0	

Variables	Categories	Food security status		t / Chi-square tests
		Food secure	Food insecure	
Access to markets	Yes	45.2	54.8	***
	No	28.7	71.8	
Access to road infrastructure	Yes	76.1	23.7	***
	No	68.9	31.1	
Location type	Urban, formal & informal	45.2	54.8	**
	Rural, Traditional areas			
	Farms	47.2	52.8	
Access to improved water sources	Yes	53.7	46.3	***
	No	45.2	54.8	
Access to improved sanitation	Yes	26.4	73.6	***
	No	45.7	54.3	

Table 44 shows that female-headed households were significantly more likely to be food insecure than male-headed households. Among male households, 50.4% were food insecure, while 61.2% were food insecure among female-headed households. This result is not unexpected, as females generally have disadvantages in accessing productive resources in traditional communities due to, among others, the historical formulation and implementation of patrilineal laws and cultural traditions, including laws that limit females' inheritance of productive assets such as land. Further, there is often a social and administrative bias towards males, as well as unequal access to education, extension services, training, information, and inputs, which limits the livelihood options for females - compounding the food security plight of their households.

The age of a household head also significantly varied with the food status of their households, with the average age of households in the food secure category marginally higher than that of those in the food insecure category. The relationship between the age of household head and food security status was non-linear, with a higher proportion of households headed by those in the 45-54 years categories appearing more in the food insecure group than in the other households. Households headed by those older than 65 years had a higher proportion of those who are food secure when compared to the rest, followed by households by the youngest head category (18-25). This finding was not expected, since one would expect the household heads in their prime years (late 30s and early 50 years) to have access to more opportunities than those younger or older.

Households in the food secure category had marginally fewer household members than those in the food insecure category, and this difference was statistically significant. This was expected, since more members imply more mouths to feed, thus a greater burden than in smaller ones. While bigger households imply a cheaper, reliable, and committed source of labour, the results suggest that the consumption burden dominates the labour availability dimension. Households headed by married heads (50.4%) experienced higher levels of food security than those headed by unmarried heads (39.6%), presumably because married heads pool their resources.

The table shows a positive and significant relationship between the education level of heads of household heads and household food security. The proportion of food secure households increased significantly as education levels also increased. For example, while 28.8% of households headed by people with no education were food secure, 82.9% of households headed by people with tertiary qualifications were food secure. Educated people have higher opportunities and higher chances of success in their endeavours, which leads to higher economic and welfare outcomes. Also, higher education among farming communities, such as those in the farming regions of the Western Cape, could lead to better information access and assimilation, which may increase awareness of the possible advantages of modernizing agriculture by means of technological

inputs or simply taking advantage of opportunities arising in the area. This leads to higher productivity, food production, and incomes. Even though increasing education is associated with increasing chances of being food secure, the results indicate that it is only after a household head attains a tertiary qualification that education plays a decided role in ensuring food security. The food insecure household category dominates among those with education level attainments of matric and below, with food secure households becoming the majority for those in the tertiary qualification category.

The results show that access to land, as well as involvement in farming activities, did not play a crucial role in the food security status of households in the Western Cape. Among those with access to land, 44.3% were food secure, while 45.2% were food secure among those with no access to land. This result suggests that access to land does not lead to practical differences in the food security status of households in the Western Cape. Households that were involved in agriculture were characterised by marginally higher levels of food security than those not engaged in farming activities. Again, the difference in the proportions was very small (less than a percentage point), indicating that farming does not play a huge role when it comes to food security in the province. Contrary to expectations, however, households with access to irrigation had a smaller proportion of food security (68.9%) in comparison to households with no access to irrigation (76.1%). Households in farms (47.2%) reported higher levels of food security than those in urban (45.2%) areas.

Employment was significantly associated with an increased chance of a household being food insecure. While more than half (63.5%) of households among those headed by employed household heads were food insecure, only just about 42% of those headed by unemployed heads were food insecure. This is contrary to expectations. Employment is expected to play an important role in alleviating the scourge of poverty and food insecurity. Households that were dependent on social grants were more likely to be food insecure than those not dependent on social grants. This indicates that social grants are well-targeted, benefiting the food insecure, whose situation would have been worse without social grants. However, the social grants are not enough to lift households out of food insecurity, as food insecurity remains prevalent among the social grant-dependent households.

The results show that access to infrastructure (such as roads) and basic services (such as improved water sources) are crucial in improving the food security status of households. Access to all-weather roads reduce transport costs to and from the market, whether to buy (inputs, food, etc.), or to sell output. Those located near accessible roads are like to have better access to market information (prices of inputs, food items, commodities), and they are thus in a better position to achieve better transactions and savings. Access to safe water and sanitation are important development goals and are among the most basic human necessities. A community that has safe drinking water, good sanitation, and good hygiene is less likely to be affected by water-borne diseases such as diarrhoea, dysentery, cholera, typhoid, worms, and trachoma.

7.7 Discussion

The food security situation in the Western Cape Province continues to be a cause for concern, although it is better when compared to most provinces in South Africa. The food access indicators have shown that a considerable proportion of households still face difficulties in accessing food, with the Household Food Insecurity Access Score (HFIAS) indicating that more than half of the households (54.7%) in the Western Cape Province experienced food insecurity, with only 45.3% found to be food secure. This figure is considerably higher when compared with previous studies, such as Stats SA (2020), who reported, in the General Household Survey, that 23.7% of the households in the Western Cape Province were experiencing food access difficulties.

The HFIAS also showed that 17.3% of the households were severely food insecure; 22.1% of the surveyed households were moderately food insecure, while 15.3% of the households were mildly food insecure. This household food security situation is not strange, bearing in mind that the data was collected during the COVID-19 pandemic. This implies that the effects of COVID-19 measures may have affected both food availability and access in the study area. While the higher food insecurity figures reported in this study could also be possible because the study largely focussed on open access livelihood zones - and these are generally rural

communities which are traditionally more food insecure and hence you would expect higher food insecurity levels there - the Western Cape has a better food security status compared to other provinces in South Africa, and this province does not have large rural areas as other provinces do (except Gauteng). Overall, these results are in line with most of the food security findings which generally indicate that a significant proportion of households' experience food access challenges in South Africa. For example, the 2021 Global Food Security Report indicated that during the 2018-20 period, 45% of the population in South Africa were characterised by moderate food insecurity, and 19% experienced severe food insecurity. The Rapid Assessment Study on the impact of COVID-19 on food and nutrition security found that about 48.9% of individuals in South Africa have moderate to severe food insecurity.

In addition, the results of the food security status as measured by the Household Hunger Scale (HHS) showed that most of the sampled households experienced little to no hunger (81.1%). About 13.2% and 5.7% of the households experienced moderate hunger and severe hunger, respectively. While a significant proportion of households experienced food insecurity (as shown by the HFIAS results), the HHS suggests that the level of food deprivation is not very severe for most of the households in Western Cape Province. Also, emerging results from the household survey indicate that 83% of the male-headed households experienced little to no hunger, compared to 78% of the female-headed households. This situation indicates that there is a need for interventions tailor-made for female-headed households to assist them to reduce hunger experiences. Likewise, the moderate and severe hunger in the household were slightly more experienced by female-headed households compared to male-headed households.

The Food Consumption Score (FCS) revealed that most households (72.8%) were consuming adequately (acceptable) diversified diets, and about 16.2% of households are at the borderline and could fall into unacceptable diversity of foods if no actions are taken to help them improve their diets. The findings denote the importance for the government to develop interventions that enhance access to diverse foods in most of the districts across areas, as a number of these districts are on borderline diets.

The result shows that the most popular food groups were cereals, condiments, sugars, oils and fats, meats, milk and milk products, other vegetables, meat, roots and tubers, eggs, other fruits, and fresh orange vegetables. The least consumed food groups were fish and sea foods, pulses and nuts, orange-coloured fruits, and dark green leafy vegetables. This shows that the most consumed food groups were mostly the less healthy ones, providing a different light to what a dietary diversity score showed, which gave an impression of a highly diverse and healthy diet.

8 Nutrition

8.1 Child nutrition

South Africa adopted the WHO feeding guidelines, which recommended that infants should be exclusively breastfed until 6 months of age (WHO, 2003; DoH, 2011). It is important to have data on breastfeeding and complementary feeding since this can provide information on the child's growth and immunity and may also explain certain disease conditions. Exclusive breastfeeding for 6 months is particularly important because it provides the best immunity against infectious diseases and, furthermore, decreases the likelihood of the development of gastrointestinal diseases resulting from feeding from bottles which are not properly clean or from infant formula which has not been correctly mixed. Exclusive breastfeeding is encouraged by putting the baby to the breast as soon as possible after giving birth, and by not providing any fluid other than breast milk. The longer this is delayed, the less chance there is of exclusive breastfeeding taking place. It is recommended that semi-solid foods should not be introduced to exclusive breastfeeding infants before 6 months of age since breast milk meets all nutritional requirements; and to infants on other feeding regimes at 4 months of age. Introducing solids too late can also be harmful since infants may not meet all their energy and nutrient requirements.

8.1.1 Infant feeding practices

Breastfeeding status

Data was recorded for a total of 332 children under the age of 2 years. Of those aged 0-11 months (n=158), 89.5% were ever breastfed, while 84.9% were breastfeeding at the time the survey was conducted. In children aged 12-24 months (n=174), 83.5% were ever breastfed, while 61.6% were being breastfed at the time the survey was conducted (Table 45). Both genders had a similar prevalence of currently being breastfed, but female children appeared to have a higher prevalence of ever being breastfed compared to male children, however, these differences were not significant. Reports of between 83.7% and 94.1% were recorded for children that were ever breastfed across all districts, with the Central Karoo District having the highest prevalence; however, no significant differences were reported between districts. The Garden Route District reported the highest prevalence of those currently being breastfed (94.1%), while the Overberg District had the lowest prevalence (54.8%); however, these differences were also not significantly different at a district level. When disaggregating by district, results should be interpreted with caution due to the small sample sizes at district level. Exclusive breastfeeding among those aged 0-6 months was recorded at 22.8% in the Western Cape Province. Due to small sample sizes, the data could not be disaggregated.

Table 45: Breastfeeding status among infants aged 0-24 months in Western Cape

	Ever been breastfed			Currently breastfed1			Exclusively breastfed (0-6 months)		
	%	95% CI	n	%	95% CI	n	%	95% CI	n
Age									
0-11 months	89.5	[75.8-95.9]	158	84.9	[73.4-92.0]	135	22.8	[6.8-54.1]	62
12-24 months	83.5	[72.5-90.7]	174	61.6	[39.3-79.9]	145	0.0		0
Gender									
Male	81.0	[61.0-92.0]	180	74.6	[62.4-83.9]	153	15.8	[5.7-36.5]	41
Female	91.5	[80.8-96.5]	151	74.4	[48.6-89.9]	126			21#

	Ever been breastfed			Currently breastfed1			Exclusively breastfed (0-6 months)		
	%	95% CI	n	%	95% CI	n	%	95% CI	n
District									
Cape Winelands	87.0	[71.7-94.6]	54	61.4	[41.3-78.2]	48	-	-	10#
Central Karoo	94.1	[82.7-98.2]	62	78.2	[58.2-90.2]	55	-	-	12#
City of Cape Town	86.4	[71.8-94.1]	47	76.7	[51.8-91.0]	38	-	-	10#
Garden Route	87.9	[73.0-95.2]	54	82.2	[65.2-91.9]	42	-	-	5#
Overberg	83.7	[67.8-92.6]	57	54.8	[38.9-69.7]	48	-	-	15#
West Coast	88.5	[78.2-94.3]	58	80.5	[67.3-89.3]	49	-	-	10#
Total	**86.7**	**[77.6-92.5]**	**332**	**74.5**	**[58.6-85.8]**	**280**	**22.8**	**[6.8-54.2]**	**62**

[1]among those ever breastfed

* cell sample sizes too small to generate reasonable estimate

n<30

8.1.1.1 Time lapsed until the introduction of breastfeeding

In the majority of infants aged 0-24months, (n=280), breastfeeding was introduced immediately (93.0%), within the first hour (3.6%) or within 24 hours (2.6%) (Table 46). Only in 0.8% of cases was breastfeeding introduced more than 24 hours after birth. There were no significant differences reported between children aged 0-11 months and 12-24 months. Neither were there any significant differences reported between male and female children, or between districts.

Of all the districts, Garden Route, reported the lowest proportion of children to be immediately breastfed (81.3%), while the City of Cape Town reported 95.1% and the Cape Winelands district reported 95.8% (Table 46). However, due to the small sample size at district level, results should be interpreted with caution.

Table 46: Time lapsed until the introduction of breastfeeding among infants aged 0-24 months in Western Cape

	Immediately		Less than one hour		Less than 24 hours		More than 24 hours		Don't know		
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	n
Age											
0-11 months	95.9	[87.2-98.8]	0.9	[0.2-3.5]	2.3	[0.4-13.8]	0.9	[0.1-5.3]	0.0	[0.0-0.2]	134
12-24 months	89.5	[75.4-95.9]	6.9	[1.8-22.8]	3.0	[0.8-10.2]	0.6	[0.1-4.5]	0.0	[0.0-0.3]	146
Gender											
Male	89.3	[75.4-95.8]	7.2	[2.1-22.3]	2.8	[0.6-12.1]	0.6	[0.1-4.5]	0.1	[0.0-0.6]	153
Female	96.1	[86.8-98.9]	0.8	[0.1-4.8]	2.3	[0.3-13.8]	0.9	[0.1-5.4]	0.0		126
District											
Cape Winelands	95.8	[87.4-98.7]	0.8	[0.1-5.7]	1.2	[0.2-8.5]	2.1	[0.3-13.0]	0.0		48
Central Karoo	89.1	[75.2-95.7]	2.0	[0.3-12.4]	5.6	[1.6-18.2]	0.0		3.3	[0.5-20.0]	56
City of Cape Town	95.1	[85.4-98.5]	3.5	[0.7-15.7]	1.4	[0.3-7.5]	0.0		0.0		38
Garden Route	81.3	[58.4-93.1]	4.2	[0.8-19.8]	14.5	[3.3-45.4]	0.0		0.0		42
Overberg	89.5	[61.0-97.9]	0.9	[0.1-6.9]	0.0		9.6	[1.6-40.3]	0.0		48

	Immediately		Less than one hour		Less than 24 hours		More than 24 hours		Don't know		
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	n
West Coast	86.3	[68.6-94.8]	9.5	[3.2-24.8]	3.5	[1.1-10.2]	0.7	[0.1-4.4]	0.0		48
Total	**93.0**	**[86.8-96.5]**	**3.6**	**[1.2-10.1]**	**2.6**	**[0.9-7.4]**	**0.8**	**[0.2-3.0]**	**0.0**	**[0.0-0.2]**	**280**

8.1.1.2 Age at which breastfeeding was stopped

In children aged 0-24 months (n=87), breastfeeding was most often stopped between the ages of 7-12 months (45.8%), followed by 3-4 months (30.3%). More than 50% of mothers stopped breastfeeding before the age of 6 months (8.9% stopped breastfeeding before 3 months, 30.3% stopped between 3-4 months, and 14.8% stopped between 5-6 months (Figure 66)). Only 0.3% of mothers continued to breastfeed for longer than 12 months, with only 0.3% continuing up to 24 months. Due to small sample sizes, no comparisons could be made at both an age group and district level.

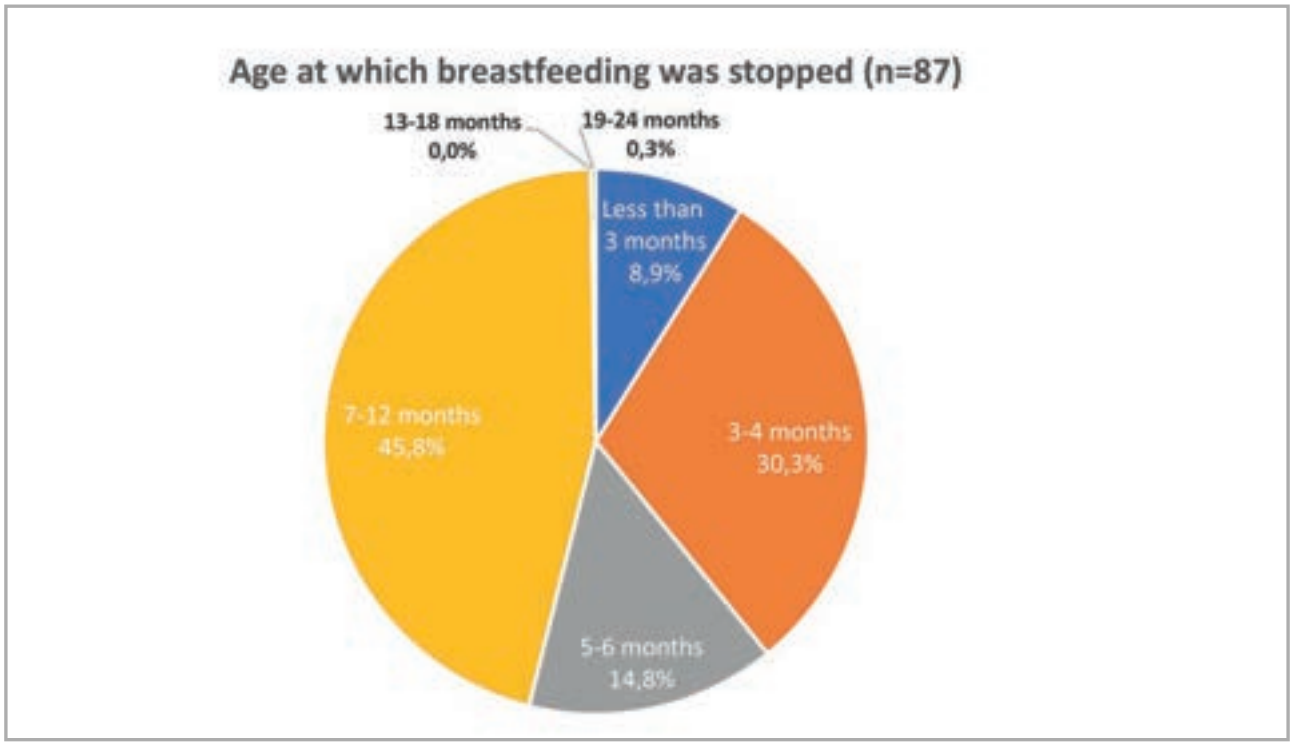


Figure 66: *Age at which breastfeeding was stopped among infants aged 0-24 months in Western Cape*

8.1.1.3 First drink other than breast milk

Infant formula (47.2%) and plain water (24.5%) were reported to be the most common first drink other than breastmilk that was introduced to infants under 2 years of age (Figure 67). There were, however, no significant differences found between age groups and gender (Table 47).

Mothers in all districts, except Garden Route, reported that infant formula, followed by water, and gripe water was the most common first drink introduced to children aged 0-24 months. There was a significant difference at district level, where nearly double the number of mothers in the Overberg (71.3%) reported infant formula as the first drink compared to those in the West Coast (35.8%). Mothers in Garden Route, however, reported that gripe water (21.0%) was introduced more often than plain water (16.1%) to children in this district. Other drinks such as juice, tea, and medicine were reported as first drinks by less than 15.0% of mothers across all districts. It is important to note, though, thatdistrict-level comparisons must be interpreted with caution due to the small sample sizes.

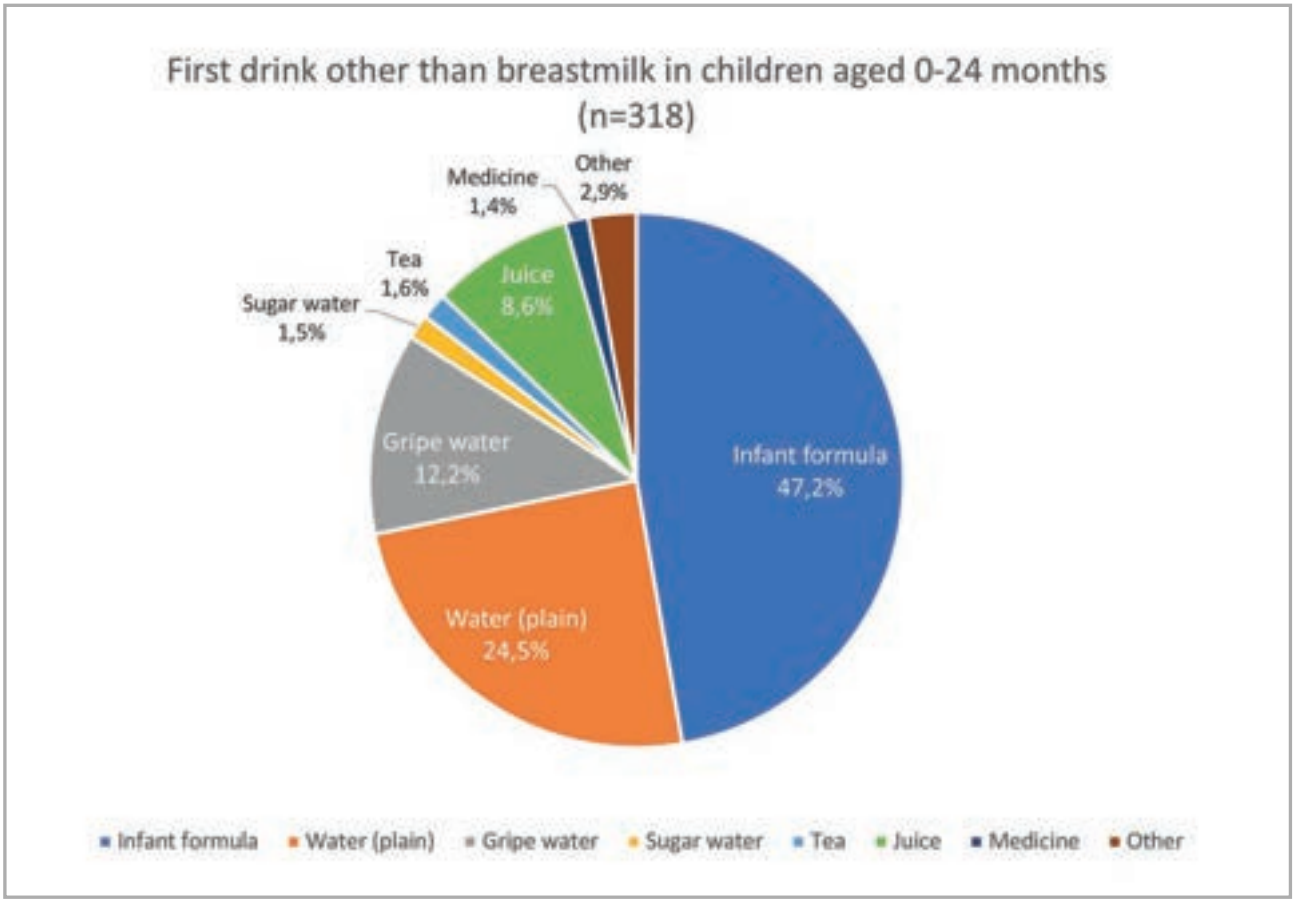


Figure 67: *First drink other than breast milk among children aged 0-24 months in Western Cape*

Table 47: The first drink other than breast milk among children aged 0-24 months by district in Western Cape

	Infant formula		Water (plain)		Gripe water		Sugar water		Tea		Juice		Medicine		Other		
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	n
Age																	
0-11 months	43.2	[26.5-61.6]	19.3	[10.3-33.3]	14.6	[6.3-30.1]	1.3	[0.2-6.6]	1.9	[0.3-12.5]	14.1	[2.1-55.9]	1.5	[0.3-6.5]	4.0	[1.4-10.7]	146
12-24 months	51.6	[39.0-64.0]	30.1	[17.9-46.1]	9.6	[4.6-19.0]	1.8	[0.4-7.1]	1.2	[0.4-3.5]	2.6	[0.7-8.3]	1.3	[0.2-6.6]	1.8	[0.4-8.7]	172
Gender																	
Male	39.4	[28.0-52.1]	35.5	[21.7-52.2]	15.6	[6.6-32.6]	1.6	[0.4-6.9]	0.8	[0.2-2.6]	1.5	[0.3-7.6]	1.8	[0.4-6.7]	3.8	[1.3-10.7]	171
Female	54.1	[30.0-76.4]	14.9	[8.7-24.4]	9.2	[3.5-22.0]	1.4	[0.3-7.1]	2.3	[0.4-11.4]	14.8	[2.5-54.1]	1.1	[0.2-7.3]	2.2	[0.6-8.2]	146
District - WC																	
Cape Winelands	53.0	[33.9-71.3]	22.2	[11.0-39.9]	9.3	[2.9-25.9]	1.1	[0.1-7.7]	1.3	[0.2-9.3]	6.9	[1.6-25.3]	0.0		6.2	[1.2-26.2]	53
Central Karoo	61.3	[39.9-79.0]	14.3	[7.0-27.1]	11.0	[4.4-24.9]	5.5	[1.6-17.4]	0.0		0.0		7.8	[2.6-21.4]	0.0		58
City of Cape Town	47.5	[29.6-66.0]	27.0	[16.5-40.9]	11.8	[4.5-27.5]	1.7	[0.4-7.0]	0.0		11.2	[1.6-49.9]	0.9	[0.1-4.8]	0.0		46
Garden Route	33.6	[15.3-58.5]	16.1	[7.3-31.8]	21.0	[9.0-41.7]	1.1	[0.3-4.5]	13.0	[3.6-37.7]	0.0		1.8	[0.2-12.6]	13.5	[3.4-41.1]	54

	Infant formula		Water (plain)		Gripe water		Sugar water		Tea		Juice		Medicine		Other		
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	n
Overberg	71.3	[52.3-84.9]	16.4	[6.6-35.2]	7.5	[2.6-19.3]	0.0		1.0	[0.2-5.6]	2.0	[0.4-9.1]	1.0	[0.2-4.6]	0.9	[0.1-6.9]	50
West Coast	35.8	[24.7-48.6]	22.9	[10.8-42.2]	13.7	[3.5-40.8]	1.4	[0.3-6.2]	3.2	[0.8-11.5]	3.2	[0.7-12.9]	7.5	[1.3-32.9]	12.3	[5.0-27.3]	57
Total	**47.2**	**[34.5-60.3]**	**24.5**	**[17.1-33.8]**	**12.2**	**[6.4-22.0]**	**1.5**	**[0.5-4.4]**	**1.6**	**[0.4-5.7]**	**8.6**	**[1.6-34.9]**	**1.4**	**[0.5-3.9]**	**2.9**	**[1.2-7.0]**	**318**

8.1.1.4 Age at which the first drink other than breast milk was introduced

Overall, the first drink other than breastmilk was mainly introduced at 0-1month (29.5%), followed by 3 months (20.3%). The same pattern was followed for children in both age groups, with 33.1% and 18.7% of children aged 0-11months and 25.6% and 22.0% of children aged 12-24 months, introduced to other drinks 0-1months and 3 months, respectively, with no significant differences shown between age groups (Table 48). We can assume that the introduction of other drinks before the age of 1 month is most likely the introduction of infant formula. Of the remaining children, 7.1% of children were introduced to other drinks at 2 months and about a third (30.7%) were only introduced from 6 months of age.

When doing comparisons by gender, the trend was more or less the same as the overall trend. There were no significant differences between genders from 0-5 months of age. However, there was a significant difference at 6 months, where significantly more males (22.6%) were introduced to other drinks compared to 5.2% of females. Similarly, while not significant, but tending to significance, more females were introduced to other drinks after 6 months of age (29.0%) compared to 3.7% of males. This seems to indicate that more female children are possibly exclusively breastfed for up to 6 months compared to male children.

Similar patterns were displayed across districts, where around a third of children were introduced to other drinks before the age of 1 month (27.3%-42.0%). However, at 3 months of age, there were significant differences at a district level where the West Coast reported a far lower proportion of children (3.8%) compared to the Cape Winelands (31.9%), Central Karoo (29.9%), and Overberg (25.6%) districts. There were also significant differences after 6 months of age, where those in the City of Cape Town reported a significantly higher proportion of children 23.0% compared to 0.6% and 0.7% in the Garden Route and the Central Karoo, respectively.

Table 48: Age at which the first drink other than breastmilk was introduced among infants aged 0-24 months in Western Cape

	0-1 month		2 months		3 months		4 months		5 months		6 months		>6 months		
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	n
Age															
0-11 months	33.1	[18.3-52.2]	9.3	[4.8-17.2]	18.7	[6.8-42.0]	10.3	[3.1-29.3]	2.9	[0.7-11.4]	10.5	[4.0-24.7]	15.3	[2.5-56.0]	142
12-24 months	25.6	[16.6-37.3]	4.7	[1.4-14.6]	22.0	[11.7-37.6]	10.3	[3.8-25.1]	1.4	[0.5-4.3]	16.3	[6.7-34.6]	19.6	[6.5-46.1]	169
Gender															
Male	31.9	[20.7-45.7]	9.9	[4.8-19.2]	19.4	[9.2-36.4]	10.5	[4.3-23.5]	1.9	[0.6-5.5]	22.6	[11.2-40.3]	3.7	[1.3-10.3]	166
Female	27.5	[15.1-44.7]	4.7	[2.1-10.4]	21.1	[5.9-53.4]	10.1	[3.0-28.7]	2.5	[0.4-13.2]	5.2	[2.7-9.9]	29.0	[10.0-59.9]	144
District															
Cape Winelands	28.7	[16.1-45.7]	12.7	[3.6-36.2]	31.9	[12.5-60.6]	4.6	[0.9-21.6]	0.6	[0.1-4.2]	15.6	[8.0-28.1]	6.0	[2.0-16.7]	52

	0-1 month		2 months		3 months		4 months		5 months		6 months		>6 months		
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	n
Central Karoo	21.7	[10.9-38.5]	9.3	[3.4-23.1]	29.9	[11.9-57.3]	4.3	[1.2-14.1]	7.6	[2.1-23.9]	26.5	[10.2-53.2]	0.7	[0.1-4.7]	57
City of Cape Town	27.3	[15.7-43.3]	6.3	[2.3-16.2]	19.1	[5.7-48.2]	13.4	[5.5-29.0]	0.0		10.8	[3.5-28.9]	23.0	[7.6-52.3]	45
Garden Route	36.4	[16.8-61.8]	2.7	[0.9-7.7]	21.9	[8.3-46.3]	5.5	[1.2-22.7]	18.7	[7.1-40.8]	14.2	[4.1-39.4]	0.6	[0.1-4.9]	54
Overberg	31.7	[14.3-56.5]	15.3	[7.0-30.4]	25.6	[15.0-40.2]	2.6	[0.7-8.8]	0.0		20.2	[9.9-36.7]	4.6	[0.6-28.0]	50
West Coast	42.0	[26.1-59.8]	4.6	[1.4-13.7]	3.8	[1.4-10.1]	2.5	[0.7-8.4]	5.5	[0.9-26.7]	25.7	[11.0-49.2]	15.9	[6.4-34.3]	53
Total	**29.5**	**[20.4-40.5]**	**7.1**	**[3.6-13.4]**	**20.3**	**[9.4-38.6]**	**10.3**	**[4.9-20.2]**	**2.2**	**[0.7-6.9]**	**13.3**	**[6.9-24.2]**	**17.4**	**[6.4-39.3]**	**311**

8.1.1.5 Milk Feeds

The mean age at which milk feeds were introduced to children was significantly higher in those aged 12-24 months (5.5 months) compared to those aged 0-11 months (2.9 months) (Table 49). There were no significant differences between male and female children, nor were there significant differences at a district level. District level comparisons were only possible for Cape Winelands (3.4 months), Garden Route (3.1 months), and West Coast (5.4 months) as other districts could not be reported due to small sample sizes. Comparisons at the district level for those with data should still, however, be interpreted with caution.

Table 49: Mean age at introduction of milk feeds among infants 0-24 months old in Western Cape

	Mean	95% CI	n
Age			
0-11 months	2.9	[2.3-3.4]	84
12-24 months	5.5	[3.6-7.3]	104
Gender			
Male	4.3	[2.2-6.3]	109
Female	4.5	[2.0-7.1]	78
District			
Cape Winelands	3.4	[2.6-4.3]	36
Central Karoo	-	-	28#
City of Cape Town	-	-	29#
Garden Route	3.1	[2.1-4.2]	34
Overberg	-	-	28#
West Coast	5.4	[4.2-6.6]	33
Total	**4.4**	**[3.1-5.8]**	**188**

n<30

With the exception of breastmilk, the majority of infants (83.1%) were receiving infant formula, followed by diluted cow milk (8.2%), full strength cow milk (6.2%), KLIM/ Nespray (5.2%) and 3.1% receiving other milk (Table 50). No significant differences were observed between age groups nor genders. At a district level, while there appear to be significant differences between the Cape Winelands and the West Coast for full strength cow milk and infant formula, comparisons should be interpreted with caution due to the small sample sizes.

Table 50: The type of milk other than breast milk that the infant receives (among infants aged 0-24 months who are receiving milk feeds) in Western Cape

	Cow's milk (full strength)		Cow's milk (diluted)		Goats milk		KLIM / Nespray		Infant formula		Other		
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	n
Age													
0-11 months	2.0	[0.6-6.2]	0.0		0.0	-	0.0		95.6	[86.6-98.6]	4.0	[1.0-13.9]	84
12-24 months	9.0	[3.2-22.8]	13.8	[3.4-42.0]	0.0	-	8.7	[2.9-23.1]	74.6	[56.7-86.8]	2.6	[0.9-6.9]	104
Gender													
Male	9.0	[3.3-22.2]	14.6	[3.7-43.4]	0.0	-	9.6	[2.1-34.2]	71.2	[50.7-85.7]	3.9	[1.2-11.5]	109
Female	3.1	[0.8-11.4]	2.2	[0.4-12.2]	0.0	-	0.6	[0.1-2.4]	94.3	[84.4-98.0]	2.4	[0.8-7.4]	78
District													
Cape Winelands	4.7	[2.0-10.5]	0.0		0.0	-	0.0		90.9	[84.0-95.0]	8.2	[3.0-20.4]	36
Central Karoo	-	-	-	-	-	-	-	-	-	-	-	-	28#
City of Cape Town	-	-	-	-	-	-	-	-	-	-	-	-	29#
Garden Route	9.9	[3.9-22.8]	0.0		0.0	-	0.3	[0.0-2.6]	79.6	[50.8-93.6]	11.6	[1.9-46.7]	34
Overberg	-	-	-	-	-	-	-	-	-	-	-	-	28#
West Coast	31.5	[11.0-63.1]	4.0	[0.6-23.6]	0.0	-	7.8	[2.1-24.7]	45.9	[25.5-67.6]	18.2	[6.7-40.8]	33
Total	**6.2**	**[2.5-14.3]**	**8.2**	**[2.0-28.3]**	**0.0**	**-**	**5.2**	**[1.5-16.4]**	**83.1**	**[68.6-91.7]**	**3.1**	**[1.3-7.5]**	**188**

* cell sample sizes too small to generate reasonable estimate

n<30

8.1.1.6 Solid foods

The mean age at which the first semi-solid or solid foods were introduced was 5.2 months. There were no significant differences, between age groups, gender, and districts. (Table 51).

Table 51: Age of introduction of first semi-solid or solid food and the types of foods among infants 0-24 months in Western Cape

	Mean	95% CI	n
Age			
0-11 months	4.6	[3.9-5.3]	118
12-24 months	5.7	[4.4-7.1]	174

	Mean	95% CI	n
Gender			
Male	4.7	[3.9-5.5]	158
Female	5.6	[4.2-7.1]	133
District			
Cape Winelands	4.3	[3.6-5.0]	47
Central Karoo	4.9	[4.4-5.4]	56
City of Cape Town	5.5	[4.1-6.8]	39
Garden Route	4.9	[4.2-5.6]	52
Overberg	5.1	[4.3-5.9]	46
West Coast	4.7	[4.0-5.5]	52
Total	**5.2**	**[4.3-6.1]**	**292**

Table 52 shows that commercial infant cereal was the first semi-solid food given to the majority of children aged 0-24 months (58.1%), followed by homemade infant cereal/porridge (26.0%) and pureed /mashed fruit / vegetables (5.9%). Less than 3.0% of infants had cereal/ porridge supplied by the clinic and bottled/ canned baby foods as their first semi-solid foods, while 5.5% and 2.3% of mothers reported other foods and traditional baby foods as their infants first food, respectively. There were no significant differences when disaggregating by gender or district.

Table 52: Types of first semi-solid or solid food among infants 0-24 months in Western Cape

	Name of first semi-solid or solid food (with a spoon or fingers)														
	Infant Cereal / Porridge (commercial)		Cereal / Porridge (homemade)		Cereal / Porridge (clinic)		Pureed / mashed vegetables / fruit		Bottled / canned baby foods		Traditional baby food		Other (specify)		
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	n
Age (months)															
0-11 months	64.9	[43.1-81.9]	11.2	[2.8-35.7]	0.4	[0.1-2.9]	10.3	[2.8-31.4]	3.5	[0.6-17.5]	0.0		9.7	[4.9-18.3]	129
12-24 months	51.5	[34.0-68.7]	40.5	[24.3-59.1]	0.5	[0.1-2.5]	1.6	[0.6-4.1]	0.0	[0.0-0.1]	4.4	[1.0-17.1]	1.5	[0.3-6.5]	168
Gender															
Male	59.1	[40.3-75.6]	23.1	[8.8-48.2]	0.4	[0.1-3.3]	3.5	[1.5-8.2]	3.4	[0.5-18.6]	3.5	[0.8-14.1]	7.0	[3.1-14.7]	160
Female	57.4	[33.0-78.7]	28.5	[11.5-55.0]	0.5	[0.1-2.4]	8.0	[1.6-31.1]	0.3	[0.1-1.4]	1.1	[0.2-7.9]	4.2	[1.7-10.0]	136
District															
Cape Winelands	71.8	[54.9-84.3]	14.8	[8.5-24.4]	1.3	[0.2-9.6]	2.6	[0.6-10.8]	0.0		0.0		9.5	[2.8-27.6]	51
Central Karoo	60.2	[38.3-78.6]	17.0	[7.3-34.6]	0.0		17.0	[4.5-47.0]	0.7	[0.1-4.9]	1.2	[0.2-7.4]	4.0	[1.0-15.1]	56
City of Cape Town	53.9	[31.9-74.6]	32.2	[14.5-57.1]	0.0		6.1	[1.2-26.5]	2.3	[0.3-15.9]	3.4	[0.7-14.4]	2.0	[0.4-10.9]	39
Garden Route	64.3	[45.5-79.6]	17.8	[11.0-27.6]	3.0	[1.0-8.6]	4.7	[1.2-16.9]	0.0		0.0		10.1	[2.6-31.7]	52

	Name of first semi-solid or solid food (with a spoon or fingers)														
	Infant Cereal / Porridge (commercial)		Cereal / Porridge (homemade)		Cereal / Porridge (clinic)		Pureed / mashed vegetables / fruit		Bottled / canned baby foods		Traditional baby food		Other (specify)		
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	n
Overberg	61.2	[36.9-80.9]	18.6	[9.7-32.6]	0.0		18.2	[6.3-42.6]	2.0	[0.5-8.5]	0.0		0.0		46
West Coast	59.8	[44.1-73.7]	9.6	[5.4-16.7]	0.0		3.4	[1.1-9.4]	1.8	[0.4-8.3]	0.4	[0.0-2.8]	25.1	[13.3-42.2]	53
Total	**58.1**	**[42.4-72.4]**	**26.0**	**[13.5-44.3]**	**0.5**	**[0.1-1.6]**	**5.9**	**[1.9-16.7]**	**1.7**	**[0.3-9.4]**	**2.3**	**[0.5-8.9]**	**5.5**	**[2.9-10.2]**	**297**

8.1.2 Anthropometry (0-59 months)

This section presents the key nutrition findings for children aged 0-59 months. It presents anthropometric measures such as stunting, wasting and underweight, which are important indicators in the assessment of child health and nutrition status. It highlights both forms of moderate and severe acute malnutrition among children under the age of five. The prevalence of malnutrition remains a public health problem which results in substantial mortality and disease burden worldwide. The Lancet series (2013) reported that malnutrition account for 45% of all deaths of children under the age of five. This estimate translated to 3.1 million deaths globally in 2011. It is further reported that it includes intrauterine fetal growth restriction, stunting, wasting, and micronutrient deficiency, especially of vitamin A and Zinc. This occurs along with poor infant feeding practices, which are indicated by suboptimum breastfeeding.

Anthropometric data was recorded for 718 children under the age of 5 years, of these, there were a slightly higher number of boys (51.1%) than girls (48.9%) (Table 53).

Table 53: Distribution of age and sex of the sample in Western Cape

	Boys		Girls		Total	
AGE (months)	**n**	**%**	**n**	**%**	**n**	**%**
<6	41	65.1	22	34.9	63	8.8
6-17	85	50.6	83	49.4	168	23.4
18-29	94	52.8	84	47.2	178	24.8
30-41	58	43.6	75	56.4	133	18.5
42-53	64	49.2	66	50.8	130	18.1
54-59	25	54.3	21	45.7	46	6.4
Total	**367**	**51.1**	**351**	**48.9**	**718**	**100**

8.1.2.1 Stunting

The overall prevalence of stunting for children under the age of 5 years (n=688) was 42.4%, of which 21.4% was severe and 21.1% was moderate stunting (Table 54 and Figure 68). It appears as if overall stunting is most prevalent in those aged 6-29 months, as more than half the children in these age groups were stunted. Significantly more children aged 6-17 months (56.6%) were stunted compared to 18.8% of those aged 30-41 months. However, when disaggregating by severe and moderate stunting, there were no significant differences across age groups (Table 54 and Figure 68).

Comparisons by gender in all children in Western Cape under 5 years of age indicated that females had a slightly higher prevalence of stunting (43.7%) compared to males (41.2%); however, this was not significant (Table 51 and Figure 69). Generally, it seems as if moderate and severe stunting were more or less evenly distributed in females (21.0% and 22.7%, respectively), and males (21.1% and 20.1%, respectively).

District comparisons show that the overall prevalence of stunting was significantly lower in the Overberg, where only one-fifth of children (20.5%) were stunted compared to nearly half the children in the Central Karoo, City of Cape Town, and Garden Route (49.2%, 43.9% and 44.2%, respectively). However, there were no significant differences at a district level when disaggregating by moderate and severe stunting. Generally, moderate stunting and severe stunting were more or less equally distributed in all districts except in the Garden Route, where 10% more children were severely stunted compared to moderately stunted, and the West Coast, where nearly 6% more children were moderately stunted compared to those who were severely stunted (Table 51 and Figure 69).

Table 54: The prevalence of stunting in children under 5 years by age, sex, and district in Western Cape

	No stunting HAZ>=-2		All stunting HAZ<-2		Moderate stunting HAZ<-2 and >=-3		Severe stunting HAZ<-3		
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	n
Age (months)									
<6	70.9	[49.0-86.1]	29.1	[13.9-51.0]	5.8	[1.4-21.4]	23.3	[9.8-45.9]	59
6-17	43.4	[27.3-61.1]	56.6	[38.9-72.7]	28.9	[17.3-44.2]	27.7	[13.5-48.3]	165
18-29	47.0	[28.2-66.7]	53.0	[33.3-71.8]	21.9	[9.9-41.8]	31.2	[12.1-59.7]	173
30-41	81.2	[65.3-90.8]	18.8	[9.2-34.7]	10.9	[4.4-24.2]	8.0	[3.1-19.0]	132
42-53	63.7	[34.7-85.2]	36.3	[14.8-65.3]	27.4	[8.1-61.6]	9.0	[3.6-20.4]	120
54-59	79.2	[45.9-94.5]	20.8	[5.5-54.1]	9.0	[1.9-34.1]	11.7	[2.2-44.1]	39
Gender									
Female	56.3	[42.9-68.9]	43.7	[31.1-57.1]	21.0	[11.8-34.6]	22.7	[9.2-45.8]	340
Male	58.8	[44.1-72.1]	41.2	[27.9-55.9]	21.1	[13.2-32.0]	20.1	[13.4-29.1]	348
District									
Cape Winelands	61.3	[45.3-75.2]	38.7	[24.8-54.7]	19.9	[12.3-30.5]	18.8	[9.9-33.0]	104
Central Karoo	50.8	[34.4-67.1]	49.2	[32.9-65.6]	22.7	[15.0-32.9]	26.4	[16.2-40.0]	145
City of Cape Town	56.1	[44.9-66.8]	43.9	[33.2-55.1]	22.2	[13.7-33.7]	21.7	[11.0-38.3]	91
Garden Route	55.8	[41.1-69.6]	44.2	[30.4-58.9]	17.2	[9.0-30.3]	27.0	[16.3-41.2]	128
Overberg	79.5	[70.4-86.4]	20.5	[13.6-29.6]	10.9	[6.9-16.8]	9.6	[4.4-19.5]	102
West Coast	54.0	[36.3-70.8]	46.0	[29.2-63.7]	25.8	[15.0-40.7]	20.2	[10.2-35.9]	118
Total	**57.6**	**[49.4-65.3]**	**42.4**	**[34.7-50.6]**	**21.1**	**[15.0-28.8]**	**21.4**	**[13.5-32.2]**	**688**

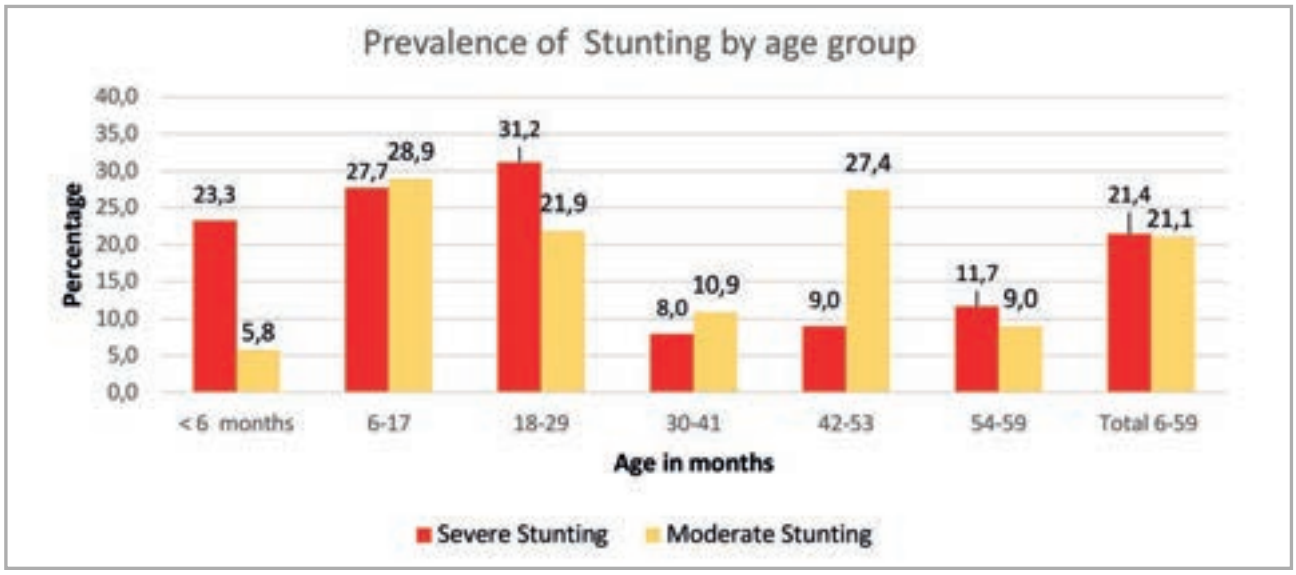


Figure 68: *The prevalence of Stunting in children under 5 years by age group in Western Cape*

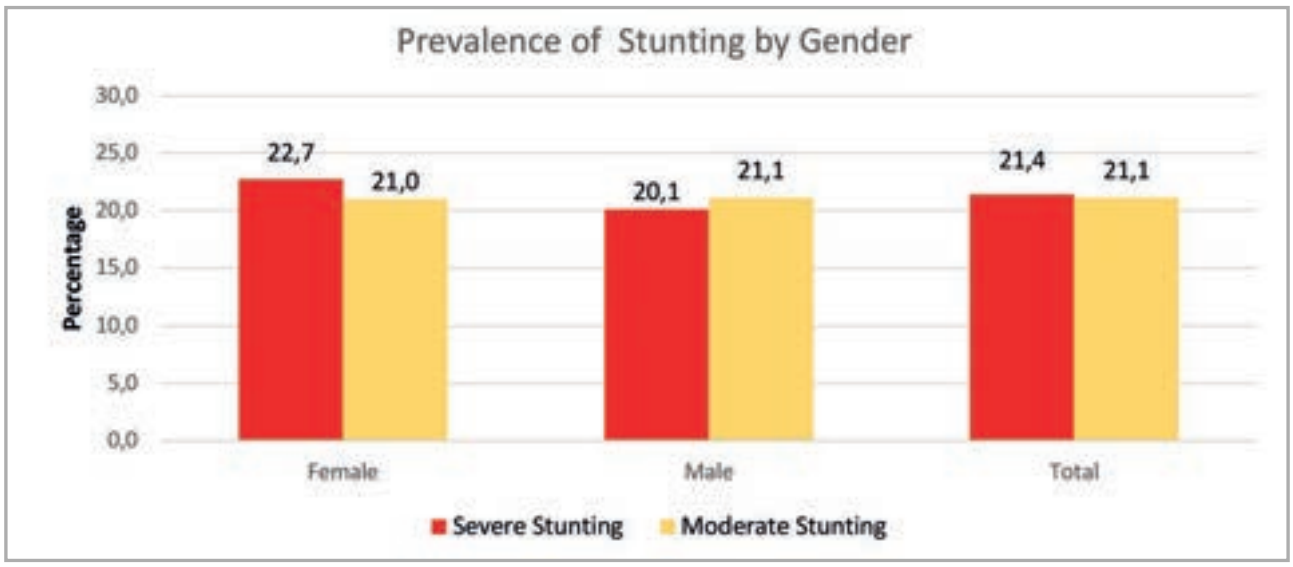


Figure 69: *The prevalence of Stunting in children under 5 years by gender in Western Cape*

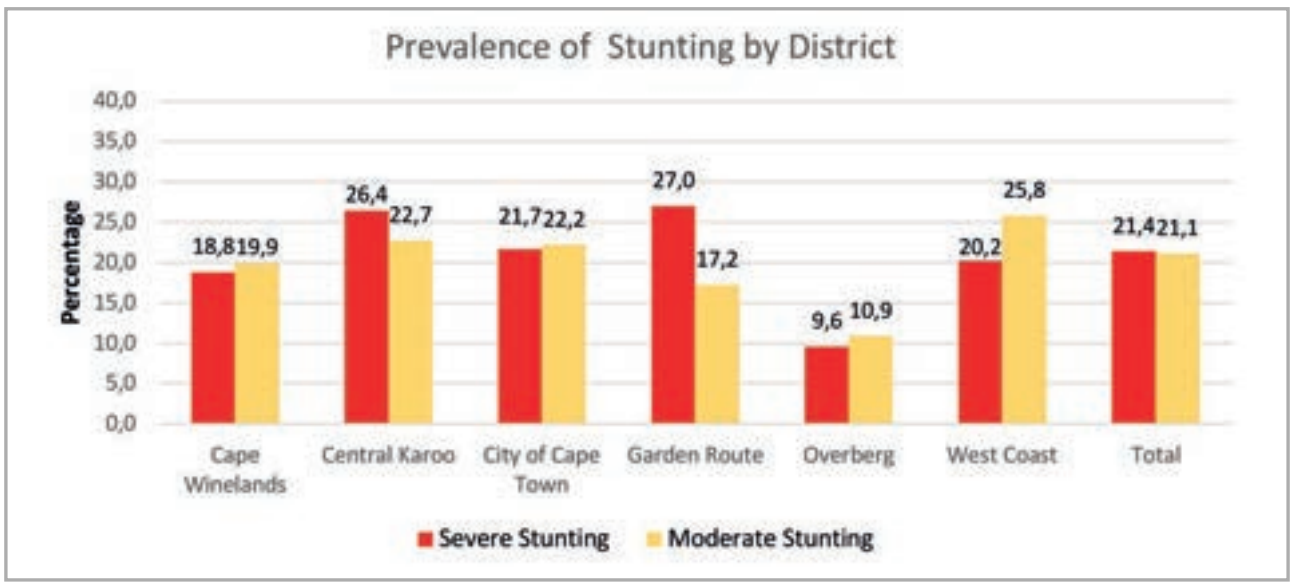


Figure 70: *The prevalence of Stunting in children under 5 years by district in Western Cape*

8.1.2.2 Wasting

The overall prevalence of wasting for children under the age of 5 years (n=665) was 4.2%, of which 3.4% was severe and 0.8% was moderate wasting (Table 55 and Figure 70). For overall wasting, across all age groups, the prevalence ranged from 1.0% in children aged 54-59 months to 8.3% in children aged 18-29 months (Table 55 and Figure 71. The differences between these age groups were, however, not significant. While the prevalence of overall wasting in males (6.8%) was almost five times higher than in females (1.3%), these differences were also not significant (Table 52 and Figure 71. Overall wasting was significantly higher in the Central Karoo (13.8%) compared to the 0.9% and 1.0% in the West Coast and Overberg, respectively (Table 55 and Figure 72).

The prevalence of moderate wasting was highest in children aged 30-41 months (2.8%), and lowest in the 54-59 age group (0.0%) and 18-29 months (0.1%). These differences were, however, not significant. While males had a higher prevalence of moderate wasting (1.2%) than females (0.3%) and Central Karoo had the highest prevalence of moderate wasting (4.5%) compared to other districts (range 0.4%-1.7%), there were no significant differences in moderate wasting between genders and across districts.

Comparisons for severe wasting across gender and age groups did not reveal any additional significant differences. Children on the West Coast had a significantly lower prevalence of severe wasting (0.1%) than children in the Cape Winelands (5.7%), Central Karoo (9.3%), and Garden Route (5.6%). Generally, more children were severely wasted than moderately wasted in all districts, except in the West Coast, where the prevalence of moderate wasting was slightly higher (0.8%) than that of severe wasting (0.1%).

Table 55: The prevalence of wasting in children under 5 years by age, sex, and district in Western Cape

	No wasting WHZ>=-2		All wasting WHZ<-2		Moderate wasting WHZ<-2 and >=-3		Severe wasting WHZ<-3		
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	n
Age (months)									
<6	94.0	[69.3-99.1]	6.0	[0.9-30.7]	0.4	[0.1-3.4]	5.6	[0.7-31.9]	59
6-17	98.6	[94.7-99.6]	1.4	[0.4-5.3]	0.9	[0.1-6.1]	0.6	[0.2-2.0]	156
18-29	91.7	[64.5-98.5]	8.3	[1.5-35.5]	0.1	[0.0-0.4]	8.2	[1.4-35.7]	168
30-41	95.6	[85.0-98.8]	4.4	[1.2-15.0]	2.8	[0.4-16.6]	1.5	[0.5-4.2]	128
42-53	98.4	[94.2-99.6]	1.6	[0.4-5.8]	0.3	[0.0-1.8]	1.3	[0.3-5.8]	116
54-59	99.0	[92.0-99.9]	1.0	[0.1-8.0]	0.0		1.0	[0.1-8.0]	38
Gender									
Female	98.7	[96.4-99.5]	1.3	[0.5-3.6]	0.3	[0.1-0.9]	1.0	[0.3-3.5]	329
Male	93.2	[80.1-97.9]	6.8	[2.1-19.9]	1.2	[0.3-4.7]	5.6	[1.4-20.3]	336
District									
Cape Winelands	92.6	[77.1-97.9]	7.4	[2.1-22.9]	1.7	[0.2-11.4]	5.7	[1.2-22.5]	97
Central Karoo	86.2	[76.1-92.5]	13.8	[7.5-23.9]	4.5	[2.2-8.7]	9.3	[3.9-20.8]	141
City of Cape Town	96.3	[82.0-99.3]	3.7	[0.7-18.0]	0.6	[0.1-4.4]	3.1	[0.4-19.7]	87
Garden Route	94.1	[89.5-96.7]	5.9	[3.3-10.5]	0.4	[0.0-2.7]	5.6	[3.0-10.3]	123
Overberg	99.0	[95.8-99.8]	1.0	[0.2-4.2]	0.4	[0.0-2.5]	0.6	[0.1-4.5]	102
West Coast	99.1	[94.9-99.9]	0.9	[0.1-5.1]	0.8	[0.1-5.5]	0.1	[0.0-0.6]	115
Total	**95.8**	**[88.9-98.5]**	**4.2**	**[1.5-11.1]**	**0.8**	**[0.2-2.5]**	**3.4**	**[1.0-10.9]**	**665**

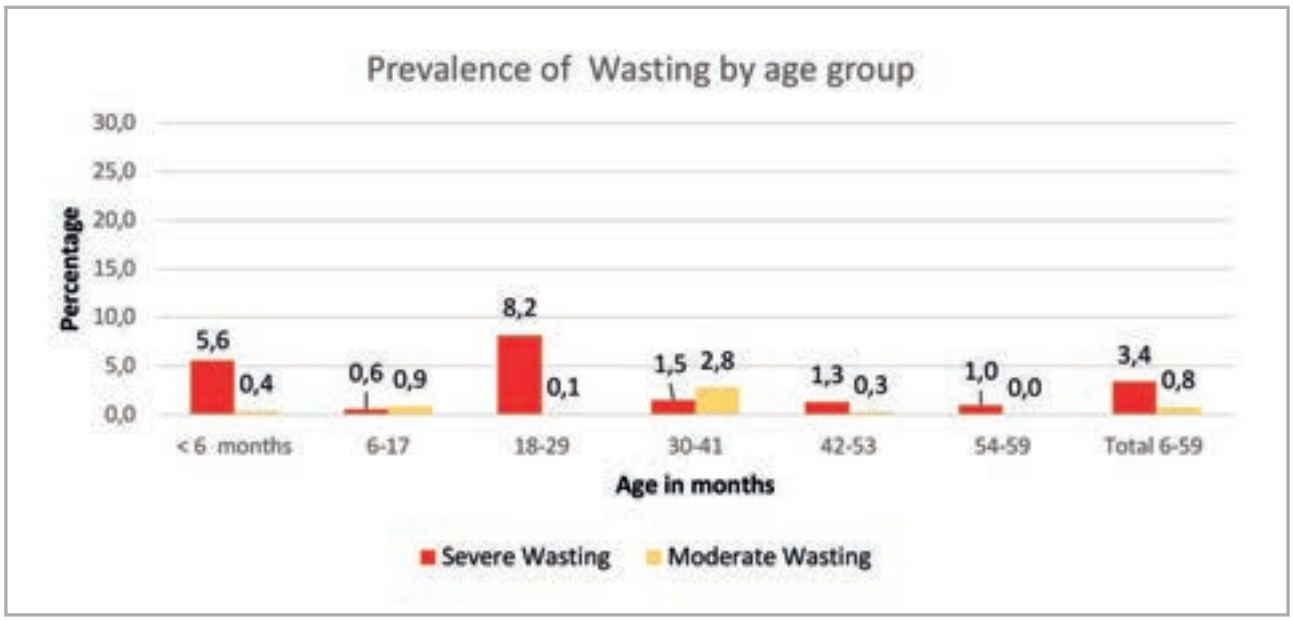


Figure 71: *The prevalence of Wasting in children under 5 years by age group in Western Cape*

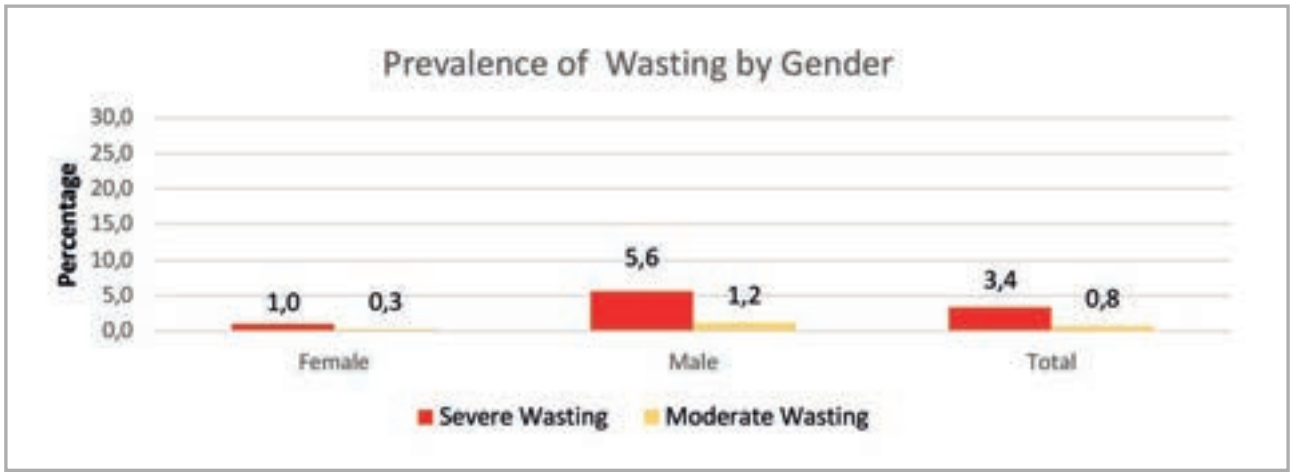


Figure 72: *The prevalence of Wasting in children under 5 years by gender in Western Cape*

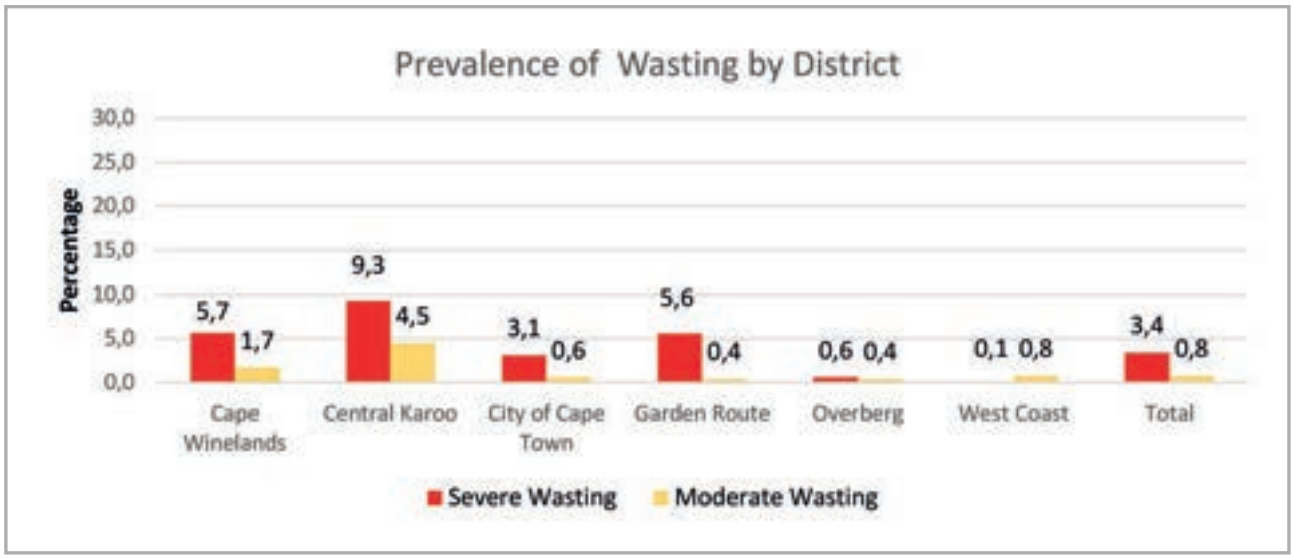


Figure 73: *The prevalence of Wasting in children under 5 years by district in Western Cape*

8.1.2.3 Underweight

The overall prevalence of underweight for children under the age of 5 years (n=707) was 6.6%, of which 3.6% was severe and 3.0% was moderate underweight (Table 56 and Figure 74). The prevalence of overall and moderate underweight was highest in children aged 54-59 months at 12.6% and 6.1%, respectively. Severe underweight was highest in the 18-29 months age group (7.5%). There were no significant differences in all categories of underweight across age groups.

Comparisons between gender showed that males (8.0%) had a slightly higher prevalence of being underweight compared to females (5.1%) (Table 56 and Figure 75). While these differences were not significant, it does appear that females had a higher prevalence of moderate underweight (3.1%) as compared to males (2.9%), while males had a higher prevalence of severe underweight (5.2%) as compared to females (2.0%). It appears as if a higher proportion of males were severely underweight, while the gap between moderate and severe underweight in females was not as large.

At a district level, children in the Overberg had a significantly lower overall prevalence of overall underweight (2.1%) compared to both Garden Route (13.0%) and Central Karoo (22.2%) (Table 53 and Figure 75). Central Karoo (11.5%) had a significantly higher prevalence of moderate underweight compared to children in the Overberg (1.5%). Similarly, Central Karoo (10.8%) had a significantly higher prevalence of severe underweight compared to children in both the Overberg (0.6%) and the West Coast (1.6%).

Table 56: The prevalence of underweight in children under 5 years by age, sex, and district in Western Cape

	Not underweight WAZ>=-2		All Underweight WAZ<-2		Moderate underweight WAZ<-2 and >=-3		Severe underweight WAZ<-3		
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	n
Age (months)									
<6	94.9	[80.5-98.8]	5.1	[1.2-19.5]	1.5	[0.2-10.9]	3.6	[0.6-19.4]	61
6-17	95.4	[85.7-98.7]	4.6	[1.3-14.3]	3.3	[0.7-15.0]	1.2	[0.4-3.7]	165
18-29	89.4	[70.5-96.7]	10.6	[3.3-29.5]	3.2	[1.2-8.0]	7.5	[1.5-30.3]	176
30-41	94.3	[84.3-98.1]	5.7	[1.9-15.7]	4.5	[1.2-15.2]	1.1	[0.4-3.2]	131
42-53	97.6	[93.7-99.1]	2.4	[0.9-6.3]	1.0	[0.3-3.2]	1.4	[0.4-5.3]	129
54-59	87.4	[62.3-96.7]	12.6	[3.3-37.7]	6.1	[0.8-35.3]	6.5	[1.5-24.1]	45
Gender									
Female	94.9	[89.5-97.6]	5.1	[2.4-10.5]	3.1	[1.2-7.6]	2.0	[0.5-7.0]	348
Male	92.0	[81.2-96.8]	8.0	[3.2-18.8]	2.9	[1.4-5.9]	5.2	[1.3-18.2]	359
District									
Cape Winelands	92.6	[78.6-97.7]	7.4	[2.3-21.4]	1.1	[0.2-6.1]	6.3	[2.0-17.8]	109
Central Karoo	77.8	[64.6-87.0]	22.2	[13.0-35.4]	11.5	[5.9-21.1]	10.8	[4.6-23.4]	143
City of Cape Town	95.1	[85.3-98.5]	4.9	[1.5-14.7]	2.4	[0.9-6.2]	2.6	[0.3-17.0]	98
Garden Route	87.0	[77.0-93.0]	13.0	[7.0-23.0]	4.7	[1.7-12.6]	8.4	[2.7-23.4]	132
Overberg	97.9	[94.8-99.1]	2.1	[0.9-5.2]	1.5	[0.5-5.1]	0.6	[0.1-3.3]	106
West Coast	87.7	[73.7-94.8]	12.3	[5.2-26.3]	10.7	[4.0-25.7]	1.6	[0.6-4.4]	119
Total	**93.4**	**[87.7-96.6]**	**6.6**	**[3.4-12.3]**	**3.0**	**[1.6-5.5]**	**3.6**	**[1.2-10.0]**	**707**

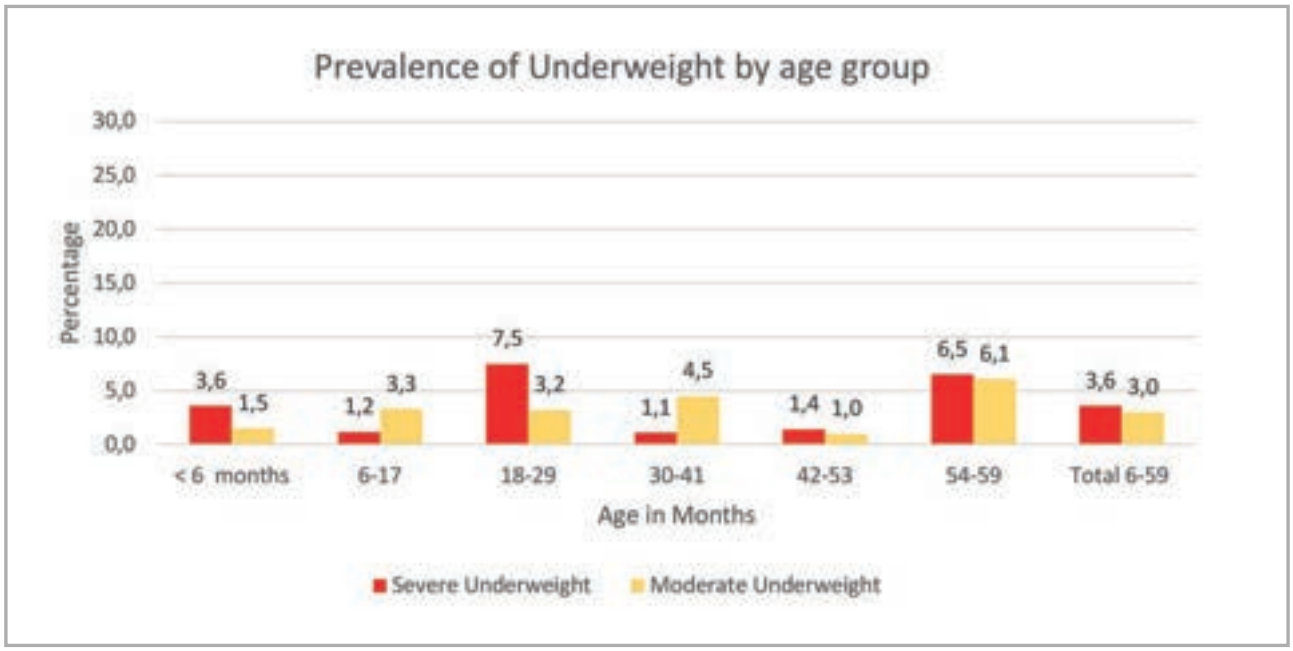


Figure 74: *The prevalence of Underweight in children under 5 years by age group in Western Cape*

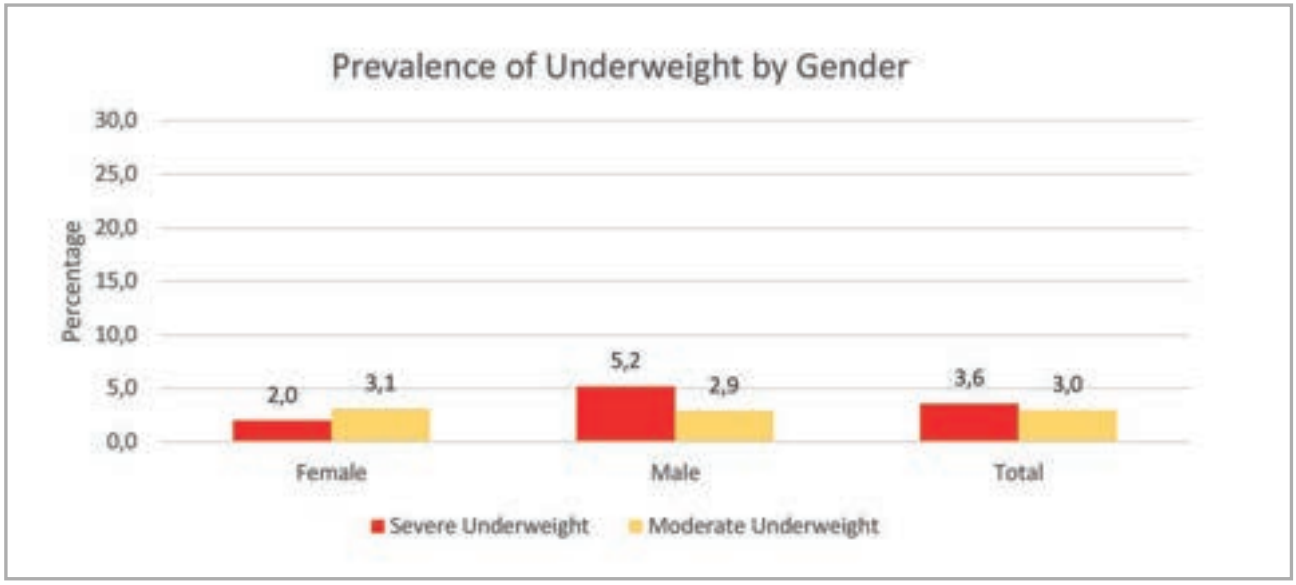


Figure 75: *The prevalence of Underweight in children under 5 years by gender in Western Cape*

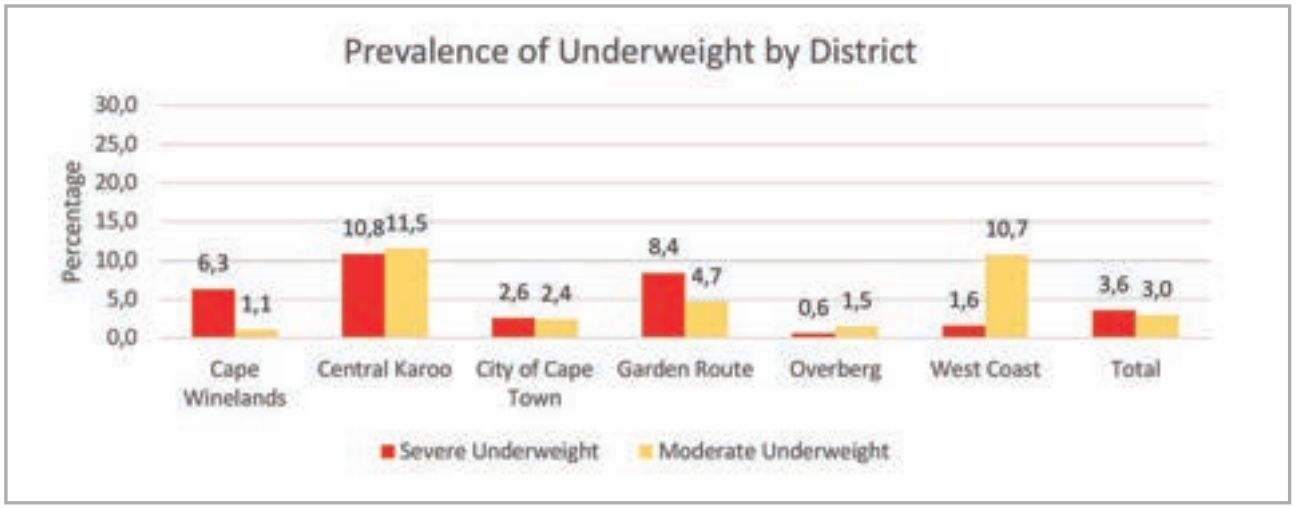


Figure 76: *The prevalence of Underweight in children under 5 years by district in Western Cape*

8.1.2.4 Overweight

The overall prevalence of overweight for children under the age of 5 years (n=665) was 25.9%, of which 12.4% was severe and 13.5% was moderate overweight (Table 57 and Figure 77). The prevalence of overall overweight appeared to decrease with age. There were significant differences in overall overweight between the two youngest age groups (0-17 months) and the 3 older age groups (30-59 months). A similar trend was seen in moderate overweight, where the youngest age group had a 10 times higher prevalence (43.2%) than those aged 30-53 months (3.4% and 4.2%). Those aged 54-59 months had a significantly lower prevalence (0.5%) of moderate overweight, compared to those aged 0-29 months (range 16.1% to 43.2%). For severe overweight, there was a significant difference observed, where children younger than 6-17 months (29.6%) and those aged <6 months (18.6%) had a significantly higher prevalence of severe overweight than those aged 30-41 months (2.8%), and those aged 6-17 months also being significantly higher than those aged 50-59 months (2.8%).

Males had a higher prevalence of overweight (30.4%) compared to females (20.9%) (Table 57 and Figure 78). While these differences were not significant, it does appear that males had a higher prevalence of moderate overweight (17.0% vs 9.6%), and both males and females had almost similar prevalence of severe overweight (13.5% vs 11.3%).

Garden Route reported the highest overall prevalence of overweight (31.2%), while Central Karoo reported the lowest overall prevalence (13.6%). There were, however, no significant differences in overall overweight and moderate overweight reported at a district level. For severe overweight, however, Central Karoo had the lowest prevalence (4.4%) compared to both the Garden Route (19.5%) and the West Coast (16.3%) (Table 57 and Figure 79).

Table 57: The prevalence of overweight in children under 5 years by age, sex, and district in Western Cape

	Not overweight WHZ<2		All overweight WHZ>=2		Moderate overweight WHZ>=2 and <3		Severe overweight WHZ>=3		
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	n
Age (months)									
<6	38.2	[17.9-63.7]	61.8	[36.3-82.1]	43.2	[19.8-70.0]	18.6	[8.5-36.0]	59
6-17	54.0	[36.9-70.2]	46.0	[29.8-63.1]	16.4	[7.2-33.2]	29.6	[14.8-50.3]	156
18-29	77.4	[59.4-88.9]	22.6	[11.1-40.6]	16.1	[6.1-36.0]	6.5	[3.2-12.5]	168
30-41	92.9	[81.9-97.5]	7.1	[2.5-18.1]	4.2	[0.9-17.1]	2.8	[1.1-7.3]	128
42-53	88.8	[77.7-94.7]	11.2	[5.3-22.3]	3.4	[1.1-9.7]	7.8	[3.0-18.7]	116
54-59	96.7	[86.5-99.3]	3.3	[0.7-13.5]	0.5	[0.1-3.9]	2.8	[0.6-13.2]	38
Gender									
Female	79.1	[66.2-88.0]	20.9	[12.0-33.8]	9.6	[5.0-17.7]	11.3	[5.4-22.0]	329
Male	69.6	[61.1-76.9]	30.4	[23.1-38.9]	17.0	[9.6-28.3]	13.5	[7.6-22.8]	336
District									
Cape Winelands	79.7	[65.3-89.2]	20.3	[10.8-34.7]	8.7	[3.2-21.6]	11.6	[4.6-26.2]	97
Central Karoo	86.4	[78.2-91.8]	13.6	[8.2-21.8]	9.2	[4.6-17.8]	4.4	[2.1-8.7]	141
City of Cape Town	73.1	[60.6-82.8]	26.9	[17.2-39.4]	15.3	[8.5-25.9]	11.6	[5.6-22.4]	87
Garden Route	68.8	[55.3-79.6]	31.2	[20.4-44.7]	11.7	[3.8-31.2]	19.5	[13.9-26.7]	123
Overberg	81.0	[71.4-88.0]	19.0	[12.0-28.6]	12.3	[6.5-22.0]	6.7	[3.1-13.8]	102
West Coast	74.6	[62.3-83.9]	25.4	[16.1-37.7]	9.1	[4.0-19.6]	16.3	[9.2-27.2]	115
Total	**74.1**	**[65.8-80.9]**	**25.9**	**[19.1-34.2]**	**13.5**	**[8.6-20.5]**	**12.4**	**[7.9-19.1]**	**665**

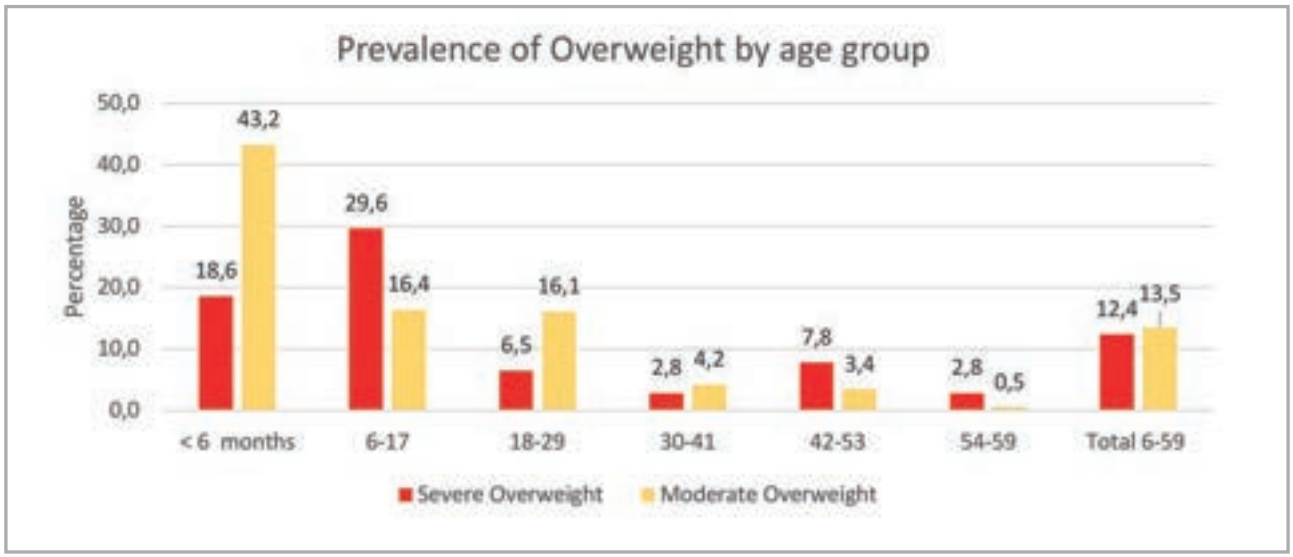


Figure 77: *The prevalence of Overweight in children under 5 years by age group in Western Cape*

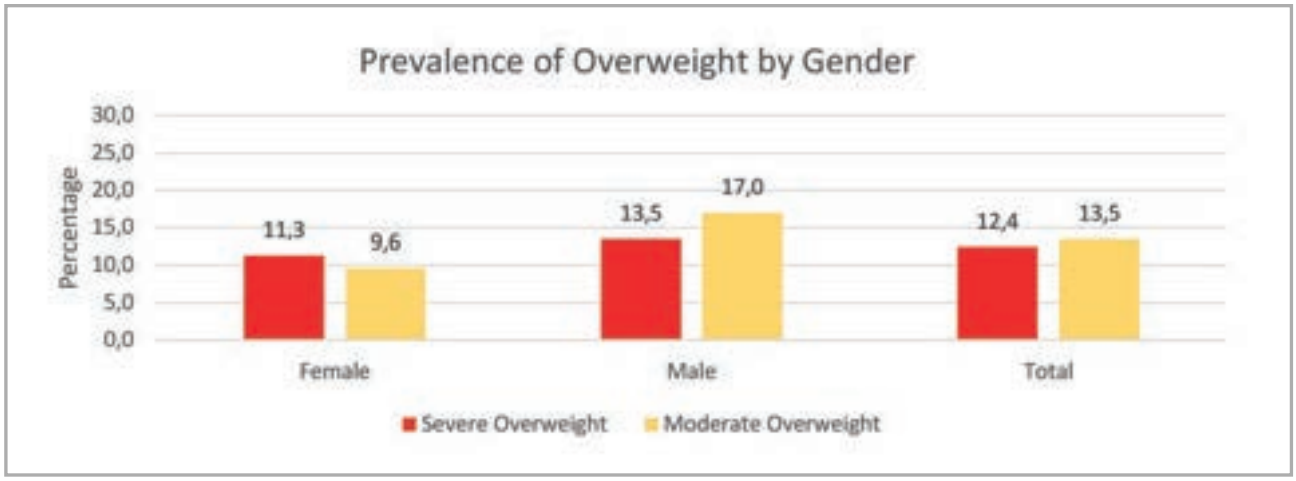


Figure 78: *The prevalence of Overweight in children under 5 years by gender in Western Cape*

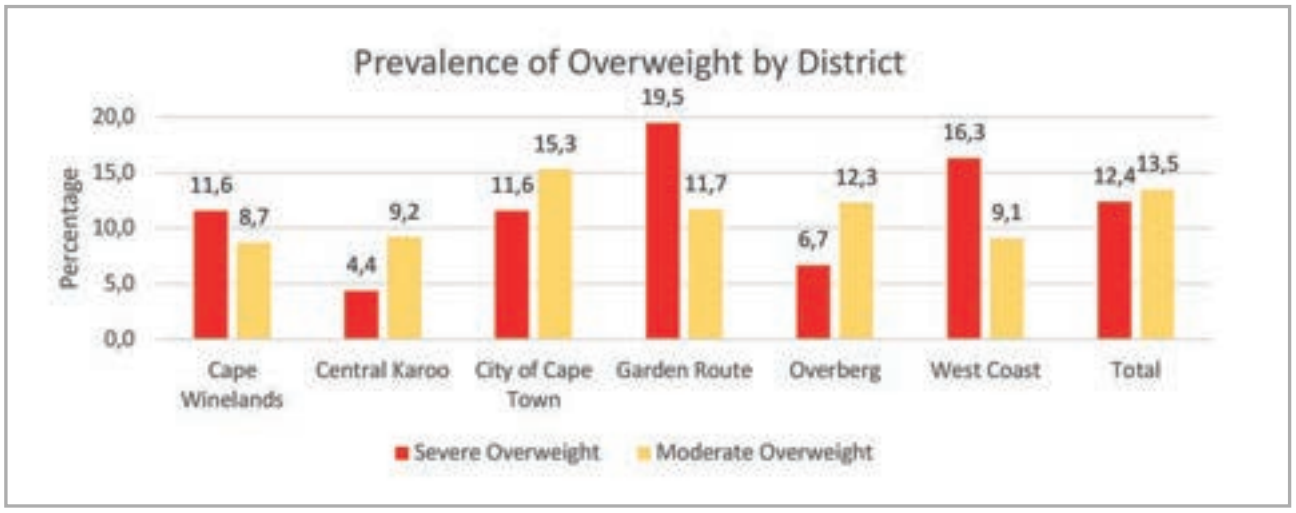


Figure 79: *The prevalence of Overweight in children under 5 years by district in Western Cape*

8.2 Adult Anthropometry

8.2.1 Body Mass Index (BMI)

The mean BMI for adults aged 18 years and older (n=3433) in Western Cape was 28.1 kg/m^2. There was no significant difference in gender, age groups and district levels. This was significantly different between males (25.4 kg/m^2; 95% CI 24.4-26.4) and females (29.6 kg/m^2; 95% CI 28.630.5). There were also significant differences in mean BMI between individuals of different age groups, with those aged 18-24 years having a significantly lower mean BMI (25.2 kg/m^2) than those aged 35 years and older (range 28.6-30.7 kg/m^2). Furthermore, those aged 25-34 years, also had a significantly lower mean BMI (27.3 kg/m^2) compared to those aged 45-54 years (30.7 kg/m^2). At a district level, Central Karoo had a lower mean BMI (25.1 kg/m^2) compared to the City of Cape Town, Overberg, and West Coast (range 28.2-28.4 kg/m^2).

Overall, 60.3% were classified as either overweight (25.3%) or obese (35.0%). Slightly more than a third (34.5%) were classified as normal weight and 5.2% were classified as underweight (Figure 80).

When disaggregating by gender (Females n=2 177, Males n=1 245), the proportion of both overweight (26.8% vs 23.0%) and obesity (42.4% vs 21.2%) was higher in females than in males, respectively (Figure 81). While this was not significantly different for overweight, it was significantly different for obesity, with twice as many females being obese compared to males. Overall, more than two thirds (69.2%) of females in Western Cape were either overweight or obese, compared to less than half (44.2%) of the males. Conversely, the prevalence of underweight and normal weight in females (3.5% and 27.3%) was significantly lower, about half of that in males (8.4% and 47.4%), respectively.

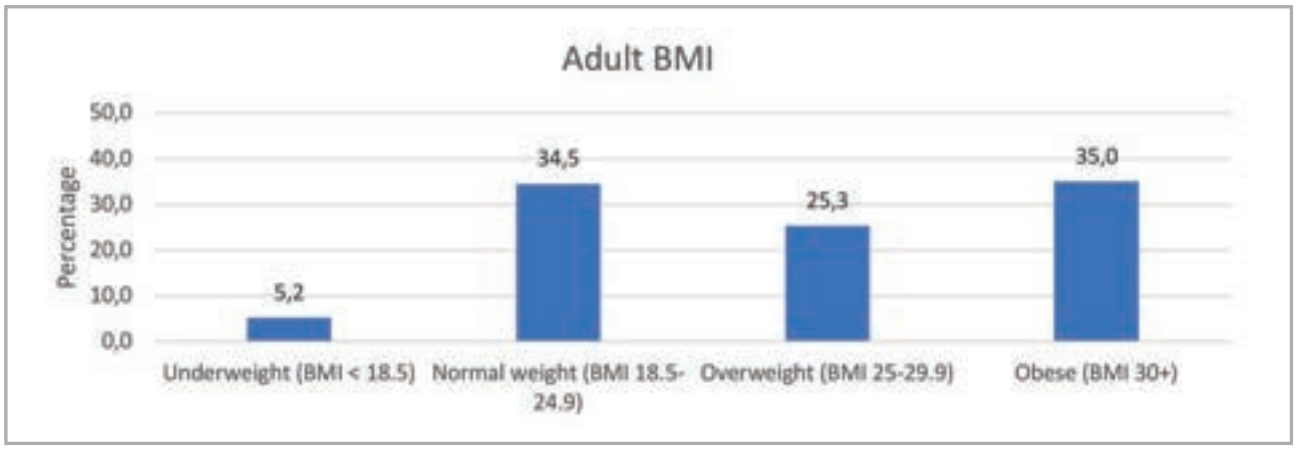


Figure 80: *Distribution of BMI in adults aged 18 years and older by districts in Western Cape*

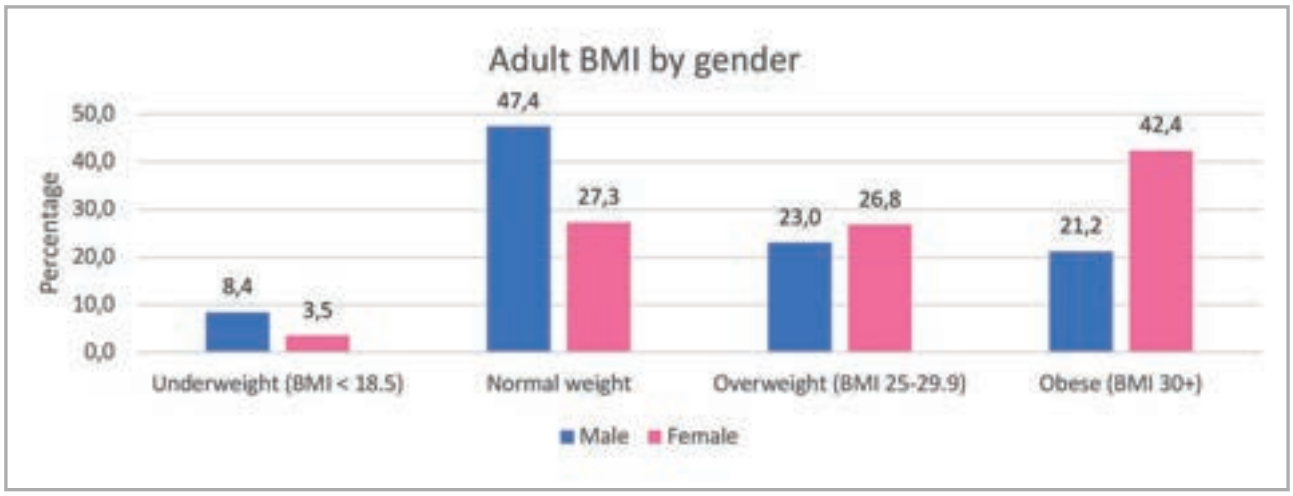
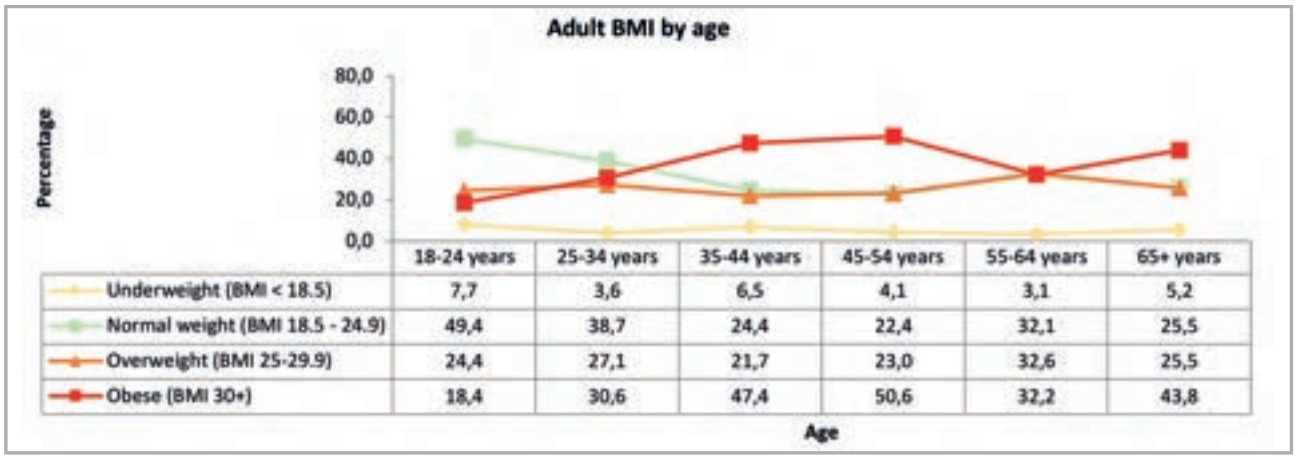


Figure 81: *Distribution of BMI in adults aged 18 years and older by gender in Western Cape*

When disaggregating the overall adult population by age, those aged 55-64 years have the highest prevalence of overweight (32.6%) and the 45–54 years age group had the highest prevalence of obesity (50.6%) (Figure 82). However, significant differences were only found between age groups for obesity, where those aged 18-24 years had a significantly lower prevalence of obesity (18.4%) compared to those aged 25 years and older (range 30.6%-50.6%). Furthermore, those aged 25-34 years, also had a significantly lower prevalence of obesity (30.6%) compared to those aged 45-54 years (50.6%). The prevalence of underweight ranged from 3.1%-7.7% across all age groups, with those aged 18-24 years having a higher prevalence of underweight (7.7%) compared to those aged 35 years and older (3.1%-6.5%): however, this was not significant.

Figure 83 compares BMI differences by age group between males and females. These figures clearly illustrate that underweight is lower in females than males across all age categories except the 55-64 years age group, where females have a higher underweight prevalence (3.7%) compared to males (2.2%). Conversely, for the most part, obesity (22.6%-57.0% vs 10.3%-35.6%) is higher in females than males across all age categories. For overweight, the exception is in the 35–44 and 55-64 years age groups, where males have a higher prevalence of overweight (29.9% and 39.6%) compared to females (17.8 and 27.5%) respectively.



	18-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65+ years
Underweight (BMI < 18.5)	7,7	3,6	6,5	4,1	3,1	5,2
Normal weight (BMI 18.5 - 24.9)	49,4	38,7	24,4	22,4	32,1	25,5
Overweight (BMI 25-29.9)	24,4	27,1	21,7	23,0	32,6	25,5
Obese (BMI 30+)	18,4	30,6	47,4	50,6	32,2	43,8

Figure 82: *Distribution of BMI in adults aged 18 years and older by age categories in Western Cape*

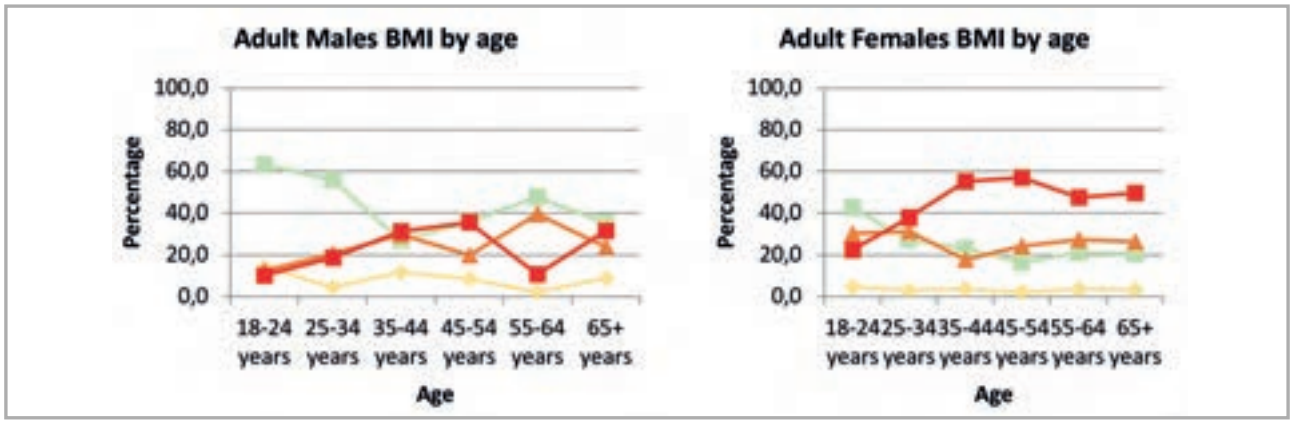


Figure 83: *Comparison of the distribution of BMI in adults aged 18 years and older by age and gender in Western Cape*

Figure 84 shows disaggregation of BMI at a district level. There were significant differences in some BMI categories at a district level. Central Karoo had a significantly lower prevalence (15.5%) of overweight than both City of Cape Town (26.9%) and Overberg (30.5%). Similarly, Central Karoo had a significantly lower prevalence (23.2%) of obesity than both City of Cape Town (36.6%) and the West Coast (37.4%). With regards to underweight, the City of Cape Town reported a significantly lower proportion of underweight (2.9%) compared to the Cape Winelands, Central Karoo, and Garden Route (range: 9.5%-15.4%). There were no significant differences for normal weight at a district level. Figure 84 compares district level data by gender. In both genders, these figures illustrate that in all districts, females have higher rates of overweight and obesity than

males have, except for the Garden Route where males have a higher overweight rate (22.3%) compared to females (17.9%). There were no significant differences at a district level within genders.

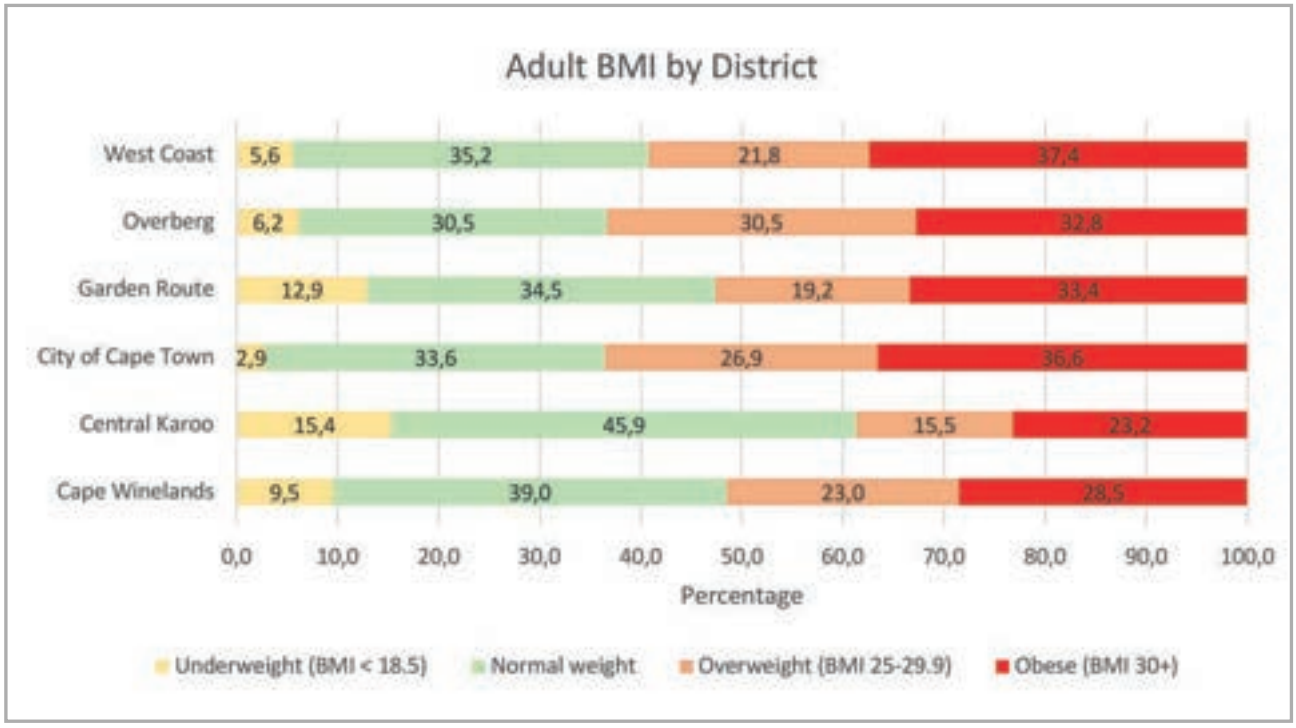


Figure 84: *Comparison of the distribution of BMI in adults aged 18 years and older by districts in Western Cape*

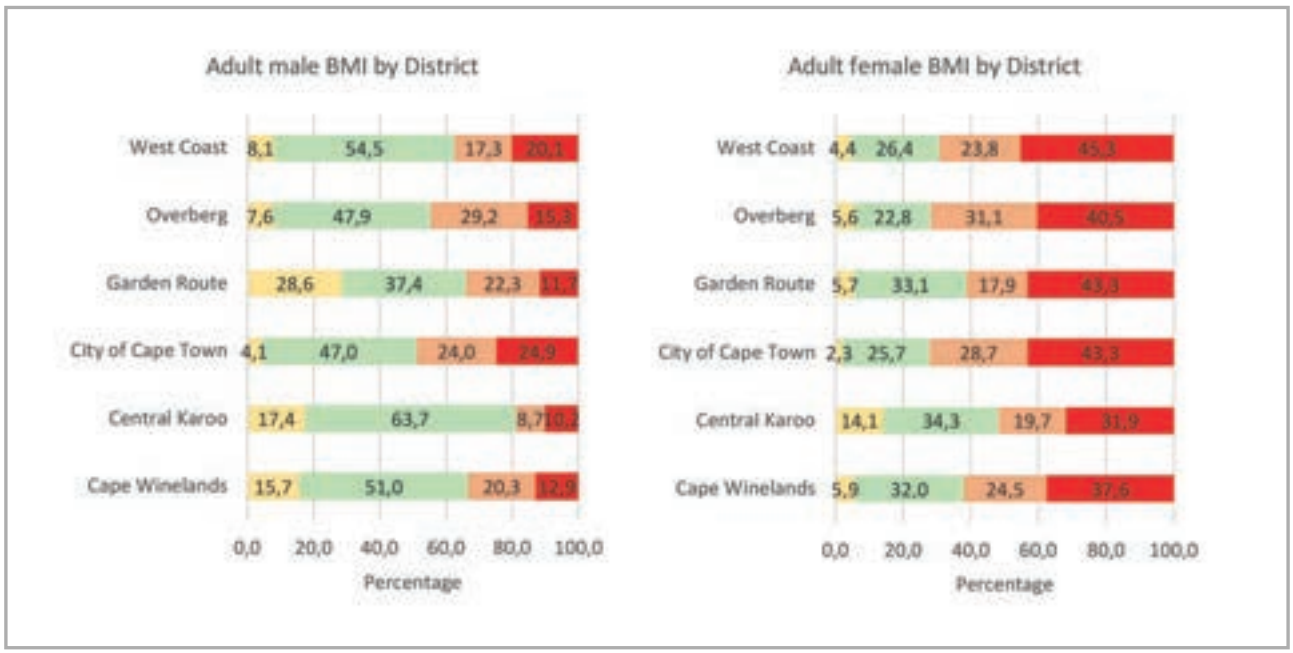


Figure 85: *Comparison of the distribution of BMI in adults aged 18 years and older by districts and gender in Western Cape*

8.2.2 Waist Hip ratio

A waist hip ratio (WHR) ≥ 1 in males and ≥ 0.85 in females is indicative of an increased risk of non-communicable diseases (NCDs) such as diabetes and hypertension, amongst other illnesses. The mean waist hip ratio for males (n=1244) and females (n=2219) was 0.90 (95% CI-0.88-0.93) and 0.88 (95% CI-0.87-0.89), respectively. However, Table 58 clearly shows that overall, a far greater proportion of females (62.1%) had a high WHR compared to only 15.5% of males.

Table 58: Waist hip ratio (WHR) of adults aged 18 years and older in Western Cape by gender, age and district in Western Cape

	Males					Females				
	Waist-hip ratio		Waist hip ratio>=1			Waist-hip ratio		Waist hip ratio >= 0.85		
	Mean	95% CI	%	95% CI	n	Mean	95% CI	%	95% CI	n
Age group										
18-24	0.84	[0.78-0.90]	3.6	[1.4-9.3]	150	0.84	[0.81-0.87]	42.4	[25.7-61.1]	266
25-34	0.89	[0.87-0.91]	13.9	[5.6-30.6]	227	0.86	[0.85-0.88]	57.4	[45.8-68.2]	407
35-44	0.93	[0.91-0.95]	19.3	[11.2-31.3]	239	0.89	[0.87-0.92]	70.8	[60.7-79.2]	444
45-54	0.96	[0.93-0.99]	23.3	[13.9-36.4]	212	0.9	[0.87-0.92]	71.3	[62.3-78.9]	414
55-64	0.95	[0.90-1.00]	21.9	[11.5-37.8]	230	0.94	[0.91-0.97]	80	[69.0-87.7]	397
>=65	0.98	[0.96-1.00]	33.9	[21.6-48.9]	186	0.93	[0.90-0.95]	75.1	[61.0-85.3]	291
District										
Cape Winelands	0.89	[0.87-0.92]	11.4	[8.0-16.0]	202	0.86	[0.82-0.90]	56.1	[43.2-68.3]	311
Central Karoo	0.9	[0.88-0.91]	7.7	[5.4-11.0]	256	0.86	[0.84-0.88]	55.8	[46.6-64.7]	447
City of Cape Town	0.91	[0.88-0.94]	17.2	[10.0-28.0]	213	0.88	[0.87-0.89]	62.4	[54.7-69.4]	324
Garden Route	0.89	[0.85-0.93]	10.5	[5.0-21.1]	201	0.9	[0.88-0.93]	66.8	[60.0-72.9]	395
Overberg	0.93	[0.91-0.94]	16.2	[10.1-24.8]	182	0.9	[0.88-0.91]	68.3	[61.3-74.5]	347
West Coast	0.89	[0.87-0.92]	13.1	[7.7-21.4]	190	0.88	[0.86-0.90]	62.1	[54.8-68.8]	395
Total	**0.9**	**[0.88-0.93]**	**15.5**	**[10.3-22.5]**	**1244**	**0.88**	**[0.87-0.89]**	**62.1**	**[56.7-67.1]**	**2219**

Table 58 and Figure 86 illustrate that WHR tends to increase with age in males and females, peaking in the age group 65 years and older in males and 55-64 years in females. There were only significant differences between age groups for both females and males. Amongst males, those aged 18-24 years had a significantly lower prevalence of an increased WHR (3.6%) compared to those aged 35 years and older (range 19.3%-33.9%). Similar results were observed in females, where those aged 18-24 years had a lower prevalence of an increased WHR (42.4%) compared to those aged 45-64 years (range 71.3%-80.0%); and those aged 25-34 also had a significantly lower prevalence (57.4%) compared to those aged 55-64 years (80.0%).

There were no significant differences in the mean WHR and the proportion of those who had a high WHR among both males and females across the various districts in the Western Cape. Overall, all districts indicated females having significantly higher WHR compared to males (Table 58 and Figure 87).

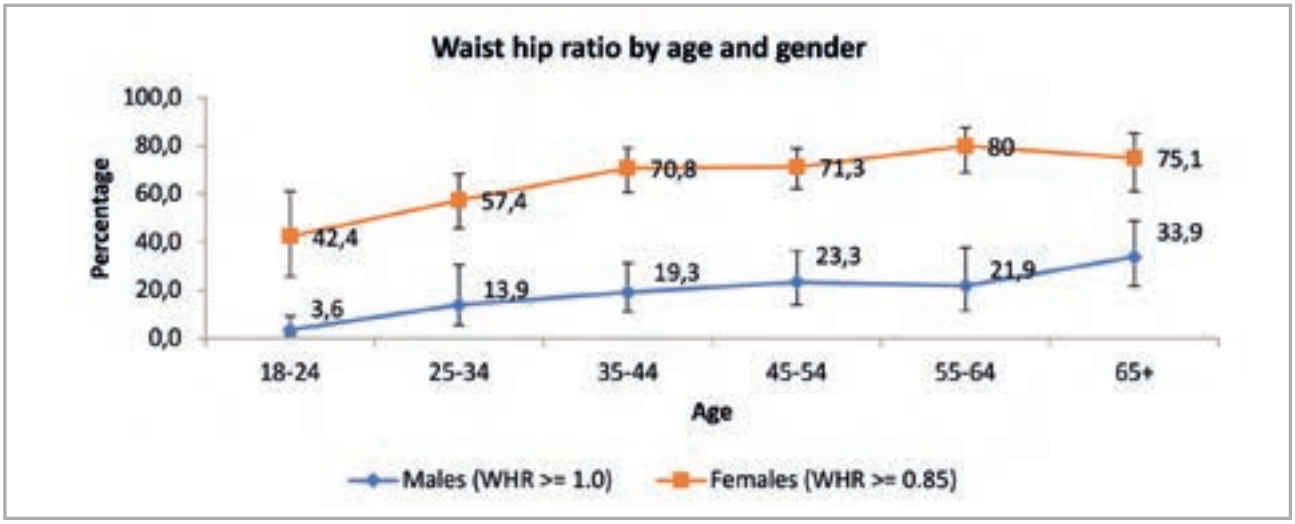


Figure 86 *Comparison of the distribution of WHR in adults aged 18 years and older by age and gender in Western Cape*

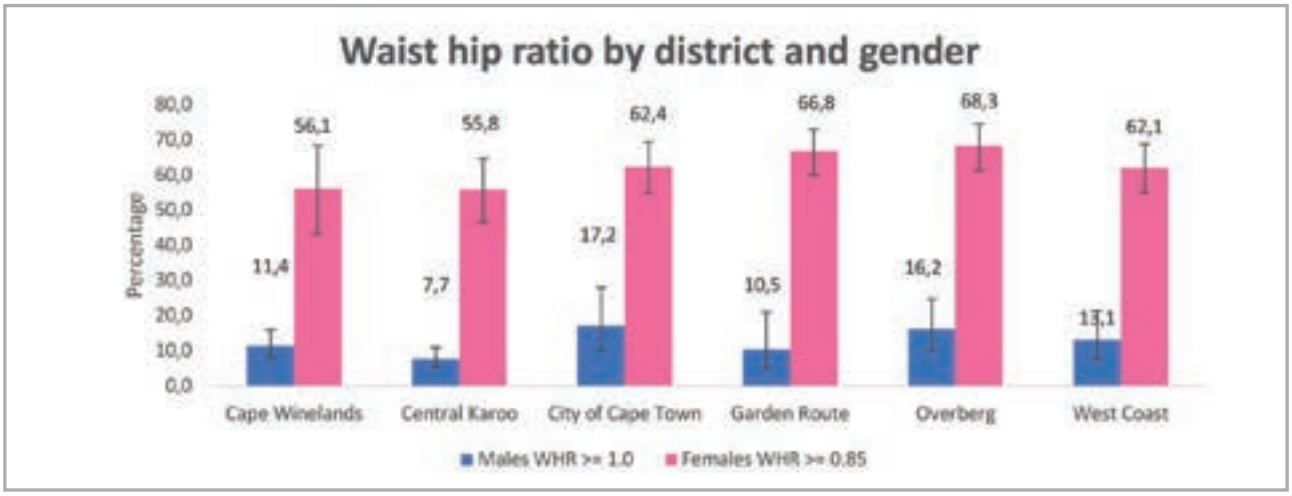


Figure 87: *Comparison of the distribution of WHR in adults aged 18 years and older by districts and gender in Western Cape*

8.3 Individual Dietary Diversity

A variety of foods in the diet is needed to ensure an adequate intake of essential nutrients. Dietary diversity can be used as a proxy measure of the nutritional quality of a population's diet, as well as an indicator of the access dimension of household food security (Kennedy, 2009). Populations consuming a diet of low dietary diversity are nutritionally vulnerable (Kennedy, 2009).

In this survey, adult participants and caregivers of children aged 6 months-5 years were asked to recall all foods and drinks they or their child had consumed the previous day. These food items were then allocated to specific food groups. A dietary diversity score (DDS) was calculated by summing the number of food groups from which food had been consumed; the nine food groups were: cereals, roots and tubers; vitamin A-rich vegetables and fruit; vegetables other than vitamin A-rich; fruit other than vitamin A-rich fruit; meat, poultry, and fish; eggs; legumes; dairy products; and foods made with fats or oils. Each food group was counted only once. A DDS below four is considered to be low and to be associated with dietary inadequacies (Steyn et al., 2006). The mean dietary diversity score (DDS) for children aged 0-5 years residing in the Western Cape (n=686) was 4.46, which is indicative of an adequate dietary diversity (Table 59). District comparisons showed that Cape Winelands had the highest mean DDS (4.88) compared to West Coast, which had the lowest (3.85), albeit these were not significant. Table 56 also shows that while individuals in five of the six districts have an adequate dietary diversity (DDS >4), those on the West Coast reported a low dietary diversity (DDS <4). There were, however, no significant differences across gender, age groups, and districts for those who reported a low DDS.

Table 59: Dietary diversity scores for children aged 0-5 years in Western Cape

	Dietary Diversity Score		Dietary Diversity Score category				
			0-3		4-9		
	Mean	95% CI	%	95% CI	%	95% CI	n
Age (months)							
0-24 months	3.45	[2.75-4.14]	61.3	[46.7-74.1]	38.7	[25.9-53.3]	269
25-60 months	5.03	[4.06-5.99]	29.5	[18.9-42.9]	70.5	[57.1-81.1]	417
Gender							
Male	4.91	[3.59-6.22]	37.6	[25.0-52.2]	62.4	[47.8-75.0]	348
Female	4.05	[3.47-4.64]	43.7	[31.0-57.3]	56.3	[42.7-69.0]	334
District							
Cape Winelands	4.88	[4.16-5.61]	30.1	[18.2-45.6]	69.9	[54.4-81.8]	113
Central Karoo	4.42	[3.79-5.06]	41.3	[27.5-56.7]	58.7	[43.3-72.5]	138
City of Cape Town	4.41	[3.21-5.61]	43.1	[29.0-58.4]	56.9	[41.6-71.0]	91
Garden Route	4.71	[3.96-5.46]	37.6	[23.9-53.6]	62.4	[46.4-76.1]	135
Overberg	4.27	[3.71-4.83]	38.2	[25.6-52.6]	61.8	[47.4-74.4]	96
West Coast	3.85	[3.42-4.27]	44.7	[28.6-62.1]	55.3	[37.9-71.4]	113
Total	**4.46**	**[3.64-5.28]**	**40.9**	**[30.8-51.8]**	**59.1**	**[48.2-69.2]**	**686**

Figure 88 illustrates the proportion of the children aged 0-5 years in the Western Cape and in the various districts who have low and acceptable DDS. Overall, 59.1% of children in the Western Cape reported an adequate DDS, while 40.9% have a low DDS. Cape Winelands reported the lowest proportion of children with low DDS (30.1%), while West Coast reported the highest proportion of people with a low DDS (44.7%).

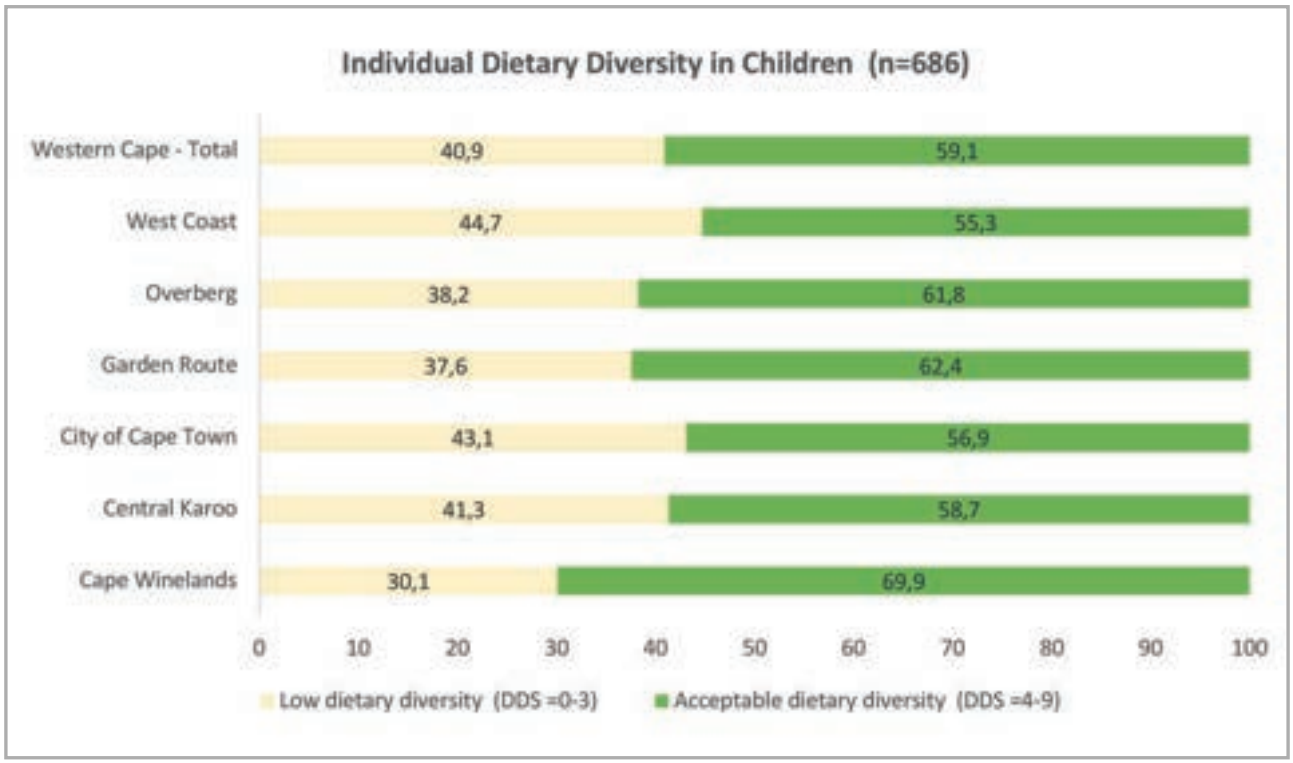


Figure 88: *Comparison of the distribution of DDS in children aged 0-5 years by districts in Western Cape*

The mean dietary diversity score (DDS) for adults residing in the Western Cape (n=3941) was 5.36, which is indicative of an adequate dietary diversity (Table 60). There were no significant differences for mean BMI across age, groups, and gender. District comparisons showed that the City of Cape Town had the highest mean DDS (5.51) compared to West Coast which had the lowest (4.56). Table 60, therefore, shows that individuals in all six districts have an adequate dietary diversity (DDS >4). However, the West Coast has a significantly lower mean DDS (4.56) compared to the Cape Winelands, City of Cape Town, and the Overberg (range 5.23-5.51). While there were no significant differences between gender in those who reported a low DDS, there were significant differences across age groups, where a significantly lower proportion of those aged 65 years and older (9.3%) had a low DDS compared to those aged 18-44 years (24.5%-26.0%).

Table 60: Mean Dietary diversity scores for adults in Western Cape

	Dietary Diversity Score	Dietary Diversity Score category					
		0-3		4-9			
	Mean	95% CI	%	95% CI	%	95% CI	n
Age group							
18-24	5.18	[4.65-5.71]	24.9	[16.4-35.8]	75.1	[64.2-83.6]	438
25-34	5.21	[4.73-5.69]	24.5	[18.3-32.0]	75.5	[68.0-81.7]	700
35-44	5.44	[5.05-5.83]	26.0	[20.0-33.2]	74.0	[66.8-80.0]	773
45-54	5.37	[5.03-5.71]	20.6	[14.7-28.1]	79.4	[71.9-85.3]	711
55-64	5.71	[5.35-6.06]	16.4	[11.4-23.0]	83.6	[77.0-88.6]	731
>=65	5.94	[5.52-6.37]	9.3	[5.6-15.1]	90.7	[84.9-94.4]	589
Gender							
Male	5.43	[5.03-5.83]	22.7	[16.0-31.2]	77.3	[68.8-84.0]	1414
Female	5.34	[5.01-5.67]	22.1	[17.4-27.6]	77.9	[72.4-82.6]	2517
District							
Cape Winelands	5.34	[4.96-5.72]	20.6	[14.9-27.7]	79.4	[72.3-85.1]	595
Central Karoo	5.06	[4.58-5.54]	22.2	[14.9-31.9]	77.8	[68.1-85.1]	758
City of Cape Town	5.51	[5.12-5.90]	22.0	[16.2-29.1]	78.0	[70.9-83.8]	631
Garden Route	4.92	[4.53-5.30]	24.5	[17.5-33.3]	75.5	[66.7-82.5]	699
Overberg	5.23	[5.00-5.47]	19.6	[15.0-25.3]	80.4	[74.7-85.0]	607
West Coast	4.56	[4.20-4.93]	32.6	[23.4-43.4]	67.4	[56.6-76.6]	652
Total	**5.36**	**[5.09-5.63]**	**22.6**	**[18.4-27.4]**	**77.4**	**[72.6-81.6]**	**3941**

Figure 89 illustrates the proportion of the adult population in the Western Cape and in the various districts who have low and acceptable DDS. Overall, 77.4% of people in the Western Cape reported an adequate DDS, while 22.6% have a low DDS. Overberg reported the lowest proportion of people with low DDS (19.6%), while West Coast reported the highest proportion of people with a low DDS (32.6%). These differences though were not significant.

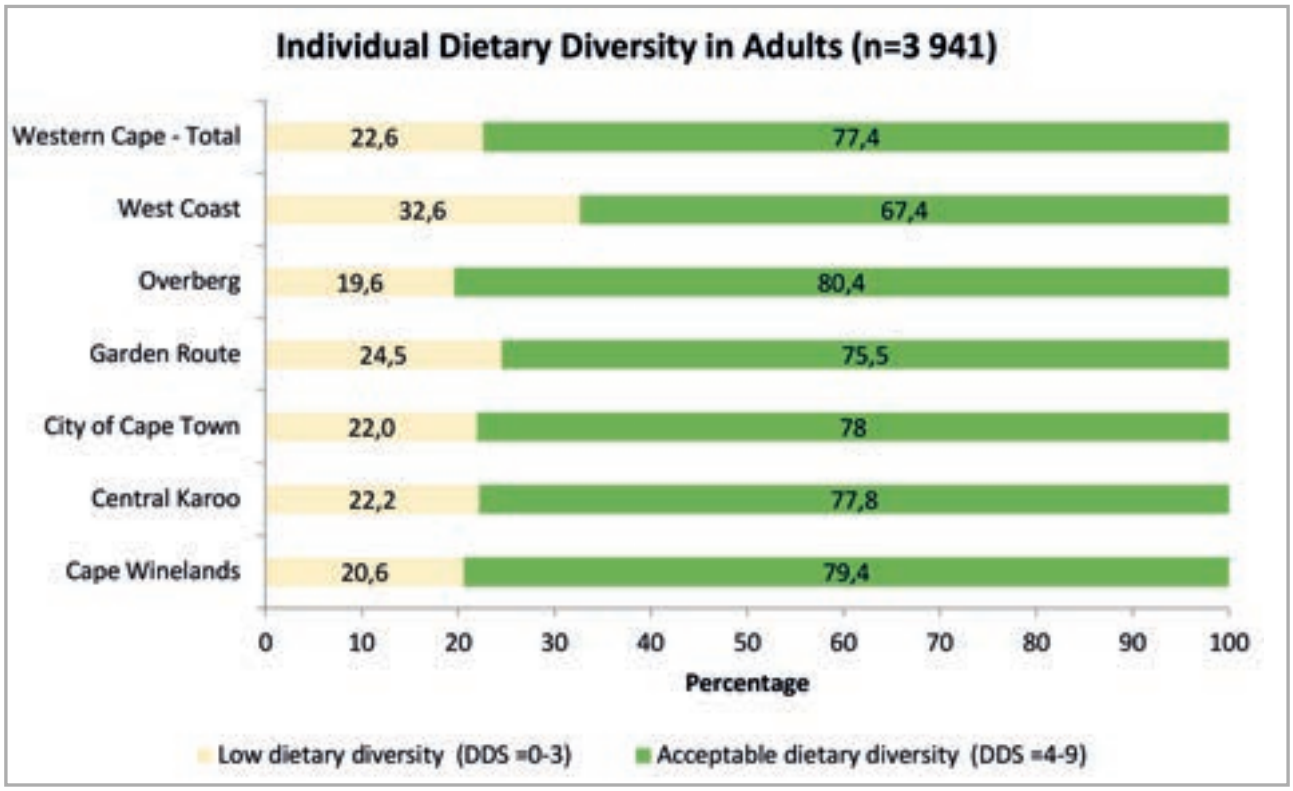


Figure 89: *Comparison of the distribution of DDS in children aged 0-5 years by districts in Western Cape*

8.4 Relationship of Household Food Insecurity and Malnutrition

Table 61 presents the associations between nutrition indicators and food security status, based on the Household Food Insecurity Access Scale (HFIAS). In Western Cape, there were no significant relationships between food security and any of the four nutrition indicators (stunting, wasting, underweight, and overweight) for children aged 0-5 years. Even though, it was not statistically significant, the table does show that the prevalence of household food insecurity was higher among households that had at least one child under 5 years who was underweight (82.4%) than among households that did not have a child under 5 years who was stunted (72.3%).

There was no significant relationship between household food security and having at least one overweight/obese adult in the household. However, the prevalence of household food insecurity was significantly higher in households that had at least one underweight adult in the household (80.2%) compared to households that did not have an underweight adult (57.1%) ($p<0.001$). There was also a significant relationship between food security and waist hip ratio as well as individual dietary diversity. High waist hip-ratio (WHR) is a risk factor for non-communicable diseases (NCDs). Persons with an elevated waist-hip ratio, that is WHR of >1 in males or >0.85 in females, are considered as being at increased risk of NCDs. The prevalence of household food insecurity was significantly higher (62.7%) in households that had at least one person who had an elevated waist-hip ratio compared to households that did not have anyone with an increased WHR. (55.3%) ($p<0.05$). Similarly, the prevalence of food insecurity was significantly higher (74.6%) in households that had at least one person who had a low dietary diversity (DDS <4) compared to households in which everyone had acceptable dietary diversity (48.4%) ($p<0.01$).

Table 61: Relationship between household food insecurity and malnutrition indicators in the Western Cape

Nutrition and health indicators	Categories	Food security status (%)		Chi-square tests
		Food secure	Food insecure	
0-5 years				
Stunting	Yes	23.5	76.5	
	No	26.5	73.5	
Wasting	Yes	38.8	61.2	
	No	25.1	74.9	
Underweight	Yes	17.6	82.4	
	No	27.7	72.3	
Overweight	Yes	30.3	69.7	
	No	24.1	75.9	
Adults				
Underweight	Yes	19.8	80.2	***
	No	42.9	57.1	
Obesity / Overweight	Yes	42.6	57.4	
	No	38.9	61.1	
Increase risk of NCDs (Waist / hip ratio)	Yes	37.3	62.7	**
	No	44.7	55.3	
Individual Dietary Diversity	Low	25.4	74.6	***
	Acceptable	51.6	48.4	

* p<0.10, ** p<0.05, ***p < 0.01

Table 58 demonstrates South Africa's double burden of nutrition . While on one hand, South Africa experiences higher levels of undernutrition, it also experiences higher levels of overweight and obesity (FAO et al., 2021).

8.5 Discussion

Infant feeding practices

Exclusive breastfeeding has been adopted as one of the key, and crucially important, components of the Infant and Young Child Feeding Policy which was developed in 2007 (DoH, 2011). Promotion, protection, and support of breastfeeding are a key focus area of infant and young child feeding of the Integrated Nutrition Programme of the Department of Health. The result of the current study indicates that 86.7% of children under 2 years were breastfed at some point in their lives, which is slightly higher than the national results reported in the SADHS in 2016 (84%). Furthermore, the results of the current study indicated that nearly 93.0% of children aged 0-2 years in the Western Cape were introduced to breastfeeding immediately after birth, with a total of 96.6% being breastfed within an hour of birth. These results are far higher than both the national results reported by the SAHANES in 2012 (83.0%) and the national results reported by the SADHS in 2016 (67%).

Exclusive breastfeeding in Western Cape was reported to be 22.8%. This should be interpreted with caution due to the small sample size. However, 22.8% is far higher than the national reports in the 2003 SADHS (8.3%) and SANHANES 2012 (7.5%) and more in line with that reported by Shisana et al. in 2008 (25.7%) but lower than that reported in the 2016 SADHS (30%).

In 1998, 2003, and 2016, the SADHS reported an average duration of breastfeeding of 15.6 months, 16.6 months, and 12.2 months, respectively. SANHANES however showed a much lower average duration of breastfeeding (5.9 months). The average duration of breastfeeding for those who were not currently breastfed during this study was 6.5 months, which is more in line with what the SANHANES reported compared to the SADHS.

Overall, the first drink other than breastmilk was mainly introduced at 0-1months. This occurred in just under a third (29.5%) of children. It can be assumed that this is most likely the introduction of infant formula, for mothers who may be unable to breastfeed. At 3 months, other drinks were introduced in a further 20.3% of children. Less than a third of children (30.7%) were first introduced to other drinks at the age of 6 months/ older. With regard to the type of drink that was first introduced, nearly half (47.2%) indicated infant formula, while 24.5% indicated plain water.

After 6 months, infants should be introduced to solid foods as breastmilk is no longer sufficient to meet the nutritional requirements. However, the results of this study indicate that complementary feeding is initiated slightly earlier than the anticipated 6 months, at 5.2 months. This is about a month later than the results of the SANHANES 2012 (4.5 months). The most common food introduced is commercial cereal/ porridge (58.1%) and homemade cereal/porridge (26.0%), with only 5.9% introduced to pureed/mashed vegetables/fruit.

Anthropometry (0-5 years)

In 2012, the SANHANES reported a national stunting prevalence of 28.6% in children 0-5 years, and a provincial prevalence of 26.3% in the Western Cape. Four years later in 2016, the SADHS reported a slightly lower stunting prevalence at the national level (27.0%) and a similar prevalence at the provincial (23%) level. The results of the current study appear to indicate that the stunting prevalence in Western Cape is higher than both the SANHANES and SADHS provincial prevalence, with a current prevalence of 42.4% in children of the same age group. These results indicate that stunting has nearly doubled over the last 10 years and as such the proportion of children experiencing chronic undernutrition in 2022 has increased. These results are far higher than anticipated when compared to other studies conducted in the province. However, the data has been interrogated and confirmed as correct. The authors recommend further exploration of the indicator results to ascertain reasons for the possible deviation from the usual trend. The SADHS reported that stunting was more prevalent nationally in the age group 18-23 months. The results of this provincial analysis corroborate this, but also identifies a similar prevalence in children in the 6-17 months age group in the Western Cape. Furthermore, the SANHANES and SADHS has reported that stunting is more prevalent in male children than female children at a national level. While this study shows the opposite trend at a provincial level, where females have a slightly higher prevalence of stunting than males, however, the gap between males and females is quite small, where 43.7% of females are stunted compared to 41.2% of males. At a district level, the current study reported that stunting is more prevalent in the Central Karoo, West Coast, Garden Route, and City of Cape Town districts, where nearly half the children have been affected.

The national prevalence of wasting was reported to be 3.7% in 2012 (SANHANES), with a slightly lower provincial prevalence in the Western Cape of 2.1%. In 2016, similar national results were presented in the SADHS (3.0%); however, a provincial prevalence was not reported at the time. The current study has reported a similar but slightly higher provincial prevalence of wasting in Western Cape of 4.2%, thereby indicating that the proportion of children experiencing acute undernutrition in 2021 has doubled over the past 10 years. It also appears that those younger than 6 months and those aged 18-29 months, as well as males, experience a higher prevalence of wasting than their counterparts. At a district level, the current study reported that wasting, is more prevalent in the Central Karoo (13.8%) and Cape Winelands (7.4%) districts, compared to the other districts (range 0.9% to 5.9%).

The prevalence of underweight in the Western Cape in the current study (6.6%) is slightly higher than the provincial prevalence of underweight reported by the SANHANES in 2012 (4.5%). A similar prevalence was also reported at the national level in 2012 (6.8%) and 2016 (6%).

In 2016, the SADHS reported a national prevalence of overweight of 13% in children 0-5 years. SANHANES reported a higher prevalence in females than in males across all age categories at a provincial level. The current study found a higher prevalence (25.9%) of children who were overweight and that females (30.4%) had a higher prevalence of overweight than males (20.9%), though the differences between genders were not significant.

The above trends across time seem to indicate that over the last 10 years, both acute, and chronic undernutrition in children in the Western Cape has doubled. In addition, overweight has also increased in this age group. At a district level, it appears as if the Central Karoo has the highest prevalence of acute undernutrition (wasting and underweight).The Overberg appears to have the lowest prevalence of chronic undernutrition, while the rest of the districts all reported a similar prevalence.

Anthropometry (18 years and older)

At a national level, the mean BMI in females were reported to be 28.9 kg/m^2 in 2012 and 29.2 kg/m^2 in 2016. For males, there was no change in mean BMI between 2012 and 2016 as both the SANHANES and the SADHS reported a mean BMI of 23.6 kg/m^2. A similar provincial mean was reported for BMI in Western Cape for females (28.5 kg/m^2) and a slightly higher prevalence for males (25.0 kg/m^2) in 2012. Similar results were reported in 2016 (females 30.6 kg/m^2 and males 24.8 kg/m^2). The current study reported similar results for females (29.6 kg/m^2) and slightly higher mean BMI for males (25.4 kg/m^2) in Western Cape.

Based on BMI cut-off points, SANHANES reported a national prevalence of overweight and obesity of 64.0% in females and 30.7% in males 10 years ago. The SADHS reported similar results in 2016, 67.5% in females and 31.3% in males. The provincial prevalence of overweight and obesity in the Western Cape was similar to the national estimates for females (62.4%) and higher for males (43.0%) in 2012. In 2016, the SADHS reported an increase in the provincial prevalence in Western Cape for both females (73.3%) and an increased prevalence in males (43.7%). Ten years later, the results of this study report an increased provincial prevalence of overweight and obesity in females (69.2%), compared to SANHANES, but a decreased prevalence compared to SADHS. While the prevalence for males appears to be similar, it seems to slowly be increasing over the last 10 years (44.2%).

The current study also reported a higher proportion of females (62.1%) and a higher proportion of males (15.5%) with regards to a waist hip ratio larger than 0.85 and 1.0, respectively, compared to previous studies. For females, SANHANES reported 47.1% and 51.8% at a national and provincial level respectively. For males SANHANES reported 6.8% and 8.2% at a national and provincial level, respectively.

Dietary Diversity

A diet that is sufficiently diverse reflects nutrient adequacy. This statement is based on the fact that no single food contains all required nutrients for optimal health. Consequently, the more food groups included in a daily diet, the greater the likelihood of meeting nutrient requirements (Kennedy, 2009). Monotonous diets, based mainly on starches such as maize, rice and bread, have been closely associated with food insecurity. Dietary diversity is an outcome measure of food security at the individual or household level (Kennedy, 2009). Apart from reflecting on food security, a low DDS has also been associated with low weight and stunted growth (Rah et al., 2010), as well as other health issues. In the present survey, the mean dietary diversity score of the adult population was 5.36, with 22.6% of the population having a score less than 4. The mean DDS was in the current survey is higher than that of the NCFS in 2009 (4.02) and that reported in SANHANES nationally in 2012 (4.2). However, the proportion of those with a low DDS was lower than that reported in both the SANHANES in 2012 (28.2%) and the NFCS in 2009 (38%). The current study further found that children have a lower mean DDS of 4.46, with a larger proportion (40.9%) of children having a score of less than 4.

9 Wellbeing and Associated Shocks

9.1 Household health status, chronic illnesses, and diseases

The study sought to establish the disease burden and health experiences of household heads and members in the preceding year to the study and as expected, the population experienced a wide range of diseases (Table 62). Most household heads reported having experienced coughs/colds/chest infections at 20.3%, followed by hypertension (12.7%), diabetes (9.3%), other fever/malaria (8.5%), headache (7.7%), disease (5.2%), abdominal pains (4.2%) and HIV/AIDS (1.2%) in that order. Cough/cold/chest infections accounted for 18% of household members. These are commonly reported ailments some of which are simply symptoms rather than confirmed diseases. Nonetheless, the level of access to food and especially nutritious food predisposes individuals to a multitude of diseases, and to the ability to prevent and indeed recover when such diseases are contracted. Specific diseases such as diabetes, for example, require specific diets as part of managing them and it is there important that such households have access to diverse ,food stuffs including medically prescribed diets.

Table 62: Disease experienced by household heads and members a year prior to the survey

	Household heads		Household members	
Disease	**n**	**%**	**n**	**%**
Cough/cold/chest infection	649	20.3	212	18.0
Hypertension	850	12.7	1,453	9.1
Diabetes	544	9.3	872	6.3
Fever/malaria	236	8.5	826	7.5
Headache	213	7.7	578	5.1
Other disease	295	5.2	606	4.7
Abdominal pains	137	4.2	247	2.0
Asthma	164	4.0	353	2.7
Toothache or mouth infection	84	2.4	201	1.6
Eye infection	91	1.7	168	1.1
Diarrhoea	27	1.5	94	1.1
HIV/AIDS	49	1.2	103	0.6
Paralysis	101	1.1	207	1.1
Vomiting	24	1.1	90	0.9
TB	51	1.0	111	0.6
Skin rash	33	0.7	102	1.0
Bronchitis/pneumonia/chest pain	24	0.4	46	0.4

Unweighted and weighted % reported and descended sorting was done based on household heads %

The study found a low prevalence of chronic illness (a disease that lasts for more than 3 months) at both the household head (6.8%) and household member (4.8%) levels (Figure 90). The significance of this finding is that food and nutrition security is vital to managing most chronic diseases (such as TB and diabetes) as the nutritious status of foods that people eat assists in controlling recovery processes. The prevalence of chronic diseases adds to the need for ensuring that most households are food secure.

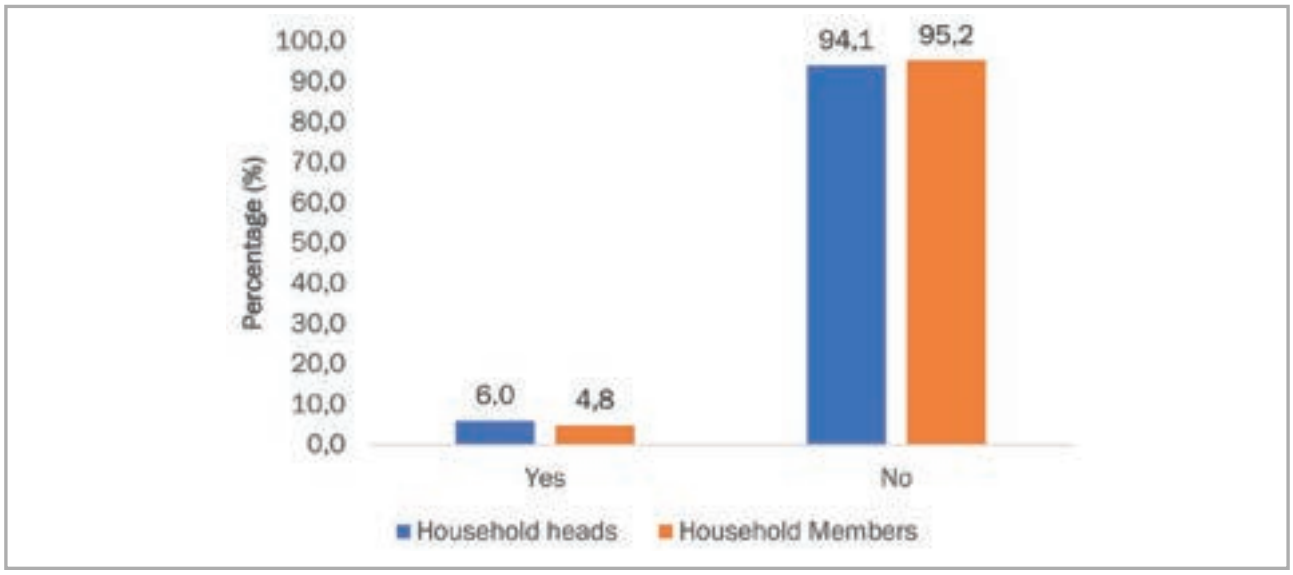


Figure 90: *Household heads and members reported to having been continuously ill, for at least 3 months in the last 12 months prior to the survey*

There was generally little difference in the reported or perceived health status of household heads by sex and district, but noticeable differences are observed particularly by age (Table 63). Those aged 55 years and above reported significant levels of poor or fair health compared to those younger. West Coast had a slightly higher percentage (8.6%) of household heads who perceived their general health status as poor or fair.

Table 63: Household heads' perceived health status by sex, age, and district

	Poor/Fair		Good		Very good/Excellent		Total
	%	95% CI	%	95% CI	%	95% CI	n
Sex							
Male	3.6	[2.6-4.9]	53.3	[47.9-58.6]	43.1	[37.6-48.8]	2,168
Female	7.9	[5.1-12.1]	53.6	[44.3-62.6]	38.5	[29.5-48.2]	1,458
Total	**5.8**	**[4.2-7.8]**	**53.4**	**[47.7-59.1]**	**40.8**	**[35.1-46.8]**	**3,626**
Age group							
18-24	6.9	[1.3-28.5]	40.9	[25.7-58.1]	52.2	[34.8-69.1]	130
25-34	1.1	[0.4-3.0]	47.9	[40.2-55.8]	51.0	[43.1-58.8]	464
35-44	3.0	[1.5-6.2]	54.0	[44.1-63.7]	42.9	[33.2-53.2]	687
45-54	6.6	[4.2-10.2]	60.0	[54.0-65.7]	33.4	[27.8-39.5]	792
55-64	11.9	[8.6-16.2]	66.4	[59.5-72.6]	21.7	[16.2-28.5]	795
65+	17.5	[12.5-23.9]	64.1	[56.9-70.8]	18.4	[12.1-26.9]	758
Total	**5.8**	**[4.2-7.8]**	**53.4**	**[47.7-59.1]**	**40.8**	**[35.1-46.8]**	**3,626**
District							
Cape Winelands	6.7	[4.2-10.5]	45.4	[34.2-57.0]	47.9	[35.0-61.2]	527
Central Karoo	5.0	[2.8-8.5]	48.6	[42.0-55.3]	46.4	[40.0-52.9]	673
City of Cape Town	5.3	[3.3-8.5]	55.7	[47.4-63.7]	39.0	[31.1-47.5]	553
Garden Route	5.6	[3.2-9.5]	49.3	[41.4-57.2]	45.1	[37.0-53.5]	676
Overberg	6.0	[3.5-10.0]	53.3	[46.6-59.9]	40.8	[32.8-49.2]	577
West Coast	8.6	[5.3-13.7]	53.9	[46.1-61.5]	37.5	[27.7-48.5]	620
Total	**5.8**	**[4.2-7.8]**	**53.4**	**[47.7-59.1]**	**40.8**	**[35.1-46.8]**	**3,626**

A similar pattern is observed across household members by sex, age, and district (Table 64). Unsurprisingly, the elderly (55-64 years and 65 years and older) had the higher percentage of household members who were reported as having poor or fair health status, with 15.1% and 17.8%, respectively. Cape Winelands had the highest percentage of household members who were reported as having poor or fair health status, with 6.1%, while Garden Route had the least in this category, with 3.9%.

Table 64: Household members' reported perceived health status by sex, age and district

	Poor/Fair		Good		Very good/Excellent		Total
	%	95% CI	%	95% CI	%	95% CI	n
Sex							
Male	4.1	[3.3-5.2]	50.2	[46.4-54.1]	45.6	[41.6-49.8]	6,649
Female	5.0	[4.2-5.9]	52.0	[48.5-55.4]	43.0	[39.7-46.4]	7,609
Total	**4.6**	**[3.9-5.4]**	**51.2**	**[47.8-54.5]**	**44.2**	**[40.8-47.7]**	**14,258**
Age group							
0-14	1.0	[0.5-2.2]	45.2	[41.1-49.3]	53.8	[49.6-58.0]	3,627
15-24	0.8	[0.4-1.8]	44.2	[38.8-49.8]	55.0	[49.5-60.3]	2,476
25-34	1.7	[0.9-3.4]	50.8	[46.0-55.5]	47.5	[42.3-52.7]	2,149
35-44	3.2	[2.1-4.8]	50	[44.3-55.6]	46.9	[40.8-53.1]	1,742
45-54	7.7	[5.6-10.4]	58.2	[53.1-63.1]	34.2	[29.7-38.9]	1,518
55-64	15.1	[11.9-18.8]	59.4	[54.5-64.1]	25.6	[21.9-29.6]	1,397
65+	17.8	[13.8-22.7]	58.8	[53.7-63.7]	23.4	[18.3-29.3]	1,073
Total	**4.7**	**[4.0-5.5]**	**50.2**	**[46.9-53.6]**	**45.1**	**[41.6-48.6]**	**13,982**
District							
Cape Winelands	6.1	[4.8-7.7]	52.3	[47.7-56.8]	41.7	[36.8-46.7]	2,139
Central Karoo	4.0	[3.1-5.1]	46.1	[42.8-49.3]	49.9	[46.3-53.5]	2,676
City of Cape Town	4.4	[3.4-5.6]	52.4	[47.4-57.4]	43.2	[38.1-48.4]	2,284
Garden Route	3.9	[3.0-5.1]	45.4	[41.7-49.2]	50.6	[46.9-54.4]	2,614
Overberg	4.8	[3.5-6.6]	49.0	[44.7-53.3]	46.2	[41.2-51.3]	1,972
West Coast	5.0	[3.8-6.4]	50.3	[46.7-53.9]	44.7	[40.8-48.7]	2,623
Total	**4.6**	**[3.9-5.4]**	**51.3**	**[47.9-54.6]**	**44.2**	**[40.7-47.6]**	**14,311**

Figure 91 shows that Breed valley, Cederberg, Swellendam, and Langerberg local municipalities were under the highest category (6.1% to 8.2%) of household members with reported poor or fair health status. Local municipalities that fell under the lowest category (1.9% to 2.9%) were Kannaland, George, Stellenbosch, Theewaterskloof, and Bitou (1.9 to 2.9).

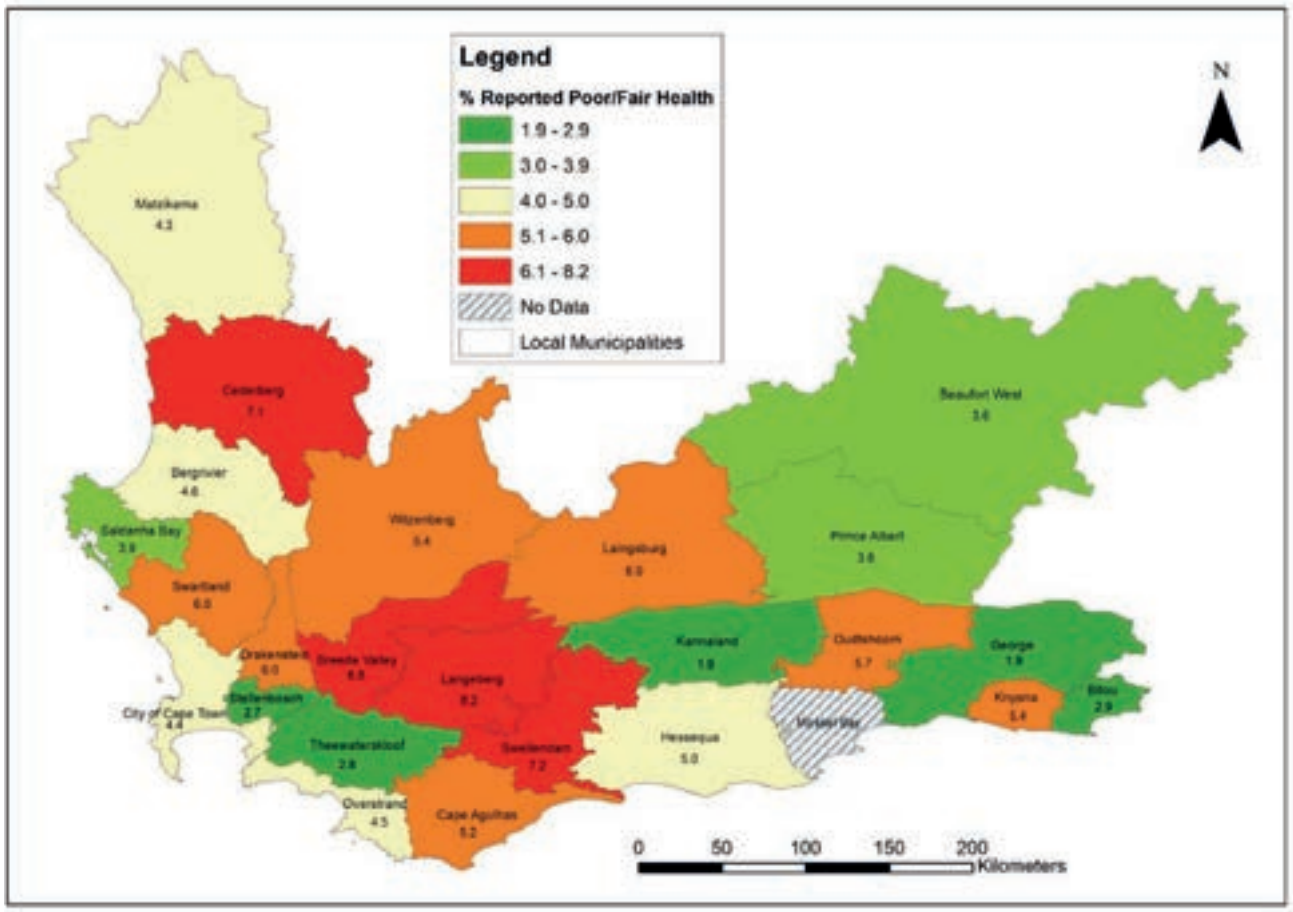


Figure 91: *Household members reported perceived health status by local municipality*

9.2 Shocks, COVID-19 coping strategies and their associated effect on food availability and access

This section covers some of the shocks and their associated effects on household food availability. The COVID-19 coping strategies are also covered in this section bearing in mind that the survey was conducted three weeks after the first COVID-19 lockdown, which affected household food access and availability in the study area.

9.2.1 Drought and water shortage

Shocks due to flooding were not commonly reported across the six districts of the Western Cape Province. Within the province, over 95% households in all the six districts reported that they have not experienced floods (Figure 91). Very few households in the province reported to have experienced flooding in the previous 12 months (note that the survey was conducted in 2022) (Figure 92).

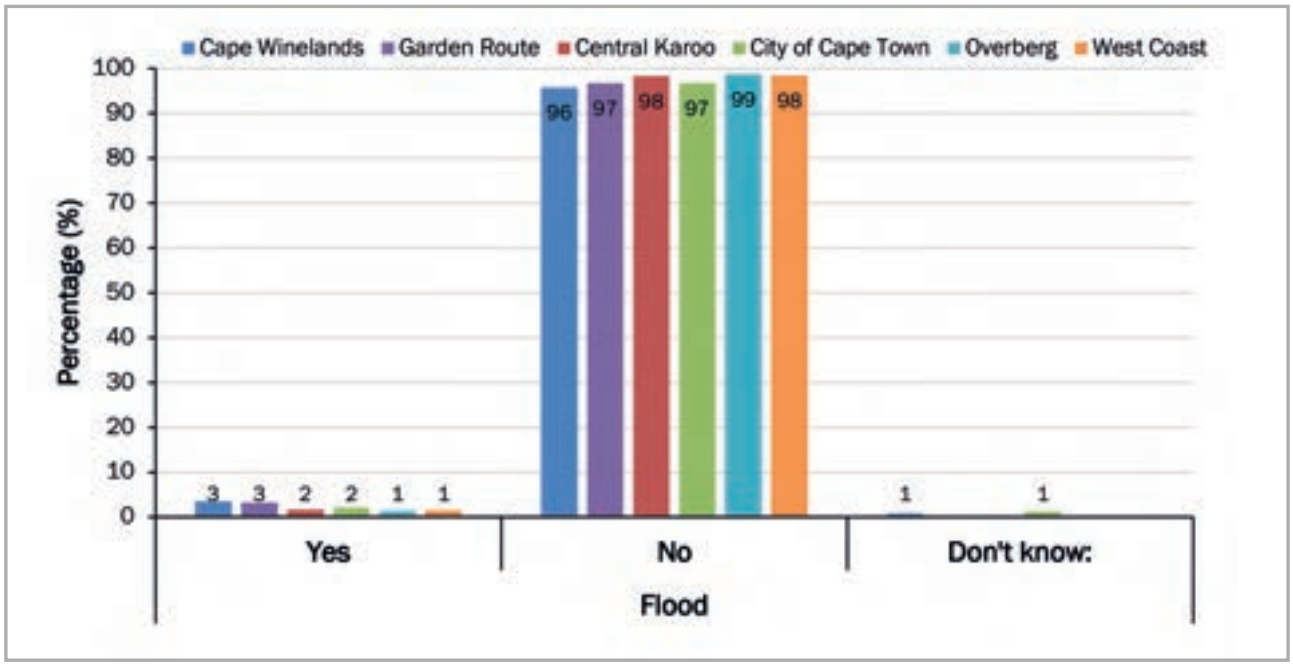


Figure 92: *Household that experience floods in the last 12 months*

Overall, the Western Cape Province experiences interannual variation when it comes to drought. It experiences years with wet winters, neutral, and dry seasons. As shown in Figure 93, only a handful (4%) in the Central Karoo District have experienced drought shock during the study period.

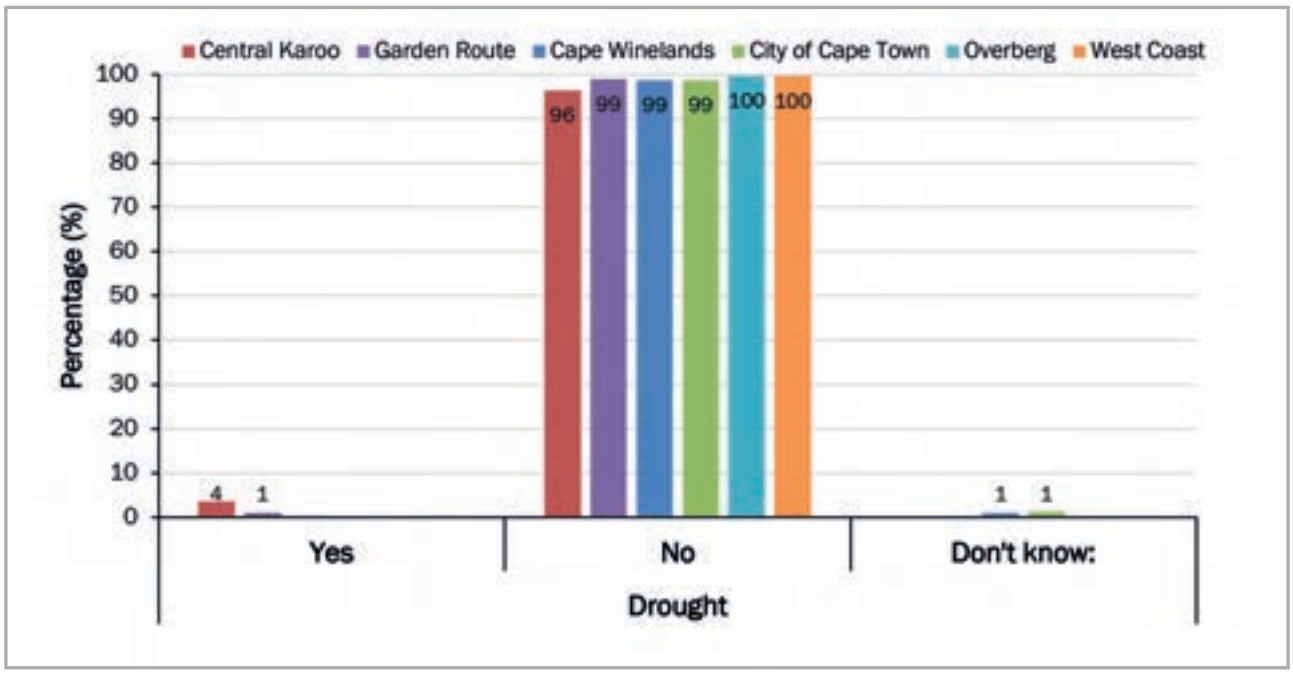


Figure 93: *Household that experience drought shock by district in the last 12 months*

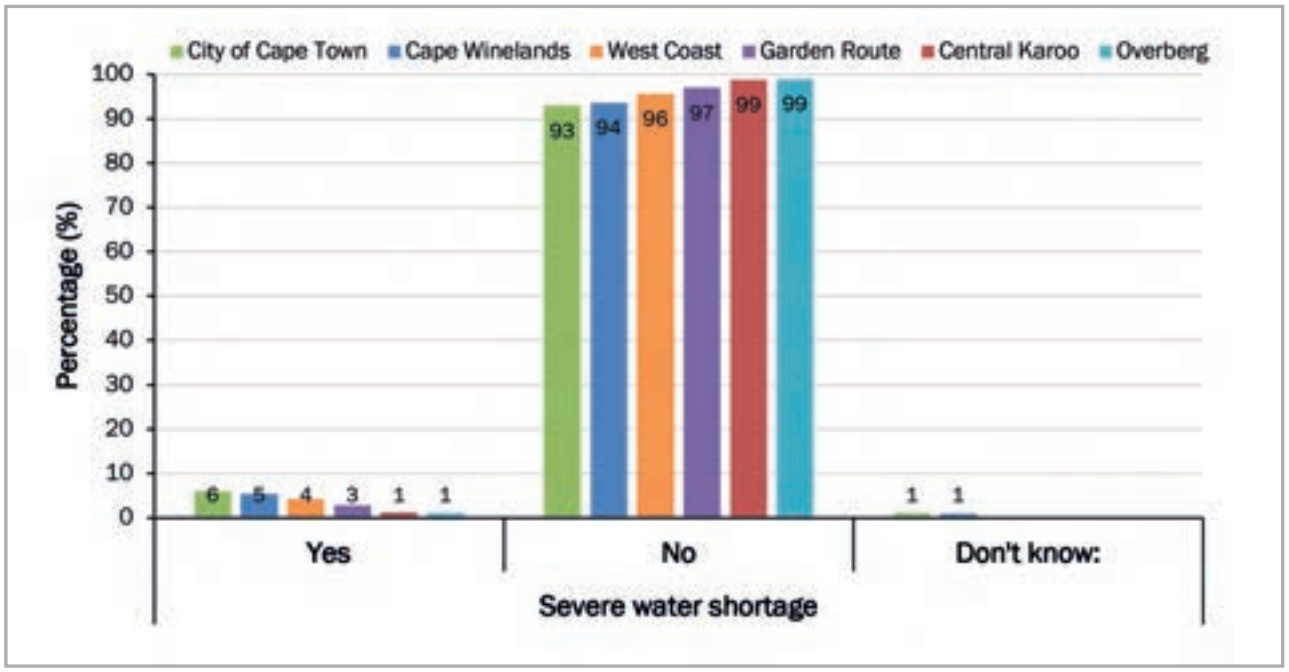


Figure 94: *Household that experience severe water shortage shock by district*

Severe water shortage is one of the shocks that was least reported in most of the districts, and was reported a little bit in City of Cape Town District (6%) as depicted by the graph. However, in general, severe water shortages were not a major challenge or shock in all the districts (Figure 94).

9.2.2 Crop disease and crop failure

Crop failure and the emergence of crop diseases were barely reported across the districts, with only 11% of the households reporting that they experienced it the most (Figure 95).

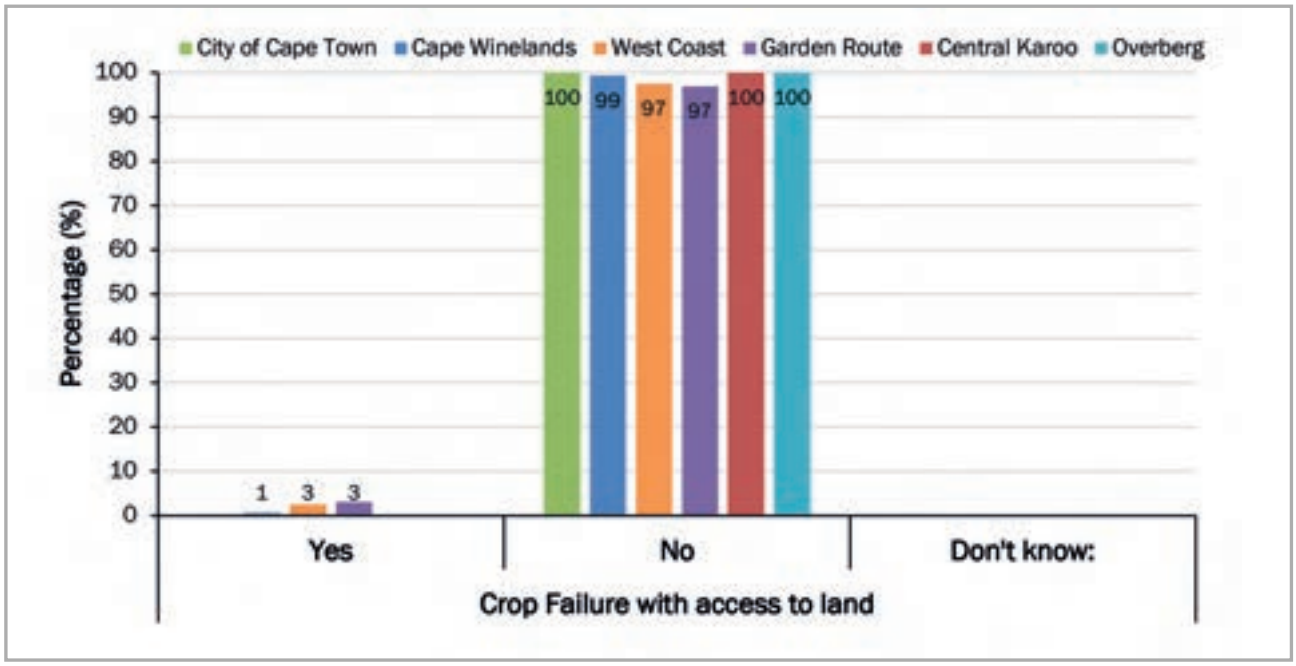


Figure 95: *Household that experience crop failure shock by district*

The low percentage of crop failure recorded in the Western Cape Province is closely related to the fact that crop production is not widely practised in the province across all the districts (Figures 95 and 96). On average, all the districts are less involved in agricultural production activities, hence the extremely low number of crop failure and disease reported

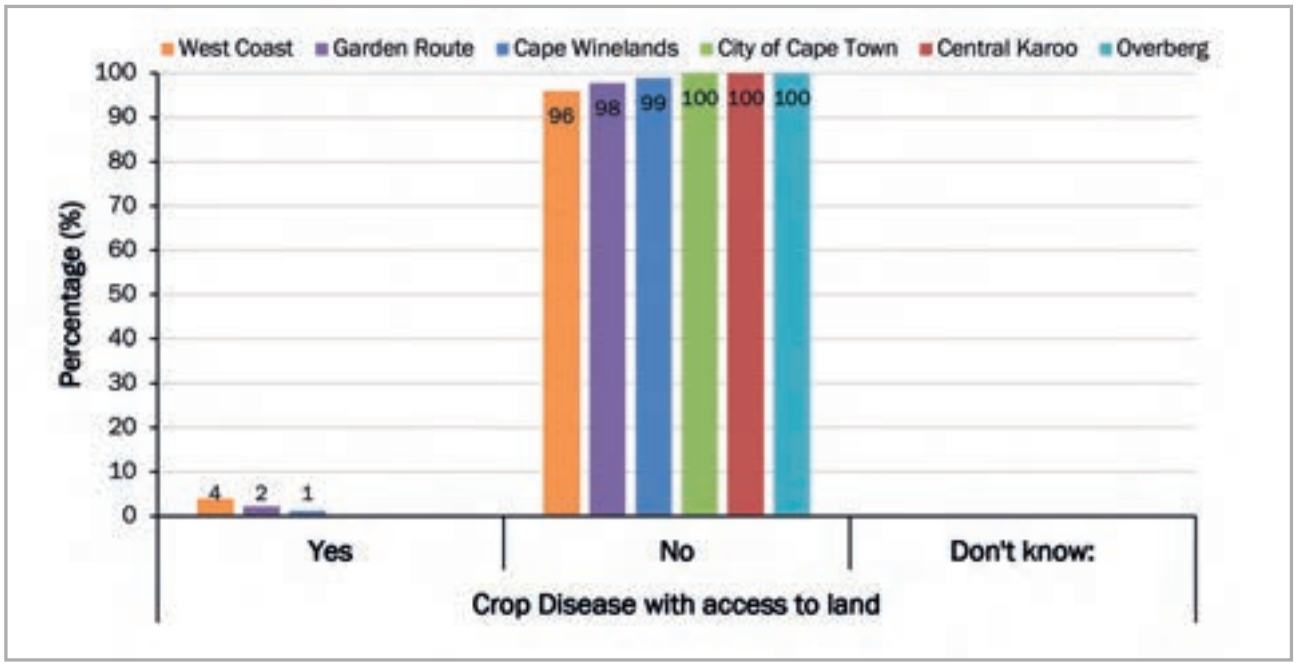


Figure 96: *Household that experience drought and water shortage shock by district*

9.2.3 Increase in inputs and food Prices

The increase in food prices was the biggest shock experienced across all the six districts in the Western Cape Province. The highest shocks were experienced in Central Karoo, Overberg, and Garden Route districts, with 57%, 55%, and 53%, respectively. This is attributable to the idea that there was extremely limited food production globally and shocks such as the COVID-19 pandemic would immediately trigger prices increases since the supply chains were disrupted due to lockdown restrictions that were put in place by the government.

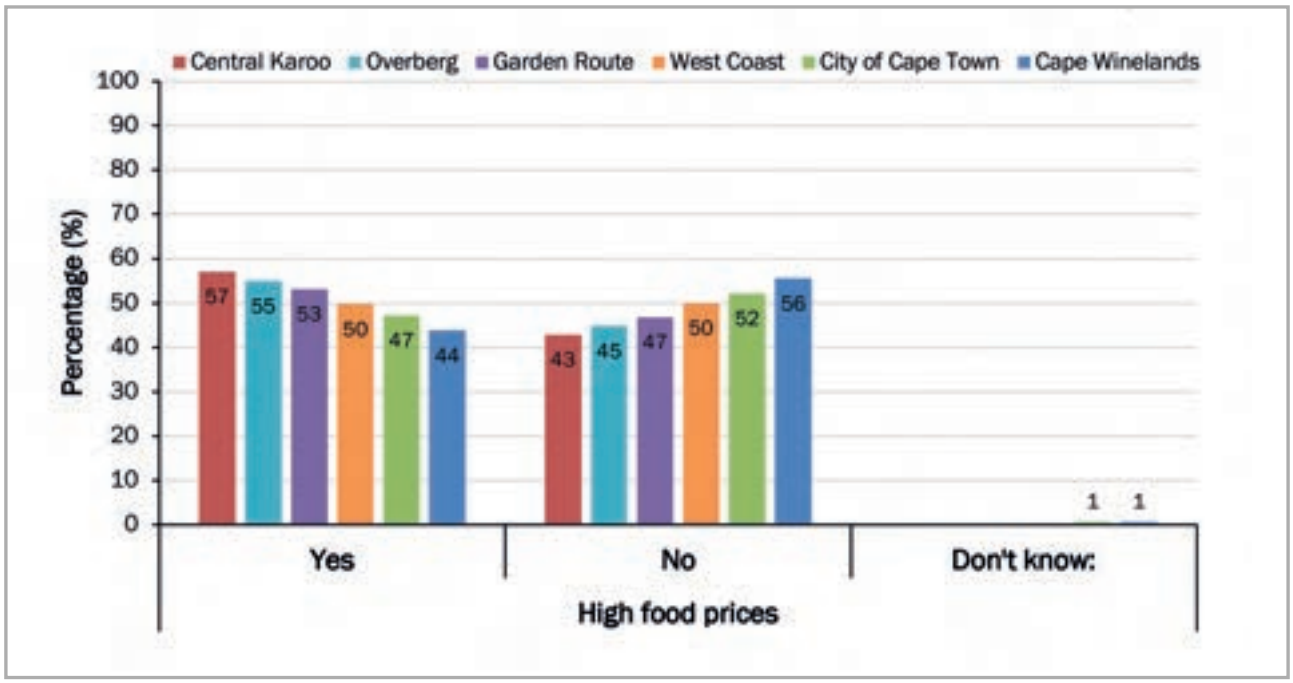


Figure 97: *Household that experience high food prices shock by district*

The increases in agriculture input prices were fairly low in all the six districts (Figure 98). The low number of households who reported to have felt the increase in input costs is directly related to the fact that the households are not highly involved in agricultural production. The increase in input prices also has a direct effect on the increase in food processing, hence this justifies the reported increases in food prices across the four districts (Figure 96).

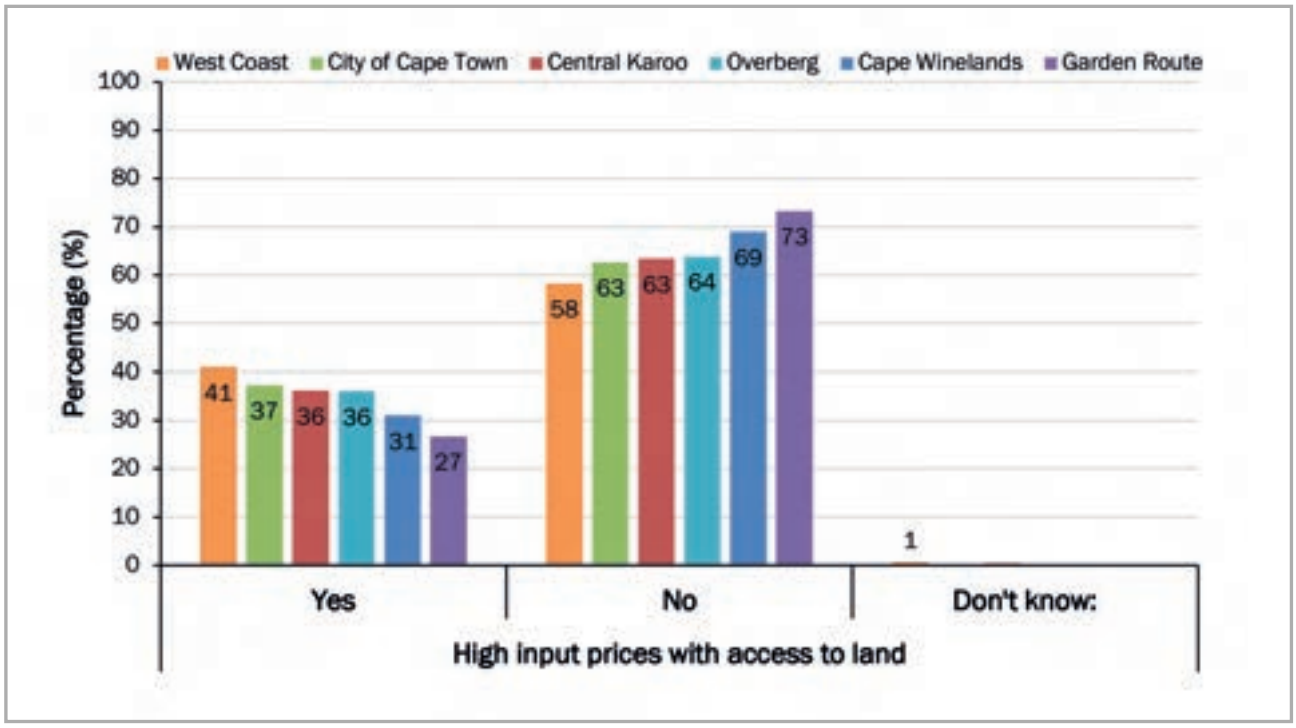


Figure 98: *Household that experience high input prices shock by district*

9.2.4 COVID-19 shocks and associated coping strategies

The COVID-19 pandemic resulted in serious disruptions in food supply chains and production systems. The Central Karoo District had the highest percentage (41.5%) of households who were sometimes worried about their food running out before they can get money to buy some more food. In all the six districts as well, the food that they bought sometimes did not last and at least 30% of the respondents did not have money to buy more food (Tables 65 and 66).

Table 65: Households that worried their food would run out before we got money to buy more

Worried that food would run out before they got money to buy more	District											
	Cape Winelands		Central Karoo		City of Cape Town		Garden Route		Overberg		West Coast	
	%	N	%	N	%	N	%	N	%	N	%	N
Never	27.3	148	23.3	162	28.9	177	26.8	185	36.8	207	18.3	114
Rarely	19.2	110	18.6	128	17.2	104	18.9	132	16.7	106	23.7	150
Sometimes	34.2	198	41.5	310	35.0	215	38.0	280	34.5	225	40.1	271
Often	19.3	113	16.6	122	18.9	116	16.2	119	12.0	77	17.9	119

Table 66: Households whose food did not last, and they did not have money to get more

The food that was bought just did not last, and they did not have money to get more	District											
	Cape Winelands		Central Karoo		City of Cape Town		Garden Route		Overberg		West Coast	
	%	N	%	N	%	N	%	N	%	N	%	N
Never	30.6	167	26.9	186	32.6	200	28.9	199	40.5	232	22.1	139
Rarely	18.7	108	19.2	133	18.5	112	19.5	136	16.8	103	22.4	143
Sometimes	33.7	197	39.1	296	31.2	191	37.3	275	32.9	216	39.1	262
Often	16.9	97	14.8	109	17.8	109	14.3	106	9.8	64	16.4	110

Table 67: Households who could not afford sufficient and nutritious food because the price of food increased

Households could not afford sufficient and nutritious food because the price of food increased	District											
	Cape Winelands		Central Karoo		City of Cape Town		Garden Route		Overberg		West Coast	
	%	N	%	N	%	N	%	N	%	N	%	N
Never	30.1	165	26.1	183	34.5	212	27.8	192	42.0	240	20.8	129
Rarely	17.3	101	20.0	138	16.5	100	19.8	136	17.0	105	23.4	147
Sometimes	34.8	202	39.9	300	30.0	184	36.4	270	32.4	213	38.8	262
Often	17.8	102	14.0	103	19.0	116	16.0	118	8.7	57	17.1	116

In all the districts, at least 30% of the households reported that sometimes they could not afford sufficient and nutritious food because of the price increases. As a result, most households were unable to eat healthy and nutritious foods, as shown in Table 68, where 37% of the respondents in the West Coast District reported that sometimes they were unable to eat healthy and nutritious food (Table 69).

Table 68: Households which were unable to eat healthy and nutritious food

Unable to eat healthy and nutritious food price of food increased	District											
	Cape Winelands		Central Karoo		City of Cape Town		Garden Route		Overberg		West Coast	
	%	N	%	N	%	N	%	N	%	N	%	N
Never	30.1	165	27.3	190	34.5	212	29.1	201	42.2	241	25.4	160
Rarely	17.2	100	19.1	132	15.1	91	18.6	128	19.0	117	19.7	125
Sometimes	34.2	199	39.6	298	31.9	196	36.5	268	29.3	195	37.5	253
Often	18.5	106	14.0	104	18.5	114	15.8	118	9.5	62	17.3	117

Table 69: Households which could not access the cheap and affordable food market, because they were shut down due to national lockdown restrictions.

Could not access the cheap and affordable food market, because they were shut down due national lockdown restrictions	District											
	Cape Winelands		Central Karoo		City of Cape Town		Garden Route		Overberg		West Coast	
	%	N	%	N	%	N	%	N	%	N	%	N
Never	29.6	162	30.7	218	40.2	247	34.8	245	48.5	282	23.9	149
Rarely	22.9	134	23.0	163	21.0	128	21.4	150	21.1	131	24.6	158
Sometimes	32.9	190	33.0	245	25.1	153	29.3	216	22.5	149	33.8	229
Often	14.6	84	13.2	98	13.8	84	14.4	105	7.9	53	17.8	118

Most households across the districts reported that sometimes they could not access cheap and affordable food markets since they were shut down because of COVID-19 national lockdown restrictions. However, this was mostly experienced in Garden Route District (Table 70).

Table 70: Household heads who were hungry but did not eat

You were hungry but did not eat	District											
	Cape Winelands		Central Karoo		City of Cape Town		Garden Route		Overberg		West Coast	
	%	N	%	N	%	N	%	N	%	N	%	N
Never	47.9	267	50.8	359	57.3	351	50.7	358	61.3	361	44.8	285
Rarely	20.7	121	19.7	140	14.5	88	21.8	154	17.7	111	26.4	173
Sometimes	21.1	121	23.6	179	18.6	115	21.2	157	16.7	112	21.0	144
Often	10.3	60	6.0	45	9.6	59	6.3	47	4.3	29	7.8	52

Table 71: Household head who had to skip a meal

Had to skip a meal	District											
	Cape Winelands		Central Karoo		City of Cape Town		Garden Route		Overberg		West Coast	
	%	N	%	N	%	N	%	N	%	N	%	N
Never	43.5	242	38.7	270	51.1	312	44.0	311	52.2	305	40.4	258
Rarely	23.2	134	22.3	159	15.6	94	21.3	147	20.6	131	24.0	156
Sometimes	21.7	126	30.9	232	22.6	139	27.5	204	22.1	144	26.9	182
Often	11.6	66	8.1	61	10.7	66	7.2	54	5.1	35	8.7	59

Although skipping a meal was least reported across all the districts of the Western Cape Province, Cape Winelands and City of Cape Town household heads did report that they often skipped a meal - and it was the highest percentage (11.6%) compared to other districts (Table 72). In Overberg District, 52% of household heads never had to skip meals. This is also attributable to the fact that these are not major food-crop producing districts since they mostly rely on formal employment in the commercial agricultural sector, services sector, and tourism. Hence households would rely entirely on buying food, which was limited due to restricted markets and high food price.

Table 72: Households who ran out of food

Household ran out of food	District											
	Cape Winelands		Central Karoo		City of Cape Town		Garden Route		Overberg		West Coast	
	%	N	%	N	%	N	%	N	%	N	%	N
Never	45.4	253	45.6	322	54.5	335	50.4	357	61.7	362	42.5	274
Rarely	19.6	114	18.9	134	13.4	82	19.0	132	15.7	101	21.9	140
Sometimes	22.0	128	28.1	214	19.7	120	21.9	162	17.8	119	24.7	169
Often	12.9	73	7.3	54	12.4	76	8.7	65	4.8	32	10.8	72

COVID-19 was expected to increase the number of households who are food insecure in developing countries. In the Western Cape Province, in the three districts of Cape Winelands, Central Karoo, and Garden Route, 19% of the households did report that they rarely ran out of food, with 45% of the households in Cape Winelands and Central Karoo districts reporting to have never run out of food (Table 73).

Table 73: Household heads who went without eating for a whole day

Went without eating for a whole day	District											
	Cape Winelands		Central Karoo		City of Cape Town		Garden Route		Overberg		West Coast	
	%	N	%	N	%	N	%	N	%	N	%	N
Never	59.3	332	60.0	427	67.5	409	59.1	419	67.3	396	63.6	409
Rarely	16.2	95	18.0	128	12.6	77	19.7	139	15.6	101	16.4	107
Sometimes	15.2	86	17.5	133	12.6	78	15.4	114	13.1	89	14.4	99
Often	9.3	54	4.6	34	7.3	45	5.7	43	4.0	27	5.6	38

Results show that it was exceedingly rare for the household heads to go without eating for the entire day. However, in Cape Winelands and Garden Route districts, a considerable number of the household heads (15%) had reported that they sometimes went a full day without consuming food during the COVID–19 pandemic (Table 74).

10 Key findings and policy recommendations

Key findings

Food security is one of the strategic imperatives for South Africa as outlined in many governments' policy documents, including the Constitution and the national development plan. The right to have access to sufficient food by all citizens is enshrined in the Constitution of the country. This survey provides a baseline assessment of the food and nutrition security situation of households in Western Cape Province. The findings presented in this report provided insights regarding the food and nutrition security status across the four dimensions of food and nutrition security in the province.

Demographics characterisation

More than half of the household heads were males (59.2%), with Coloureds being the dominant racial group (69%). The heads were mostly middle-aged, with significant proportions of especially women with no matric. Very few of the household heads had tertiary qualifications. There were generally very high unemployment levels (54%) in the sampled areas, particularly among the female-headed households. Most households earned less than R6,000 per month, and salaries/ wages, social protection and small businesses were the major sources of income of the households. Social protection plays an important role in providing a major socio-economic safety net for many poor households, and many of them were recipients of CSG and OAG. Farming plays an insignificant role among most of the households in the province, with only a few households involved in large scale commercial farming activities reliant on farming as a key livelihood source. While most of the households had access to social grants, the amounts received are not enough to eradicate hunger, food insecurity, and malnutrition. Households generally had access to safe drinking water and improved sanitation.

Socio-economic status, health and well being

This survey has revealed that socio-economic challenges that include limited food production at household level, high dependencies on social grants, acute unemployment, especially among women and youth, and dwindling household incomes expose households to food and nutrition insecurity. Despite the high levels of unemployment and inadequacy of social grant income, few households were involved in farming activities. Most households relied on food purchases, which left them vulnerable to volatile food prices and inflation. Households' access to land was generally limited in the study area, and the land they use is generally very small, with most households reporting access to land that was less 500m^2.

Food security indicators

Several food security indicators (such as the Household Food Insecurity Access Score (HFIAS), Household Hunger Score (HHS), Food Consumption Score (FCS), and Household Dietary Diversity Score (DDS)), indicated that many households were facing food access challenges in the Western Cape Province. The HFIAS revealed that 54.7% of the households are food insecure, with 17.3% of the households being severely food insecure. Most of the households experienced no hunger to little hunger when food access was measured through HHS. On average, households consumed above average (HDSS>6) dietary levels, as indicated through the HDSS. However, this does not always mean that households consumed healthy foods with required micronutrients. Further analysis indicated that households mostly consumed food groups such as cereals, condiments, sugars and oils/ fats, and there was limited consumption of nutritious food groups such as fruits, pulses and nuts, eggs, and fish and seafood. The FCS indicated that more than a tenth of households (10.9%) consumed poor diets. While female-headed households were significantly more food insecure than male-headed households, they were likely to consume better diets than their male counterparts.

Nutrition indicators

The prevalence of malnutrition remains a public health problem in the Western Cape Province.

Household food insecurity was found to be a key driver of malnutrition in both children and adults in the Western Cape. Stunting, wasting, and underweight were more likely among food insecure households than food secure households. On the other hand, overweight and obesity was likely to occur among food secure households. These results demonstrate South Africa's dual nutrition problem, where occurrence of undernutrition occurs together with overweight and obesity in similar communities. Given the high levels of household food insecurity in the Western Cape, the government should develop and implement several interventions that improve food security in the province; these include land access, inputs provision, and empowering women-headed households. The next sub-section presents some of these recommendations.

11 Recommendations

- While a sizeable number of households were involved in agricultural activities, the study revealed that many households did not participate in farming in the Western Cape. As such, there is a huge reliance on food purchases from income that is mainly received from social grants. Focus group discussions generally revealed lack of young people's participation in agricultural activities. To revitalize rural economies and improve household food security, government and other stakeholders should implement strategies to motivate and/or attract household members, especially the youth, to be involved in farming activities. A key strategy is to make farming profitable (though market support, agro-processing, prices, etc.), as well as 'sexy' (e.g., introducing smart farming). Given the limited potential of labour absorption in the non-farm sectors, it is clear that farming will continue to have a role in addressing the food security challenge facing communities, especially in rural areas.
- Water shortage and recurrent drought emerged as part of the major shocks. This implies that there is need for a well thought out water provision programme in Western Cape Province for household use and for agriculture production purposes. Possible interventions could be construction of dams for irrigation and domestic water reticulation systems at the household level.
- Promotion of projects and programmes that encourage good hygiene practices such as use of latrines and washing hands with soap after using the toilet is crucial.
- Breastfeeding promotion, growth monitoring for improved case detection in children who need care, appropriate referrals, and management of acute malnutrition, coupled with appropriate messages on complementary feeding remain key interventions that need to be done. There is a need to scale-up multiple micronutrient supplementation during pregnancy, calcium supplementation to mothers at risk of low intake, promotion of maternal balanced nutrition, use of iodised salt, deworming, and vitamin A and zinc supplementation for children under 5.
- Nutrition assessment of children under-five at all points of contact should be strengthened. More focus should be given to the first 1 000 days of a child's life. Nutrition assessment during pregnancy and appropriate management of pregnant women who are underweight or with poor weight gain should be strengthened during basic antenatal care services.
- Households need support in some months of the year (mainly January and June) to avoid negative consumption reduction practices and incidence of seasonal hunger. Interventions that seek to help households budget and save in anticipation of lumpy expenditures are crucial to ensure year-round food security.
- Enlightenment about the importance of micro- and macro-nutrient consumption as a crucial, food security programmes that must be formulated to focus on the production and consumption of foods aimed at improving the identified deficient micro-nutrient at the household level. Interventions on food preparation, meal planning and nutrition advice to support home production of fresh produce is required for improved dietary diversity in the households.
- These interventions, together with full scale implementation of other nutrition sensitive programmes and approaches such as school feeding , agriculture and food security enhancement programmes, social safety network, early childhood nutrition, women empowerment, child protection water, sanitation and hygiene, and other health and family planning services, in an enabling environment will greatly reduce morbidity and mortality in childhood, incidence of obesity and non-communicable diseases, while on the other hand contributing to the improvement of cognitive, motor socio-emotional development, school performance and learning capacity, adult stature, and work capacity and productivity.

- Promotion of domestic food production: This will involve encouraging families to produce their own food to ensure food security at household level. In Western Cape, most families rely on food purchased from supermarkets, and formal and informal traders. This is unsustainable and makes households more vulnerable to food insecurity.
- Focused investment and the establishment of food banks: Creating an enabling environment for commercial food production - There is need to increase agricultural production in each district through focused food production and agro-processing investments. These can be distributed through fruit and vegetables markets that can be strategically located close to vulnerable households in all districts of the province. The markets may also serve as food banks where items imported elsewhere can be sold at affordable prices.
- Focus on employment creation: Targeted intervention through an agric-sector employment creation drive - A combination of high levels of unemployment and dwindling incomes means that vulnerability to food insecurity will always remain high.
- Land redistribution and restitution: Most households reported limited access to land hence there is a need for deliberate land apportionment to empower the vulnerable, especially women and the youth. Competing priorities for land pose a threat to agriculture production, considering this, the government is tasked to provide priorities of land. People seem to prefer obtaining big pieces of land and use it to build houses rather than for food production. This will increase and sustain agricultural production in rural areas of South Africa. It has potential to allow agriculture to serve as a significant source of income for households.
- Investment in post-harvest agro-processing: Although some households were found to be involved in agricultural activities now, these are not sustainable and cannot ward off household vulnerability to food insecurity. A food system that encourages and enables households to process and consume what they produce locally is needed. Households need support in some months of the year (mainly January) to avoid reduce consumption patterns and incidence of seasonal hunger. Interventions that seek to help households budget and save in anticipation of lumpy expenditures are crucial to ensure year-round food security. Awareness raising to enlighten households about the importance of dietary diversity for improved nutrition is crucial. Implementation of nutrition sensitive food security programmes by all sectors should be initiated.
- Enhancing food Safety: Informal traders and small businesses that trade in agricultural products need assistance to help them improve the quality of their services through quality assurance and extend the lifespan of their products. COVID-19 has irreversibly transformed human perception of food and food safety. As a result, people have realized the importance of consuming safe and healthy food, not only to boost one's immune system but also to prevent the spread of diseases. As revealed in this study, people do not have equal access to safe and healthy food. For most poor people, informal traders are the main source of food. It is for this reason that a proposal to integrate food safety and quality standards in the operations of informal traders and small to medium enterprises is here being made. This will improve the quality of food items traded, and increase the profits of informal traders.

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