



stats sa

Department:
Statistics South Africa
REPUBLIC OF SOUTH AFRICA

Private Bag X44, Pretoria, 0001, South Africa, ISibalo House, Koch Street, Salvokop, Pretoria, 0002
www.statssa.gov.za, info@statssa.gov.za, Tel +27 12 310 8911

STATISTICAL RELEASE

P0318.3

General Household Survey, Selected development indicators, Metros 2022

Embargoed until:
17 August 2023
14:30

ENQUIRIES:
User Information Services
Tel.: (012) 310 8600

FORTHCOMING ISSUE:
GHS 2023

EXPECTED RELEASE DATE
May 2024

Contents

List of Abbreviations	2
1 Introduction and methodology.....	3
1.1 Background	3
1.2 Methodology and fieldwork	3
1.3 Data revisions.....	3
2 Indicator tables	4
2.1 Agriculture	4
2.2 Education.....	6
2.3 Environmental indicators.....	8
2.4 Health	9
2.5 Human settlement.....	10
2.6 Social development	11
2.7 Transport	12
2.8 Water and sanitation.....	13
3 Indicator tables	15
3.1 MFMA Circular No. 88 metro indicator data elements, 2022	15
4 Technical notes	18
4.1 <i>Target population</i>	18
4.2 <i>Sample design</i>	18
4.3 <i>Allocating sample sizes to strata</i>	18
4.4 <i>Weighting</i>	21
4.5 <i>Sampling and the interpretation of the data</i>	21
4.6 <i>Definitions of terms</i>	21
5 Specific departmental indicators and question linkages	23

List of Abbreviations

ASER	Age-specific Enrolment Ratio
CVs	Coefficient of Variations
DOA	Department of Agriculture
DUs	Dwelling Units
EAs	Enumeration Areas
GHS	General Household Survey
PSUs	Primary Sampling Units
RDP	Reconstruction and Development Programme
UN	United Nations
VIP	Pit Toilet with ventilation
WSA	Water Services Authorities
MAFA	Municipal Finance Management Act
MTREF	Medium Term Revenue and Expenditure Framework

1 Introduction and methodology

1.1 Background

The execution of the General Household Survey (GHS) in 2009 was preceded by extensive stakeholder consultation. The main objective of the consultation was to align the questionnaire and survey process more with user needs and adjust the questionnaire accordingly. The process yielded the following results:

- Specific linkages were established between the monitoring and evaluation indicators of each government department and the GHS questionnaire.
- It was found that in some instances the GHS was the only or main source of this information, but in other cases the various departments use the GHS information to verify their information from administrative records and/or other sources.
- Questions were modified and/or added where necessary.
- The users expressed a need for an earlier release of the indicator information to enable them to more effectively report on their activities.
- Several departments indicated that they did not have staff capable of analysing the GHS data and engaging consultants for this purpose was not always possible as a result of funding constraints.
- The initial reports only provided data at national and provincial level.

Metro level reporting became possible with the introduction of a new master sample for the GHS 2015 collection, and it was therefore decided to develop a new GHS release specifically aimed at reporting on the various development indicators as measured for metros. The first report was released in May 2016 as a discussion document. The current report is the fourth in the series and summarises the data for each metro and metros as a whole as measured by GHS 2019.

1.2 Methodology and fieldwork

A multi-stage design was used in this survey, which is based on a stratified design with probability proportional to size selection of primary sampling units (PSUs) at the first stage and sampling of dwelling units (DUs) with systematic sampling at the second stage. After allocating the sample to the provinces, the sample was further stratified by geography (primary stratification), and by population attributes using Census 2011 data (secondary stratification). Survey officers employed and trained by Stats SA visited all the sampled dwelling units in each of the nine provinces. During the first phase of the survey, sampled dwelling units were visited and informed about the coming survey as part of the publicity campaign. The actual interviews took place four weeks later. A total of 19 649 households (including multiple households) were successfully interviewed during face-to-face interviews.

Two hundred and thirty-three enumerators (233) and 62 provincial and district coordinators participated in the survey across all nine provinces. An additional 27 quality assurors were responsible for monitoring and ensuring questionnaire quality. National refresher training took place over a period of two days. The national trainers then trained provincial trainers for two days at provincial level. For a more detailed discussion on sampling and fieldwork please refer to the Technical notes as described in Section 3.

1.3 Data revisions

The questionnaires were scanned and processed. Editing and imputation was done using a combination of manual and automated editing procedures. Details about this process can be found in the GHS 2019 report (P0318). Section 4 describes the methods used to calculate each indicator value. When calculating percentages, missing and do not know values were discarded from the denominator unless otherwise stated.



Risenga Mululeke
Statistician-General

2 Indicator tables

2.1 Agriculture

Table 2.1: Agriculture indicators by metro

Indicators	Metro								
	City of Cape Town	Buffalo City	Nelson Mandela Bay	Mangaung	eThekweni	Ekurhuleni	City of Johannesburg	City of Tshwane	All Metros
% of households who engaged in agricultural activities during the past 12 months	2,6	15,1	3,1	11,1	1,5	4,6	5,7	7,6	5,0
Livestock production	0,1	5,1	0,0	0,4	0,2	0,2	0,2	0,2	0,3
Poultry production	0,0	6,9	0,4	1,6	1,2	0,1	0,4	0,7	0,7
Grains and food crops	0,3	0,4	0,0	1,3	0,1	0,3	0,2	0,8	0,3
Industrial crops	0,0	0,0	0,0	0,3	0,0	0,0	0,0	0,1	0,0
Fruit and vegetable production	2,3	8,5	2,9	10,4	0,8	4,2	5,1	6,3	4,2

Table 2.1: Agriculture indicators by metro (concluded)

Indicators	Metro								
	City of Cape Town	Buffalo City	Nelson Mandela Bay	Mangaung	eThekweni	Ekurhuleni	City of Johannesburg	City of Tshwane	All Metros
% of households involved in different crop planting activities:									
Farm land (communal or private)	0,0	0,0	0,0	0,0	0,0	0,2	0,0	0,2	0,1
Backyard garden	2,4	8,9	2,9	10,9	0,9	4,0	4,9	6,5	4,2
School garden	0,0	0,0	0,0	0,0	0,0	0,1	0,0	0,0	0,0
Communal garden	0,0	0,0	0,0	0,0	0,0	0,2	0,1	0,0	0,1
Verges of the road and unused land	0,0	0,0	0,0	0,0	0,0	0,0	0,2	0,0	0,1
Other	0,1	0,0	0,0	0,2	0,0	0,0	0,1	0,0	0,1
% of households classified as:									
Food access adequate	77,6	87,4	82,6	73,1	92,3	87,0	81,1	88,5	84,3
Food access inadequate	13,6	9,1	13,6	13,4	2,9	10,8	13,3	7,9	10,4
Food access severely inadequate	8,8	3,5	3,8	13,6	4,8	2,1	5,6	3,6	5,3

2.2 Education

Table 2.2: Education indicators by metro

Indicators	Metro								
	City of Cape Town	Buffalo City	Nelson Mandela Bay	Mangaung	eThekweni	Ekurhuleni	City of Johannesburg	City of Tshwane	All Metros
Age-specific Enrolment Ratio (ASER) expressed as a percentage									
Primary School	98,5	97,1	98,6	98,0	98,0	99,5	98,3	99,3	98,6
All	93,3	96,1	95,8	96,3	94,8	96,4	95,9	96,4	95,4
% of 16-18-year-olds who attend any institution	79,2	91,8	86,3	87,4	84,9	87,7	88,4	90,8	86,3
% of children with special needs aged 7–15 NOT enrolled in educational institutions	20,2	69,8	100,0	66,7	6,7	13,4	11,5	3,1	13,8
% of learners in public schools that do not pay school fees	47,3	68,9	52,0	63,2	42,4	63,3	67,7	62,7	57,4
% of learners in schools receiving social grants	48,1	65,7	57,8	61,7	57,6	46,5	49,5	53,5	52,2
Numbers of learners enrolled (16–18) in any institution N ('000)	180	30	42	27	166	163	249	177	1 034

Table 2.2: Education indicators by metro (concluded)

Indicators	Metro								
	City of Cape Town	Buffalo City	Nelson Mandela Bay	Mangaung	eThekwini	Ekurhuleni	City of Johannesburg	City of Tshwane	All metros
% of learners in public schools benefiting from free scholar transport	1,6	0,0	3,3	4,8	1,7	2,0	1,7	3,9	2,2
% of learners in public schools benefiting from the nutrition programme	52,5	79,4	63,0	66,3	69,3	62,2	60,4	60,0	61,7
% of learners attending school who reported incidents of corporal punishment	0,4	0,2	2,3	6,6	11,9	0,4	1,0	1,4	2,8
Adult literacy rates (persons 20 years and older with less than Grade 7 as highest level of education)	4,8	7,7	5,0	8,3	5,6	4,2	3,7	4,3	4,7

2.3 Environmental indicators

Table 2.3: Environmental related indicators by metro

Indicators	Metro								
	City of Cape Town	Buffalo City	Nelson Mandela Bay	Mangaung	eThekweni	Ekurhuleni	City of Johannesburg	City of Tshwane	All Metros
Number of households using borehole water N ('000)	3	1	2	2	4	3	5	8	29
Number of households using wood/coal for cooking N ('000)	2	2	1	1	2	15	4	8	36
% of households whose refuse is removed by a local authority or private company or municipality	89,5	67,7	87,0	72,3	84,5	87,6	86,9	79,7	84,9
% of households who feel that they are experiencing problem with:									
Littering	28,3	39,7	40,8	52,9	37,3	26,0	37,5	20,9	32,3
Water pollution	10,3	36,3	14,8	24,6	19,7	9,4	24,7	11,4	17,0
Air pollution	11,0	47,2	11,0	25,9	13,3	16,8	24,7	8,7	17,1
Land degradation	17,7	57,4	1,8	49,8	18,5	15,8	32,0	17,5	22,8
Excessive noise pollution	15,7	31,6	3,7	31,3	12,4	14,5	29,3	12,6	18,6

2.4 Health

Table 2.4: Health Indicators by metro

Indicators	Metro								
	City of Cape Town	Buffalo City	Nelson Mandela Bay	Mangaung	eThekweni	Ekurhuleni	City of Johannesburg	City of Tshwane	All Metros
% of orphans aged 7–18 years attending educational institutions	89,9	95,0	86,5	87,0	88,8	95,6	94,1	93,3	92,2
% of people 20 years and older with no schooling	0,6	2,4	0,8	1,3	1,6	1,1	0,8	1,3	1,1
% of persons with medical aid coverage	28,3	22,1	24,9	21,0	21,7	24,0	18,9	28,1	23,7
% of households for which the usual place of consultation is a public facility	51,7	77,2	60,8	71,2	69,5	66,1	70,9	57,9	64,6

2.5 Human settlement

Table 2.5: Human settlement indicators by metro

Indicators	Metro								
	City of Cape Town	Buffalo City	Nelson Mandela Bay	Mangaung	eThekweni	Ekurhuleni	City of Johannesburg	City of Tshwane	All Metros
% of households who live in an RDP or state-subsidised house	24,7	26,2	34,1	22,5	22,1	14,3	9,5	18,5	18,1
% of households receiving a housing subsidy from the state	14,3	23,0	7,5	16,4	10,0	5,3	5,7	11,0	9,5
% of households living in informal dwellings/tents/caravans	16,7	17,8	6,0	12,4	9,6	19,4	18,7	15,5	15,8
% of households who state that the condition of the walls of their state provided/subsidised housing is weak/very weak	11,3	13,6	2,0	11,5	3,6	0,0	3,7	3,8	5,5
% of households who state that the condition of the roof of their state provided/subsidised housing is weak/very weak	12,4	8,8	2,0	11,6	6,5	1,4	7,4	3,4	6,7
% of households who pay rent for a state provided/RDP house	20,4	16,5	12,4	3,4	8,9	10,9	8,7	13,7	12,8
% of households who fully own their dwellings	47,4	70,4	61,5	59,7	40,0	36,4	35,5	42,8	42,4

2.6 Social development

Table 2.6: Social development indicators by metro

Indicators	Metro								
	City of Cape Town	Buffalo City	Nelson Mandela Bay	Mangaung	eThekweni	Ekurhuleni	City of Johannesburg	City of Tshwane	All Metros
Number of persons 60 years and older N('000)	491	85	150	88	381	329	511	331	2 366
Number of households with at least one person 60 years and older N ('000)	338	70	113	80	295	251	381	232	1 760
% of persons 60 years and older who are disabled (UN definition)	18,6	24,9	15,0	39,5	8,5	21,3	13,9	26,2	18,2
% of persons 60 years and older who are severely disabled	8,1	10,2	9,8	16,7	5,3	6,5	6,4	15,1	8,5
% of people 60 years and older who received old-age grant	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
% of people 60 years and older who received social grants	48,1	79,7	58,7	65,6	68,4	63,9	58,2	47,7	58,2
% of households with persons 60 years and older and classified as:									
Food access adequate	77,6	87,4	82,6	73,1	92,3	87,0	81,1	88,5	84,3
Food access inadequate	13,6	9,1	13,6	13,4	2,9	10,8	13,3	7,9	10,4
Food access severely inadequate	8,8	3,5	3,8	13,6	4,8	2,1	5,6	3,6	5,3
Number of households classified as N ('000)									
Food access adequate	1 054	221	305	218	1 178	1 230	1 782	1 138	7 126
Food access inadequate	185	23	50	40	37	153	292	101	881
Food access severely inadequate	120	9	14	40	61	30	122	47	444
% of poor households with children aged 7–18 who do not spend money on school fees	69,8	87,5	77,7	83,4	55,3	78,0	81,7	79,1	76,4
Number of households classified as poor using household monthly expenditure of below R2 500 as the cut-off N ('000)	205	80	84	112	314	437	643	352	2 228
Number of households classified as poor using household monthly expenditure of below R2 500 as the cut-off and who have children aged 7–18 N ('000)	76	27	31	44	79	113	204	106	681

2.7 Transport

Table 2.7: Transport indicators by metro

Indicators	Metro								
	City of Cape Town	Buffalo City	Nelson Mandela Bay	Mangaung	eThekweni	Ekurhuleni	City of Johannesburg	City of Tshwane	All Metros
# of passenger trips made per month with each public transport mode N ('000):									
Minibus/taxi	4 155	605	1 132	956	5 656	6 269	9 250	3 674	31 698
Bus	1 297	4	161	174	389	131	764	479	3 400
Train	26	0	16	0	0	27	13	122	205
% of the household's income spent on transport per month									
1–10%	46,5	48,4	54,6	50,4	29,5	45,4	47,7	41,1	44,1
11–20%	28,8	23,8	27,1	30,2	37,2	30,3	25,3	24,1	28,2
21–30%	10,9	11,8	7,9	9,9	17,4	11,0	10,3	11,3	11,5
30% or more	13,7	16,1	10,4	9,6	16,0	13,3	16,8	23,5	16,2
% of learners travelling for longer than 30 minutes to an education institution	13,3	11,7	4,0	13,6	10,2	13,0	12,4	18,1	12,8
% of workers travelling for longer than 30 minutes to their place of work	38,2	20,4	4,6	25,6	32,8	36,8	37,1	47,4	35,8

2.8 Water and sanitation

Table 2.8: Water and sanitation variables by metro

Indicators	Metro								
	City of Cape Town	Buffalo City	Nelson Mandela Bay	Mangaung	eThekweni	Ekurhuleni	City of Johannesburg	City of Tshwane	All Metros
Number of households with water supply infrastructure of RDP standard or higher N ('000)	1 348	226	342	292	1 202	1 383	2 188	1 252	8 233
Number of households with water supply infrastructure less than RDP standard N ('000)	11	27	28	6	74	31	8	34	218
Number of households with no water supply infrastructure N ('000)	6	4	30	4	53	15	12	38	163
Consumer perception index of water quality N ('000)									
Number of consumers who experienced interruptions of 48 hours or more at a time N ('000)	63	81	150	98	675	123	334	179	1 703
Number of WSAs whose consumers have experienced a cumulative interruption of more than 15 days for the financial year N ('000)	26	40	39	62	579	47	130	103	1 026
Number of households with access to a functioning basic sanitation facility (strategic framework) N ('000)	1 299	248	356	249	1 130	1 268	2 079	1 094	7 722

Table 2.8: Water and sanitation variables by metro (concluded)

Indicators	Metro								
	City of Cape Town	Buffalo City	Nelson Mandela Bay	Mangaung	eThekweni	Ekurhuleni	City of Johannesburg	City of Tshwane	All Metros
Number of households using bucket toilets N ('000)	41	0	7	2	1	33	17	12	112
Number of households with substandard toilet facility N ('000)	46	4	12	39	136	143	111	182	673
% of households with substandard toilet facility	3,4	1,5	3,2	13,2	10,7	10,1	5,1	14,2	8,0
Number of households with no sanitation facility N ('000)	3	1	0	8	3	2	0	1	18
% households with access to improved sanitation facilities	95,7	98,1	96,8	83,9	88,9	89,7	94,8	85,4	91,6

3 Indicator tables

3.1 MFMA Circular No. 88 metro indicator data elements, 2022

Table 3.7: MFMA Circular No. 88 metro indicator data elements, 2022

Indicators	Metro							
	City of Cape Town	Buffalo City	Nelson Mandela Bay	Mangaung	eThekweni	Ekurhuleni	City of Johannesburg	City of Tshwane
EE1.1 (1) Number of households with access to electricity	1 290 552	204 177	354 424	283 336	1 135 400	1 214 224	1 737 180	1 120 820
EE1.1 (2) Total number of households in the municipality	1 358 704	253 060	369 663	297 798	1 274 171	1 413 513	2 190 308	1 284 211
ENV1.3 (1) Number of households experiencing noise pollution	212 936	80 066	13 533	93 149	158 382	204 398	643 121	161 974
ENV1.3 (2) Total number of households in the municipality	1 358 704	253 060	369 663	297 798	1 276 139	1 413 513	2 196 539	1 284 211
ENV3.1 (1) Number of households who have their refuse removed at least once a week.	1 216 781	171 228	316 531	180 392	1 057 645	1 233 126	1 848 125	974 077
ENV3.1 (2) Total number of households in the municipality	1 358 704	253 060	369 663	297 798	1 276 139	1 413 513	2 196 539	1 282 860
HS1.1 (1) Number of households residing in formal dwellings in the municipality	1 129 432	203 657	346 951	256 933	1 127 313	1 123 599	1 782 650	1 080 115
HS1.1 (2) Total number of households in the municipality	1 358 704	253 060	369 663	297 798	1 276 139	1 413 513	2 196 539	1 285 562
HS2.3 (1) Number of households in formal dwellings 'renting'	322 786	27 710	73 252	63 281	210 943	380 501	676 054	326 120
HS2.3 (2) Number of households residing in formal dwellings in the municipality	1 129 432	203 657	346 951	256 933	1 127 313	1 123 599	1 782 650	1 080 115

Table 9.7: MFMA Circular No. 88 metro indicator data elements, 2022 (Concluded)

Indicators	Metro							
	City of Cape Town	Buffalo City	Nelson Mandela Bay	Mangaung	eThekwini	Ekurhuleni	City of Johannesburg	City of Tshwane
WS2.1 (1) Number of households with the main source of drinking water piped (tap) water inside dwelling/institution	1 078 366	141 144	300 193	128 065	810 574	811 660	1 199 574	865 926
WS2.1 (2) Number of households with the main source of drinking water piped (tap) water inside yard	150 055	49 322	28 396	133 808	245 959	478 116	852 968	329 493
WS2.1 (3) Number of households with the main source of drinking water piped (tap) water on community stand: distance less than 200m from dwelling/institution	110 773	32 448	9 799	23 994	96 483	80 903	117 531	38 481
WS2.1 (4) Total number of households in the municipality	1 358 704	253 060	369 663	297 798	1 276 139	1 413 513	2 196 539	1 285 562
WS1.1 (1) Number of households using a flush toilet (connected to sewerage system)	1 287 500	184 560	353 290	199 542	933 620	1 232 994	1 925 034	1 031 546
WS1.1 (2) Number of households using a flush toilet (with septic tank)	1 449	12 885	1 755	7 595	51 687	10 200	24 876	28 872
WS1.1 (3) Number of households using a pit toilet with ventilation (VIP)	2 928	0	0	0	6 582	45 489	22 746	5 742
WS1.1 (4) Total number of households in the municipality	1 354 821	251 187	367 623	287 941	1 268 437	1 411 092	2 192 500	1 279 825
IC11a. (1) Number of learners travelling longer than 30 minutes to an educational institution	133 309	24 311	13 129	30 021	91 720	118 504	173 994	176 116
IC11a. (2) Total number of learners travelling to an educational institution	1 109 702	216 633	339 146	237 421	932 431	997 692	1 549 766	1 167 840
IC11b. (1) Number of workers travelling longer than 30 minutes to a place of work	525 383	46 455	16 151	52 249	387 391	476 906	735 877	513 010
IC11b. (2) Total number of workers travelling to a place of work	1 697 090	263 993	382 141	230 757	1 358 683	1 482 148	2 303 438	1 302 362
Total number of households in the municipality (estimate), 2022*	1 358 704	253 060	369 663	297 798	1 276 139	1 413 513	2 196 539	1 285 562
Total population of the municipality (estimates), 2022**	4 598 696	792 697	1 272 991	835 093	3 982 301	3 994 488	6 237 501	3 988 800

Table 3.6: Basic household and population data used for benchmarking the GHS 2022

Indicators	Metro								
	City of Cape Town	Buffalo City	Nelson Mandela Bay	Mangaung	eThekwini	Ekurhuleni	City of Johannesburg	City of Tshwane	All Metros
# of persons N ('000)	4 599	793	1 273	835	3 982	3 994	6 238	3 989	25 703
# of households N ('000)	1 359	253	370	298	1 276	1 414	2 197	1 286	8 451

4 Technical notes

4.1 Target population

The target population of the survey consists of all private households in all nine provinces of South Africa and residents in workers' hostels. The survey does not cover other collective living quarters such as students' hostels, old-age homes, hospitals, prisons and military barracks, and is therefore only representative of non-institutionalised and non-military persons or households in South Africa.

4.2 Sample design

The General Household Survey (GHS) uses the Master Sample frame which has been developed as a general-purpose household survey frame that can be used by all other Stats SA household surveys having design requirements that are reasonably compatible with the GHS. The GHS 2019 collection was based on the 2013 Master Sample. This Master Sample is based on information collected during the 2011 Census conducted by Stats SA. In preparation for Census 2011, the country was divided into 103 576 enumeration areas (EAs). The census EAs, together with the auxiliary information for the EAs, were used as the frame units or building blocks for the formation of primary sampling units (PSUs) for the Master Sample, since they covered the entire country and had other information that is crucial for stratification and creation of PSUs. There are 3 324 primary sampling units (PSUs) in the Master Sample with an expected sample of approximately 33 000 dwelling units (DUs). The number of PSUs in the current Master Sample (3 324) reflect an 8,0% increase in the size of the Master Sample compared to the previous (2008) Master Sample (which had 3 080 PSUs). The larger Master Sample of PSUs was selected to improve the precision (smaller coefficients of variation, known as CVs) of the GHS estimates.

The Master Sample is designed to be representative at provincial level and within provinces at metro/non-metro levels. Within the metros, the sample is further distributed by geographical type. The three geography types are Urban, Tribal and Farms. This implies, for example, that within a metropolitan area, the sample is representative of the different geography types that may exist within that metro.

The sample for the GHS is based on a stratified two-stage design with probability proportional to size (PPS) sampling of PSUs in the first stage, and sampling of dwelling units (DUs) with systematic sampling in the second stage.

4.3 Allocating sample sizes to strata¹

The randomised PPS systematic sampling method is described below. This procedure was applied independently within each design stratum.

Let N be the total # of PSUs in the stratum, and the # of PSUs to be selected from the stratum is denoted by n . Also, let x_i denote the size measure of the PSU i within the stratum, where $i = 1, 2, 3, \dots, N$. Then, the method for selecting the sample of n PSUs with the Randomised PPS systematic sampling method can be described as follows:

Step 1: Randomise the PSUs within the stratum

The list of N PSUs within the stratum can be randomised by generating uniform random between 0 and 1, and then by sorting the N PSUs in ascending or descending order of these random numbers. Once the PSUs have been randomised, we can generate permanent sequence #s for the PSUs.

¹ Source: Sample Selection and Rotation for the Redesigned South African Labour Force Survey by G. Hussain Choudhry, 2007.

Step 2: Define normalised measures of size for the PSUs

We denote by x_i the measure of size (MOS) of PSU i within the design stratum. Then, the

measure of size for the stratum is given by $X = \sum_{i=1}^N x_i$. We define the normalised size measure

p_i of PSU i as $p_i = x_i / X$; $i = 1, 2, 3, \dots, N$, where N is the total # of PSUs in the design

stratum. Then, p_i is the relative size of the PSU i in the stratum, and $\sum_{i=1}^N p_i = 1$ for all strata. It

should be noted that the value of $n \times p_i$, which is the selection probability of PSU i must be less than one.

Step 3: Obtain inverse sampling rates (ISRs)

Let R be the stratum inverse sampling rate (ISR). The stratum ISR is the same as the corresponding provincial ISR because of the proportional allocation within the province. It should also be noted that the proportional allocation within the province also results in a self-weighting design.

Then, the PSU inverse sampling rates (ISRs) are obtained as follows:

First, define N real #s $Z_i = n \times p_i \times R; i = 1, 2, 3, \dots, N$. It is easy to verify that $\sum_{i=1}^N Z_i = n \times R$

. Next, round the N real #s $Z_i; i = 1, 2, 3, \dots, N$ to integer values $R_i; i = 1, 2, 3, \dots, N$ such that

each R_i is as close as possible to the corresponding Z_i value and the R_i values add up to $n \times R$

within the stratum. In other words, the sum of the absolute differences between the R_i and the

corresponding Z_i values is minimised subject to the constraint that the R_i values add up to $n \times R$

within the stratum. Drew, Choudhry and Gray (1978) provide a simple algorithm to obtain the integer R_i values as follows:

Let " d " be the difference between the value $n \times R$ and the sum $S = \sum_{i=1}^N [Z_i]$, where $[\cdot]$ is the

integer function, then R_i values can be obtained by rounding up the " d " Z_i values with the

largest fraction parts, and by rounding down the remaining $(N - d)$ of them. It should be noted

that the integer sizes $R_i; i = 1, 2, 3, \dots, N$ are also the PSU inverse sampling rates (ISRs) for systematic sampling of dwelling units.

Step 4: Obtain cumulative ISR values

We denote by $C_i; i = 1, 2, 3, \dots, N$ the cumulative ISRs of the PSUs within the stratum. It should be noted that the PSUs within the stratum have been sorted according to the sequence numbers that were assigned after the randomisation. Then, the cumulative ISRs are defined as follows:

$$C_1 = R_1,$$

$$C_j = C_{(j-1)} + R_j; \quad j = 2, 3, \dots, N.$$

It should be noted that the value C_N will be equal to $n \times R$, which is also the total # of systematic samples of dwelling units that can be selected from the stratum.

Step 5: Generate an integer random # r between 1 and R , and compute n integers r_1, r_2, \dots, r_n as follows:

$$r_1 = r$$

$$r_2 = r_1 + R$$

$$r_3 = r_2 + R$$

.

.

$$r_i = r_{(i-1)} + R$$

.

.

$$r_n = r_{(n-1)} + R.$$

Step 6: Select n PSUs out of the N PSUs in the stratum with the labels (sequence numbers) number i_1, i_2, \dots, i_n such that:

$$C_{i_1-1} < r_1 \leq C_{i_1}$$

$$C_{i_2-1} < r_2 \leq C_{i_2}$$

.

.

$$C_{i_n-1} < r_n \leq C_{i_n}.$$

Then, the n PSUs with the labels i_1, i_2, \dots, i_n would get selected with probabilities proportional to size, and the selection probability of the PSU i will be given by $\frac{R_i}{R}$.

4.4 *Weighting*²

The sampling weights for the data collected from the sampled households were constructed so that the responses could be properly expanded to represent the entire civilian population of South Africa. The design weights, which are the inverse sampling rate (ISR) for the province, are assigned to each of the households in a province. These were adjusted for four factors: Informal PSUs, Growth PSUs, Sample Stabilisation, and Non-responding Units.

Mid-year population estimates produced by the Demographic Analysis division were used for benchmarking. The final survey weights were constructed using regression estimation to calibrate to national level population estimates cross-classified by 5-year age groups, gender and race, and provincial population estimates by broad age groups. The 5-year age groups are: 0–4, 5–9, 10–14, 15–19, 20–24, 25–29, 30–34, 35–39, 40–44, 45–49, 50–54, 55–59, 60–64, and 65 and over. The provincial level age groups are 0–14, 15–34, 35–64, and 65 years and over. The calibrated weights were constructed such that all persons in a household would have the same final weight.

The Statistics Canada software StatMx was used for constructing calibration weight. The population controls at national and provincial level were used for the cells defined by cross-classification of Age by Gender by Race. Records for which the age, population group or sex had item non-response could not be weighted and were therefore excluded from the dataset. No imputation was done to retain these records.

4.5 *Sampling and the interpretation of the data*

Caution must be exercised when interpreting the results of the GHS at low levels of disaggregation. The sample and reporting are based on the provincial boundaries as defined in census 2011. These new boundaries resulted in minor changes to the boundaries of some provinces, especially Gauteng, North West, Mpumalanga/Limpopo and Eastern and Western Cape. In previous reports the sample was based on the provincial boundaries as defined in 2001, and there will therefore be slight comparative differences in terms of provincial boundary definitions.

4.6 *Definitions of terms*

Term	Definition
Household	<p>A household is defined as a person, or group of persons, who occupy a common dwelling unit (or part of it) for at least four nights in a week on average during the past four weeks prior to the survey interview. Basically, they live together and share resources as a unit. Other explanatory phrases can be 'eating from the same pot' and 'cook and eat together'.</p> <p>Persons who occupy the same dwelling unit but do not share food or other essentials, are regarded as separate households. For example, people who share a dwelling unit, but buy food separately, and generally provide for themselves separately, are regarded as separate households within the same dwelling unit.</p> <p>Conversely, a household may occupy more than one structure, if persons on a plot, stand or yard eat together, but sleep in separate structures (e.g., a room at the back of the house for single young male members of a family), all these persons should be regarded as one household.</p>
Multiple households	<p>Multiple households occur when two or more households live in one sampled dwelling unit. If there are two or more households in the selected dwelling unit and they do not share resources, all households are to be interviewed. The whole dwelling unit has been given one chance of selection and all households located there were interviewed using separate questionnaires.</p>

² Source: Sampling and Weighting System for the Redesigned South African Labour Force Survey, by G. Hussain Choudhry, 2007

Term	Definition
<i>Household head/Acting household head</i>	<p>The head of the household is the person identified by the household as the head of that household and must (by definition of 'household') be a member of the household. If there is difficulty in identifying the head, the head must be selected in order of precedence as the person who:</p> <ul style="list-style-type: none"> • Owns the household accommodation, • Is responsible for the rent of the household accommodation, • Has the household accommodation as an allowance (entitlement), etc., • Has the household accommodation by virtue of some relationship to the owner, lessee, etc., who is not in the household, • Makes the most decisions in the household. <p>If two or more persons have equal claim to be head of the household, or if people state that they are joint heads or that the household has no head, then denote the eldest as the head.</p>
<i>Formal dwellings</i>	Include a house on a separate stand, a flat or apartment in a block of flats, a townhouse, a room in a backyard, and a room or flatlet on a shared property.
<i>Informal dwellings</i>	Refer to shacks or shanties in informal settlements or in backyards
<i>Piped water in dwelling or on site</i>	Includes piped water inside the household's own dwelling or in their yard, It excludes water from a neighbour's tap or a public tap that is not on site.
<i>Electricity for cooking, heating and/or lighting</i>	Refers to electricity from the public supplier.
<i>UN disability</i>	Concentrating and remembering are grouped together as one category. If an individual has 'Some difficulty' with two or more of the 6 categories then they are disabled. If an individual has 'A lot of difficulty' or is 'Unable to do' for one or more category they are classified as disabled.
<i>Severe disability</i>	If an individual has 'A lot of difficulty' or is 'Unable to do' for one or more category they are classified as severely disabled.
<i>Poor household</i>	Poor households have been defined households who spend less than R2 500 per month.
<i>Water of RDP standard or higher</i>	'Piped water in dwelling or in yard' and 'Water from a neighbour's tap or public/communal tap' are also included provided that the distance is less than 200 metres.
<i>Improved sanitation facility</i>	Flush toilet connected to a public sewerage system or septic tank or a pit latrine with ventilation pipe.

5 Specific departmental indicators and question linkages

Table 5.1: Agriculture

Indicator	Annual reporting level	Questions in the GHS	GHS relative to other sources	Definitions and/or formulas
Percentage of households involved in agricultural production activities	National and provincial	AGR_Agri	Main source	# of households option 1 in AGR_Agri/total # of households who responded*100
Percentage of households involved in different agricultural production sectors	National and provincial	AGR_AGRI_TYPE_LIVE- AGR_AGRI_TYPE_GAME	Main source	# of households for each option in AGR_AGRI_TYPE_LIVE- AGR_AGRI_TYPE_GAME/total # of households who responded *100
Percentage of households involved in different crop planting activities	National and provincial	AGR_PLANT	Main source	# of households for each option in AGR_PLANT/total # of households who responded *100
Percentage of households who produce crops on 1 or more hectares	National and provincial	AGR_LANDSIZE	Main source	# of households who produce crops option 3 to 7 in AGR_LANDSIZE/total # of households who responded *100
Percentage of households who own the land on which they produce crops	National and provincial	AGR_LANDTENURE	Main source	# of households who produce crops option 1 in AGR_LANDTENURE/total # of households who produce crops*100
Percentage of households who sell most of the agricultural produce they produce	National and provincial	AGR_Sell	Main source	# of households who chose option 1 in AGR_Sell/total # of households who are involve in agricultural production activities*100
Percentage of households classified as: Food access adequate Food access inadequate Food access severely inadequate	National and provincial	FSD_WORRIED– FSD_WHLDAY	Main source	Adequate: one or no 'Yes' responses for the first part of FSD_WORRIED– FSD_WHLDAY Inadequate: 2–3 'Yes' responses for any of FSD_WORRIED – FSD_WHLDAY Severely inadequate: 4–6 'Yes' responses for any of FSD_WORRIED – FSD_WHLDAY

Table 5.2: Education

Indicator	Annual reporting level	Questions in the GHS	GHS relative to other sources	Definitions and/or formulas
Age-specific Enrolment Ratio (ASER)	National Provincial UNESCO	EDU_GRD E, D	Main source	# (persons aged 7–13 attending educational institutions)/ # persons aged 7–13 * 100 # (persons aged 7–18 attending educational institutions)/ # persons aged 7–18 *100
Repetition rates (Grades 10–12)	National Provincial UNESCO	EDU_GRD E, EDU_SAM E	Validation Data confrontation	# who attend Grd 10 to Grd 12 and repeating /(# who attend Grd 10 to Grd 12)*100
Enrolment for 16–18-year-olds	National Provincial	EDU_GRD E, EDU_EDUI	Validation Data confrontation	# aged 16–18 who are enrolled in any institution # who attend any institution/(# 16–18 years old) *100
Percentage of children with special needs aged 7–15 not enrolled in educational institutions	National Provincial	EDU_ATT ND, EDU_RSN N	Main source	(# of persons aged 7-15 with disabilities ³ not enrolled)/#aged 7-15 yrs with disabilities)*100
Percentage of learners in public schools that do not pay school fees	National Provincial	EDU_TOT F EES	Validation Data confrontation	# persons attend public school who do not pay school fees/# of persons attending public schools*100
Percentage of learners in schools receiving social grants	National Provincial	EDU_EDUI , SOC_GRA NT SOC_GRA NT_TYPE	Main source Data confrontation	# persons attending school who receive any grant/# of persons who attend school and answered the question*100
Percentage of learners who walk for more than 30 minutes to the nearest school	National Provincial	EDU_MOD E_TR, EDU_NEA REST	Main source	# learners who walk for 30 minutes or more to attend the nearest school/ # of persons attending schools*100
Percentage of learners in public schools benefiting from free scholar transport	National Provincial	EDU_ATT ND, EDU_EDUI, EDU_MODE _TR	Validation source	# learners who chose option 6 in EDU_MODE_TR/ # of persons attending public schools*100
Percentage of learners in public ⁴ schools benefiting from the nutrition programme	National Provincial	EDU_EAT F OOD	Validation source	# persons options 2–4 in EDU_EATFOOD/# of persons attending Grd 0–Grd 12*100
% of reported incidents of corporal punishment	National Provincial	EDU_VLN C_EXP	Main source	# persons options 1 in EDU_VLNC_EXP/# of persons

³ Un definition of disabilities⁴ Question on public and private school

				attending school (option 2 in EDU_EDU)
Adult literacy rates	National Provincial	D,1,5	Validation source	# persons options with highest education less than Grd 7/# of persons 20 years and older

Table 5.3: Environmental affairs

Indicator	Annual reporting level	Questions in the GHS	GHS relative to other sources	Definitions and/or formulas
# of households using borehole water	National and provincial	WAT_DRINK WAT	Supply data towards its calculation	# of households options 3 and 9 for WAT_DRINKWAT
# of households using wood or coal for cooking	National and provincial	ENG_COOK	Main source	# households option 5, 6 for ENG_COOK
Percentage of households whose refuse or rubbish is removed by a local authority or private company	National and provincial	SWR_RUB	Main source	# of households options 1–4 in SWR_RUB/# of households who answered the question*100
Percentage of households who feel that they are experiencing pollution by categories	National and provincial	SWR_ENV Option 1	Main source	# of households who answered 'Yes' for selected options in SWR_ENV /# of households who answered the question*100

Table 5.4: Health

Indicator	Annual reporting level	Questions in the GHS	GHS relative to other sources	Definitions and/or formulas
% of orphans aged 7–18 years attending educational institutions	National and provincial	HHC_FATH_ALIVE, HHC_MOTH_ALIVE, EDU_EDUI, D	Main source	# of children aged 7–18 years who lost one or both of their biological parents attending school/ # of children aged 7–18 who lost one or both of their biological parents*100
% of people 20 years and older with no schooling	National and provincial	D, Education	Main source	# of persons 20 years and older with no schooling/# of persons 20 years and older*100
% of persons with medical aid coverage	National and provincial	HLT_MEDI	Main source	# of persons who responded 'Yes' in HLT_MEDI/# of persons who responded to the question*100
% of households for which the usual place of consultation is a public facility	National and provincial	HHW_HLTFAC	Descriptive/ interpretive One of the sources	# of persons who responded 'Yes' to options 1–3 in HHW_HLTFAC/# of persons who responded to the question*100

Table 5.5: Human settlement

Indicator	Annual reporting level	Questions in the GHS	GHS relative to other sources	Definitions and/or formulas
Percentage of households who live in an RDP or state subsidised house	National and provincial	HSG_RDP	Main source	# of households who replied 'Yes' in HSG_RDP/# of households who answered the question*100
Percentage of households receiving a housing subsidy from the state	National and provincial	HSG_SUBSIDY	Validation source	# of households whose response is 'Yes' in HSG_SUBSIDY/# of households who answered the question*100
Percentage of households who state that the condition of the walls of their state provided/ subsidised housing is weak/very weak	National and provincial	HSG_COND_WALL, HSG_SUBSIDY	Validation source	# of households with a 'Yes' answer in HSG_SUBSIDY and response 1–2 in HSG_COND_WALL/# of households 'Yes' in HSG_SUBSIDY
Percentage of households who state that the condition of the roof of their state provided/ subsidised housing is weak/very weak	National and provincial	HSG_COND_ROOF, HSG_SUBSIDY	Validation source	# of households 'Yes' in HSG_SUBSIDY and response 1–2 in HSG_COND_ROOF/# of households 'Yes' in HSG_SUBSIDY
Percentage of households who pay rent for a state provided/ RDP house,	National and provincial	HSG_TENURE, HSG_SUBSIDY	Main source	# of households 'Yes' in HSG_SUBSIDY and option 1 in HSG_TENURE/# of households 'Yes' in HSG_SUBSIDY
Percentage of households who fully own their dwellings	National and provincial	HSG_TENURE	Main source	# of households options 5 in HSG_TENURE/# of households who answered the question*100

Table 5.6: Social development

Indicator	Annual reporting level	Questions in the GHS	GHS relative to other sources	Definitions and/or formulas
% of persons 60 years and older that are disabled	National and provincial	D, DSB	Only source	# of persons aged 60 years and older who are disabled UN definition/# of persons who answered the question *100
% of persons 60 years and older that are severely disabled	National and provincial	D, DSB	Only source	# of persons aged 60 years and older who are severely disabled/# of persons who answered the question *100
% of people 60 years and older who received old-age grant	National and provincial	D, SOC_GRANT_TYPE	Only source	# of persons aged 60 years and older who received an old-age grant/# of persons who answered the question *100
% of people 60 years and older who received social grants	National and provincial	D, SOC_GRANT	Only source	# of persons aged 60 years and older who received a social grant/# of persons who answered the question *100
% of households with persons 60 years and older with: Food access adequate Food access inadequate Food access severely inadequate	National and provincial	D, FSD_WORRIED - FSD_WHLDAY	Descriptive/interpretive Validation	# of persons aged 60 years and older who answered 'Yes' to FSD_WORRIED - FSD_WHLDAY/# of persons who answered the question *100

Table 5.6: Social development (concluded)

Annual reporting level	Questions in the GHS	GHS relative to other sources	GHS relative to other sources	Definitions and/or formulas
# of households classified as: Food access adequate Food access inadequate Food access severely inadequate	National and provincial	FSD_WORRIED - FSD_WHLDAY	Inputs towards indicator calculation	# of households who answered 'Yes' to FSD_WORRIED - FSD_WHLDAY
# of households classified as poor using household monthly expenditure of below R2 500 as the cut-off	National and provincial	FIN_EXP	-	# of households whose total monthly expenditure is below R2 500
# of households classified as poor using household monthly expenditure of below R2 500 as the cut-off and who have children aged 7–18	National and provincial	FIN_EXP	-	# of households with children aged 7-18 and total monthly expenditure is below R2 500
% of poor households with children aged 7–18 who do not spend money on school fees	National and provincial	D, EDU_EDUI, FIN_EXP	Main source	# of households with children aged 7–18 and monthly expenditure below R2 500 who did not spend any money on school fees for at least one of their children/# of households that are poor and have children aged 7–18 years

Table 5.7: Transport

Indicator	Annual reporting level	Questions in the GHS	GHS relative to other sources	Definitions and/or formulas
# of passenger trips made per month with each public transport mode: Minibus/taxi Bus Train	National and provincial	TRA	Validation	Only calculated for household members who made trips using public transport
% of the household's income spent on transport per month: 1-10% 11-20% 21-30% 30% or more	National and provincial	TRA, FIN_INC	Main source	Only calculated for households with valid income and expenditure on transport data
% of learners travelling for longer than 30 minutes to an educational institution	National and provincial	EDU_TIME	Main source	Only calculated for individuals attending educational institutions who provided a response to the question on time taken, Missing values were excluded from the denominator
% of workers travelling for longer than 30 minutes to their place of work	National and provincial	LAB_MINS	Main source	Only calculated for individuals working and who provided a response to the question on time taken, Missing values were excluded from the denominator

Table 5.8: Water and sanitation

Indicator	Annual reporting level	Questions in the GHS	GHS relative to other sources	Definitions and/or formulas
# of households with water supply infrastructure of RDP standard or higher	National and provincial	WAT_DRINK WAT, WAT_DIST	Validation and data confrontation	On or above RDP is piped water in dwelling or yard or borehole in the yard (options 1,2&3) or tap less than 200 meters from yard (options 5,6&9) and option 1 WAT_DIST; all others are below,
# of households with no water supply infrastructure	National and provincial	WAT_DRINK WAT	Validation and data confrontation	'No water supply' is options 3, 4, 7-13,
# of consumers who experienced water supply interruptions of 48 hours or more at a time	National and provincial	WAT_INTE_ 2days	Validation and data confrontation	# of households option 'Yes' in WAT_INTE_2days/# of households who answered the question*100
# of consumers who have experienced a cumulative interruption of more than 15 days for the financial year	National and provincial	WAT_INTE_ 15DAYS	Supply data towards its calculation	# of households option 'Yes' in WAT_INTE_15DAYS/# of households who answered the question*100
Indicator	Annual reporting level	Questions in the GHS	GHS relative to other sources	Definitions and/or formulas
# of households with water supply infrastructure of RDP standard or higher	National and provincial	WAT_DRINK WAT, WAT_DIST	Validation and data confrontation	On or above RDP is piped water in dwelling or yard or borehole in the yard (options 1,2&3) or tap less than 200 meters from yard (options 5,6&9) and option 1 WAT_DIST; all others are below,

Table 5.8: Water and sanitation (concluded)

Indicator	Annual reporting level	Questions in the GHS	GHS relative to other sources	Definitions and/or formulas
# of households with access to a functioning basic sanitation facility (strategic framework)	National and provincial	SAN_TOIL – SAN_LOCAT ION	Main source	'Basic facility' is defined as options 1, 2 and 5 in SAN_TOIL
% households with access to a functioning basic sanitation facility (strategic framework)	National and provincial	SAN_TOIL – SAN_LOCAT ION	Main source	# of households with basic facilities/# of households*100
# of households with substandard toilet facility	National and provincial	SAN_TOIL – SAN_LOCAT ION	Main source	'Substandard' is defined as options 4, 6, 7, 8, 9,10 in SAN_TOIL
% of households with substandard toilet facility	National and provincial	SAN_TOIL – SAN_LOCAT ION	Main source	# of households with substandard facilities/# of households*100
# of households using bucket toilets	National and provincial	SAN_TOIL – SAN_LOCAT ION	Main source	# of households who chose option 7 and 8
# of households with no sanitation facility	National and provincial	SAN_TOIL	Main source	# of households who chose option 10
# of poor households receiving free basic sewerage and sanitation	National and provincial	SAN_TOIL – SAN_PAY	Supply data towards its calculation	Poor households are households who spend less than R2 500 per month
% of poor households receiving free basic sewerage and sanitation	National and provincial	SAN_TOIL – SAN_PAY	Supply data towards its calculation	# of poor households who are connected to the sewerage system and answered 'Yes' to SAN_PAY/# of households who answered the question*100

General information

Stats SA publishes approximately 300 different statistical releases each year. It is not economically viable to produce them in more than one of South Africa's eleven official languages. Since the releases are used extensively, not only locally but also by international economic and social-scientific communities, Stats SA releases are published in English only.

Stats SA has copyright on this publication. Users may apply the information as they wish, provided that they acknowledge Stats SA as the source of the basic data wherever they process, apply, utilize, publish or distribute the data; and also that they specify that the relevant application and analysis (where applicable) result from their own processing of the data.

Advance release calendar

An advance release calendar is disseminated on www.statssa.gov.za

Stats SA products

A complete set of Stats SA publications is available at the Stats SA Library and the following libraries:

National Library of South Africa, Pretoria Division
National Library of South Africa, Cape Town Division
Natal Society Library, Pietermaritzburg
Library of Parliament, Cape Town
Bloemfontein Public Library
Johannesburg Public Library
Eastern Cape Library Services, King William's Town
Central Regional Library, Polokwane
Central Reference Library, Mbombela
Central Reference Collection, Kimberley
Central Reference Library, Mmabatho

Stats SA also provides a subscription service.

Electronic services

A large range of data is available via online services. For more detail about our electronic services, contact Stats SA's user information service at (012) 310 8600.

You can visit us on the Internet at: www.statssa.gov.za

Technical enquires

Niel Roux Telephone number: (012) 310 2939
Email address: NielR@statssa.gov.za

General enquiries

User information services Telephone number: (012) 310 8600
Email address: info@statssa.gov.za

Postal address Private Bag X44, Pretoria, 0001

Produced by Stats SA