

STATISTICAL RELEASE

P0318.2

General Household Survey, Selected development indicators, 2016

Embargoed until:
31 May 2017
12:00

Enquiries:
User information Services
Tel.: (012) 310 8600/4892/8390

Forthcoming issue:
GHS 2017

Expected release date
May 2018

www.statssa.gov.za
info@statssa.gov.za
T +27 12 310 8911
F +27 12 310 8500

Private Bag X44, Pretoria, 0001, South Africa
ISibalo House, Koch Street, Salvokop, Pretoria, 0002

Published by Statistics South Africa, Private Bag X44, Pretoria 0001

© Statistics South Africa, 2017

Users may apply or process this data, provided Statistics South Africa (Stats SA) is acknowledged as the original source of the data; that it is specified that the application and/or analysis is the result of the user's independent processing of the data; and that neither the basic data nor any reprocessed version or application thereof may be sold or offered for sale in any form whatsoever without prior permission from Stats SA.

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

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

This publication is available both in hard copy and on the Stats SA website www.statssa.gov.za.

In addition, the data and metadata set from the *General Household Survey, 2016* will be available on CD-ROM. A charge may be made according to the pricing policy, which can be seen on the website.

For technical enquiries please contact:

Casment Mahlwele

Email: casmentm@statssa.gov.za

Contents

1. Introduction and methodology	1
1.1 Background	1
1.2 Methodology and fieldwork	1
2. Indicator tables	2
2.1 Agriculture	2
2.2 Education	4
2.3 Environmental indicators	6
2.4 Health	7
2.5 Human settlement	8
2.6 Social development	9
2.7 Transport	10
2.8 Water and sanitation	11
3. Technical notes	13
3.1 Target population	13
3.2 Sample design	13
3.3 Allocating sample sizes to strata	13
3.4 Weighting	16
3.5 Sampling and the interpretation of the data	16
3.6 Definitions of terms	16
3.7 Specific departmental indicators and question linkages	18

List of abbreviations

EC	Eastern Cape
FS	Free State
GP	Gauteng
KZN	KwaZulu-Natal
LP	Limpopo
MP	Mpumalanga
NC	Northern Cape
NW	North West
WC	Western Cape
RSA	South Africa

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.

It was therefore decided to develop a new GHS release specifically aimed at reporting on the various development indicators measured and/or verified by means of this particular survey instrument. The first report was released in early May 2010 as a discussion document. The current report is the seventh in the series and summarises the data for each province and the country as a whole as measured by GHS 2016.

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 21 218 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 assessors 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 2016 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.

Pali Lehohla
Statistician-General

2. Indicator tables

2.1 Agriculture

Table 2.1: Agriculture indicators by province

Indicators	Province									
	WC	EC	NC	FS	KZN	NW	GP	MP	LP	RSA
% of households who engaged in agricultural activities during the past 12 months	3,2	29,4	10,4	15,2	18,2	9,4	3,7	23,6	38,3	14,8
Livestock production	0,2	17,2	5,5	1,6	9,0	5,2	0,3	4,9	9,6	5,3
Poultry production	0,1	18,0	2,2	1,6	8,4	4,6	0,2	5,8	6,2	4,9
Grains and food crops	0,1	15,5	0,5	0,9	9,2	0,4	0,2	12,1	25,9	6,8
Industrial crops	0,0	0,1	0,0	0,1	0,3	0,0	0,0	0,0	0,2	0,1
Fruit and vegetable production	3,0	12,8	4,1	12,8	4,4	1,9	3,3	16,2	21	7,5
Fodder, grazing/pasture or grass for animals	0,0	0,3	0,1	1,0	0,1	0,1	0,1	0,3	1,0	0,3
Fish farming/aquaculture	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,1	0,1	0,0
Forestry	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Other	0,0	0,2	0,0	0,0	0,0	0,0	0,1	0,0	0,1	0,1

Table 2.1: Agriculture indicators by province (concluded)

Indicators	Province									
	WC	EC	NC	FS	KZN	NW	GP	MP	LP	RSA
% of households involved in different crop planting activities:										
Farm land (communal or private)	0,2	1,4	0,7	0,7	2,1	0,3	0,3	1,4	2,3	1,0
Backyard garden	2,7	19,7	4,0	13,3	10,1	1,9	3,0	18,5	30,7	10,3
School garden	0,0	0,1	0,0	0,0	0,1	0,0	0,0	0,1	0,4	0,1
Communal garden	0,0	0,0	0,0	0,0	0,3	0,0	0,0	0,3	0,1	0,1
On verges of roads and unused public/ municipal land	0,0	0,0	0,0	0,1	0,0	0,0	0,1	0,0	0,3	0,1
Other	0,0	0,0	0,0	0,1	0,0	0,0	0,0	0,0	0,1	0,0
% of households who produce crops on 1 or more hectares	0,2	0,4	0,1	0,2	0,6	0,3	0,1	0,3	0,9	0,3
% of households who own the land on which they produce crops	83,3	28,1	86,6	88,7	48,5	89,3	84,3	95,8	64,2	62,7
% of households who sell most of the agricultural produce they produce	11,8	5,7	29,7	10,1	8,5	29,6	6,9	10,4	7,6	9,3
% of households involved in agriculture who received support from DOA during the past 12 months	5,7	21,8	21,1	4,1	16,1	11,2	4,2	8,2	3,3	11,2
% of households classified as:										
Food access adequate	78,3	74,1	68,2	77,7	76,6	63,9	83,4	69,7	92,5	78,4
Food access inadequate	16,2	20,4	19,8	17,2	18,6	26,4	13,2	20,4	5,9	16,4
Food access severely inadequate	5,6	5,5	12,0	5,1	4,8	9,7	3,5	10,0	1,6	5,2

2.2 Education

Table 2.2: Education indicators by Province

Indicators	Province									
	WC	EC	NC	FS	KZN	NW	GP	MP	LP	RSA
Age-specific Enrolment Ratio (ASER)										
Primary School	99,2	99,0	98,9	98,5	98,8	98,3	99,7	99,7	99,5	99,2
All	92,6	94,3	92,5	96,1	95,2	94,6	96,5	96,1	97,7	95,4
Repetition rate (RR) Grd 10	12,3	22,3	26,2	28,4	17,5	38,3	16,2	27,2	33,3	23,5
Repetition rate (RR) Grd 11	16,2	13,0	17,2	17,2	18,9	20,9	13,3	25,8	24,8	18,2
Repetition rate (RR) Grd 12	9,1	9,4	6,9	3,1	4,3	14,7	8,6	11,1	9,0	8,0
% of 16-18-year-olds who attend any institution	76,7	83,6	70,2	87,0	84,1	84,2	85,3	87,9	94,6	85,1
% of children with special needs aged 7–15 NOT enrolled in educational institutions	10,8	10,1	13,1	20,2	10,1	9,6	5,3	17,8	5,8	9,1
% of learners in public schools that do not pay school fees	46,3	79,2	65,8	75,7	66,4	69,5	53,2	66,6	94,3	68,9
% of learners in schools receiving social grants	46,7	69,3	66,8	61,2	67,8	62,5	39,3	63,3	61,9	59,0
Numbers of learners enrolled (16–18) in any institution N ('000)	238	387	41	146	565	169	523	213	394	2 675

Table 2.2: Education indicators by Province (concluded)

Indicators	WC	EC	NC	FS	KZN	NW	GP	MP	LP	RSA
% of learners in schools who walk for more than 30 minutes to the nearest school of its kind	3,6	11,8	4,7	6,7	22,3	12,0	4,2	9,5	11,3	12,1
% of learners in public schools benefiting from free scholar transport	4,5	4,5	3,5	1,6	1,0	1,5	2,5	4,5	1,2	2,5
% of learners in public schools benefiting from the nutrition programme	53,9	90,0	82,4	81,2	82,3	81,6	52,7	85,8	92,5	77,6
% of learners attending school who reported incidents of corporal punishment	1,8	17,9	9,9	13,3	15,0	11,6	1,8	6,0	8,7	9,8
Adult literacy rates (persons 20 years and older with less than Grade 7 as highest level of education)	9,1	20,6	21,8	17,2	18,0	19,6	8,0	17,4	20,3	14,8

2.3 Environmental indicators

Table 2.3: Environmental related indicators by Province

Indicators	Province									
	WC	EC	NC	FS	KZN	NW	GP	MP	LP	RSA
Number of households using borehole water N ('000)	10	8	10	27	89	77	36	77	238	573
Number of households using wood/coal for cooking N ('000)	16	189	18	36	413	68	39	233	573	1 583
% of households whose refuse is removed by a local authority or co,	89,5	45,9	68,8	79,6	52,2	62,1	91,6	41,6	23,5	66,5
% of households who feel that they are experiencing problem with:										
Littering	24,2	28,4	40,0	46,9	38,9	31,0	30,0	54,4	27,2	33,5
Water pollution	10,4	14,3	16,3	19,3	21,1	14,5	12,6	13,7	9,5	14,4
Air pollution	11,3	13,7	24,5	24,1	18,5	29,6	18,6	30,0	14,5	19,0
Land degradation	10,8	38,7	27,8	48,4	26,2	51,5	19,9	64,3	32,4	30,6
Excessive noise pollution	13,9	14,2	15,7	22,8	13,0	18,2	16,8	13,3	17,7	15,8
% of households who have used during past 12 months:										
Pesticides in dwelling	31,2	55,2	45,5	31,0	45,1	55,6	53,2	48,8	42,4	47,0
Pesticides in garden	12,8	15,9	8,5	5,4	6,4	7,6	17,2	10,4	10,0	11,6
Herbicides/weed killers	9,8	5,5	4,0	2,8	3,1	5,1	11,6	7,1	3,4	6,8

2.4 Health**Table 2.4: Health Indicators by Province**

Indicators	Province									
	WC	EC	NC	FS	KZN	NW	GP	MP	LP	RSA
% of orphans aged 7–18 years attending educational institutions	84,6	91,0	86,7	94,5	92,8	91,3	92,8	94,9	96,6	92,5
% of people 20 years and older with no schooling	1,5	5,9	7,9	4,0	6,4	6,8	2,1	8,0	9,3	4,9
% of persons with medical aid coverage	24,7	9,6	15,4	16,7	11,9	15,4	27,6	14,3	9,0	17,4
% of households for which the usual place of consultation is a public facility	53,4	82,7	74,9	67,1	81,0	75,0	63,4	77,3	85,8	71,8

2.5 Human settlement

Table 2.5: Human Settlement indicators by Province

Indicators	Province									
	WC	EC	NC	FS	KZN	NW	GP	MP	LP	RSA
% of households who live in an RDP or state-subsidised house	19,6	15,1	20,0	24,9	15,0	20,2	15,0	15,1	16,4	16,7
% of households receiving a housing subsidy from the state	14,1	11,1	16,0	20,5	12,4	18,4	12,1	14,0	12,8	13,5
% of households living in informal dwellings/tents/caravans	18,3	7,0	13,9	16,5	8,2	20,8	19,9	9,1	5,3	14,0
% of households who state that the condition of the walls of their state provided/subsidised housing is weak/very weak	18,1	15,1	10,7	15,6	8,5	7,8	8,6	9,8	5,1	10,7
% of households who state that the condition of the roof of their state provided/subsidised housing is weak/very weak	18,4	13,7	12,8	15,5	9,9	5,1	7,4	10,6	4,6	10,4
% of households who pay rent for a state provided/RDP house	12,2	13,6	5,4	8,4	7,9	7,3	12,4	4,1	11,5	10,2
% of households who fully own their dwellings	46,9	61,1	59,4	49,5	60,8	65,1	35,7	65,3	73,9	53,3

2.6 Social development

Table 2.6: Social development indicators by Province

Indicators	Province									
	WC	EC	NC	FS	KZN	NW	GP	MP	LP	RSA
Number of persons 60 years and older N('000)	619	598	113	253	843	321	1 132	298	430	4 607
Number of households with at least one person 60 years and older N ('000)	436	485	87	215	694	269	868	251	372	3 675
% of persons 60 years and older who are disabled (UN definition)	12,3	16,0	25,7	22,5	19,9	23,6	16,0	20,1	11,9	17,2
% of persons 60 years and older who are severely disabled	9,4	8,2	19,0	11,3	11,1	16,5	9,0	11,9	7,5	10,3
% of people 60 years and older who received old-age grant	50,7	83,5	80,2	73,3	77,1	77,7	55,3	75,4	89,4	70,0
% of people 60 years and older who received social grants	50,6	83,5	80,0	74,0	77,3	77,2	54,8	75,6	87,8	69,7
% of households with persons 60 years and older and classified as:										
Food access adequate	86,1	76,7	65,5	83,4	75,2	67,6	84,5	68,8	92,4	79,9
Food access inadequate	8,0	19,6	21,5	13,6	20,7	23,2	12,4	21,9	6,4	15,5
Food access severely inadequate	5,9	3,8	13,0	3,0	4,2	9,2	3,1	9,3	1,2	4,6
Number of households classified as N ('000):										
Food access adequate	1 423	1 294	218	709	2 152	796	4 038	865	1 452	12 948
Food access inadequate	271	361	69	166	515	320	653	249	100	2 704
Food access severely inadequate	137	104	42	54	164	140	196	142	31	1 010
% of poor households with children aged 7–18 who do not spend money on school fees	59,2	84,2	70,3	86,1	77,7	74,0	71,8	72,9	95,2	79,7
Number of households classified as poor using household monthly expenditure of below R2 500 as the cut-off N ('000)	400	1 064	160	504	1 514	664	1 718	750	1 190	7 965
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)	150	492	70	238	673	260	528	355	607	3 372

2.7 Transport

Table 2.7: Transport indicators by Province

Indicators	Province									
	WC	EC	NC	FS	KZN	NW	GP	MP	LP	RSA
# of passenger trips made per month with each public transport mode N ('000):										
Minibus/taxi	4 685	4 402	645	2 653	10 462	3 222	23 066	3 400	3 114	55 648
Bus	2 136	561	140	616	1 552	809	2 496	2 369	771	11 452
Train	2 075	174	21	55	786	160	3 364	81	203	6 919
% of the household's income spent on transport per month:										
1–10%	61,1	55,2	66,2	57,6	37,9	54,9	46,1	56,1	52,4	50,1
11–20%	21,7	26,1	21,8	22,1	28,2	23,3	24,0	21,1	21,6	24,0
21–30%	6,5	7,9	3,3	9,5	11,6	7,9	9,8	8,8	9,9	9,2
30% or more	10,7	10,9	8,7	10,8	22,4	13,9	20,0	14,0	16,2	16,7
% of learners travelling for longer than 30 minutes to an education institution	13,2	16,5	10,9	13,4	24,5	14,9	19,0	13,4	15,0	17,6
% of workers travelling for longer than 30 minutes to their place of work	33,8	19,8	14,8	21,2	31,1	30,3	45,8	34,0	31,2	34,7

2.8 Water and sanitation

Table 2.8: Water and sanitation variables by Province

Indicators	Province									
	WC	EC	NC	FS	KZN	NW	GP	MP	LP	RSA
Number of households with water supply infrastructure of RDP standard or higher N ('000)	1 755	1 203	311	874	2 070	1 036	4 722	1 064	1 078	14 113
Number of households with water supply infrastructure less than RDP standard N ('000)	76	556	18	55	761	220	166	192	505	2 549
Number of households with no water supply infrastructure N ('000)	24	427	13	65	473	166	120	185	393	1 867
Consumer perception index of water quality N ('000)										
Safe to drink	1 798	1 480	298	809	2 561	1 145	4 724	1 069	1 531	15 414
Clear	1 781	1 540	293	773	2 561	1 119	4 733	1 076	1 519	15 395
Good in taste	1 773	1 463	292	809	2 552	1 112	4 716	1 056	1 456	15 228
Free from bad smells	1 772	1 591	297	782	2 557	1 138	4 714	1 103	1 478	15 433
Number of consumers who experienced interruptions of 48 hours or more at a time N ('000)	42	493	94	245	832	399	337	585	698	3 724
Number of WSAs whose consumers have experienced a cumulative interruption of more than 15 days for the financial year N ('000)	25	368	63	205	573	340	156	483	523	2 735

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

Indicators	Province									
	WC	EC	NC	FS	KZN	NW	GP	MP	LP	RSA
Number of households with access to a functioning basic sanitation facility (strategic framework) N ('000)	1 725	1 490	271	766	2 168	860	4 415	845	902	13 441
% households with access to improved sanitation facilities	94,3	84,8	82,4	82,8	76,9	68,7	90,7	67,4	57,1	80,9
Number of households using bucket toilets N ('000)	75	16	4	23	6	5	77	0	4	210
Number of households with substandard toilet facility N ('000)	90	165	42	127	530	344	402	350	601	2 651
% of households with substandard toilet facility	5,0	10,0	13,5	14,2	19,6	28,6	8,4	29,3	40,0	16,5
Number of households with no sanitation facility N ('000)	13	98	15	27	110	48	33	59	77	482
Number of poor households receiving free basic sewerage and sanitation N ('000)	175	181	50	214	208	119	741	74	73	1 837
% of poor households receiving free basic sewerage and sanitation	55,2	65,4	57,3	67,0	58,5	60,8	61,5	43,9	52,6	59,9

Table 2.9: Basic household and population data used for benchmarking the GHS 2016

Indicators	Province									
	WC	EC	NC	FS	KZN	NW	GP	MP	LP	RSA
# of persons N ('000)	6 362	6 731	1 192	2 769	10 807	3 758	13 543	4 290	5 724	55 177
# of households N ('000)	1 831	1 759	329	929	2 831	1 256	4 888	1 256	1 583	16 662

3. Technical notes

3.1 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.

3.2 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 2016 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.

3.3 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 R_i / R .

3.4 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.

3.5 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.

3.6 Definitions of terms

Household

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'.

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.

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.

Multiple households

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.

Household head/Acting household head

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

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:

- 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.

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.

Formal dwellings

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.

Informal dwellings

Refer to shacks or shanties in informal settlements or in backyards.

Piped water in dwelling or on site

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.

Electricity for cooking, heating and/or lighting

Refers to electricity from the public supplier.

UN disability

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.

Severe disability

If an individual has 'A lot of difficulty' or is 'Unable to do' for one or more category they are classified as severely disabled.

Poor household

Poor households have been defined households who spend less than R2 500 per month.

Water of RDP standard or higher

'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.

Improved sanitation facility

Flush toilet connected to a public sewerage system or septic tank or a pit latrine with ventilation pipe.

3.7 Specific departmental indicators and question linkages

Table 3.1: 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	8,1	Main source	# of households option 1 in Q8,1/total # of households who responded*100
Percentage of households involved in different agricultural production sectors	National and provincial	8,3	Main source	# of households for each option in Q8,3/total # of households who responded *100
Percentage of households involved in different crop planting activities	National and provincial	8,8a	Main source	# of households for each option in Q8,8a/total # of households who responded *100
Percentage of households who produce crops on 1 or more hectares	National and provincial	8,8b	Main source	# of households who produce crops option 3 to 7 in Q8,8b/total # of households who responded *100
Percentage of households who own the land on which they produce crops	National and provincial	8,8c	Main source	# of households who produce crops option 1 in Q8,8c/total # of households who produce crops*100
Percentage of households who sell most of the agricultural produce they produce	National and provincial	8,5a	Main source	# of households who chose option 1 in Q8,5a/total # of households who are involve in agricultural production activities*100
Percentage of households involved in agriculture who received support from government during the past 12 months	National and provincial	8,6a	Main source	# of households who chose option 1 in Q8,6a/total # of households who produce crops*100
Percentage of households classified as: Food access adequate Food access inadequate Food access severely inadequate	National and provincial	7,9–7,12	Main source	Adequate: one or no 'Yes' responses for the first part of Q7,9–Q7,12 Inadequate: 2–3 'Yes' responses for any of Q7,9–Q7,12 Severely inadequate: 4–6 'Yes' responses for any of Q7,9–Q7,12

Table 3.2: 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	1,20, D	Main source	# (persons aged 7–13 attending educational institutions)/ # persons aged 7–13 # (persons aged 7–18 attending educational institutions)/ # persons aged 7–18
Repetition rates (Grades 10–12)	National Provincial UNESCO	1,20, 1,21	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	1,20, 1,12	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	1,10, 1,11	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	1,16	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	1,13, 3,1a 3,1b	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	1,15a, 1,15c	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	1,10,1,12,1,1 5a	Validation source	# learners who chose option 6 in Q1,15a/ # of persons attending public schools*100
Percentage of learners in public ⁴ schools benefiting from the nutrition programme	National Provincial	1,22b	Validation source	# persons options 2–4 in Q1,22b/# of persons attending Grd 0–Grd 12*100
% of reported incidents of corporal punishment	National Provincial	1,23b	Main source	# persons options 1 in Q1,23b/# of persons attending school (option 2 in Q1,12)
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

³ Un definition of disabilities⁴ Question on public and private school

Table 3.3: 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	5,12	Supply data towards its calculation	# of households options 3 and 8 for Q5,12
# of households using wood or coal for cooking	National and provincial	5,31	Main source	# households option 5, 6 for Q5,31
Percentage of households whose refuse or rubbish is removed by a local authority or private company	National and provincial	5,32	Main source	# of households options 1–4 in Q5,32/# of households who answered the question*100
Percentage of households who feel that they are experiencing pollution by categories	National and provincial	5,36 Option 1	Main source	# of households who answered 'Yes' for selected options in Q5,36/# of households who answered the question*100
Percentage of households who have used pesticides and herbicides in and around their dwellings during the past twelve months	National and provincial	5,37	Main source	# of households to which the question applies who answered 'Yes' in Q5,37/# of households who answered the question*100

Table 3.4: 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	1,3a, 1,4a, 1,12, 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, 1,5	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	2,1	Main source	# of persons who responded 'Yes' in Q2,1/# of persons who responded to the question*100
% of households for which the usual place of consultation is a public facility	National and provincial	7,1	Descriptive/ interpretive One of the sources	# of persons who responded 'Yes' to options 1–3 in Q7,1/# of persons who responded to the question*100

Table 3.5: 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	5,10a	Main source	# of households who replied 'Yes' in Q5,10a /# of households who answered the question*100
Percentage of households receiving a housing subsidy from the state	National and provincial	5,11	Validation source	# of households whose response is 'Yes' in Q5,11/# 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	5,4, 5,10a	Validation source	# of households with a 'Yes' answer in Q5,10a and response 1–2 in Q5,4/# of households 'Yes' in Q5,10a
Percentage of households who state that the condition of the roof of their state provided/ subsidised housing is weak/very weak	National and provincial	5,4, 5,10a	Validation source	# of households 'Yes' in Q5,10a and response 1–2 in Q5,4/# of households 'Yes' in Q5,10a
Percentage of households who pay rent for a state provided/ RDP house,	National and provincial	5,6, 5,10a	Main source	# of households 'Yes' in Q5,10 and option 1 in Q5,6/# of households 'Yes' in Q5,10
Percentage of households who fully own their dwellings	National and provincial	5,6	Main source	# of households options 5 in Q5,6/# of households who answered the question*100

Table 3.6: 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, 2,9	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, 2,9	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, 3,1b	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, 3,1a	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, 7,9, 7,10, 7,11 and 7,12	Descriptive/interpretive Validation	# of persons aged 60 years and older who answered 'Yes' to 7,9,7,10,7,11 and 7,12/# of persons who answered the question *100

Table 3.6: 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	7,9–7,12	Inputs towards indicator calculation	# of households who answered 'Yes' to 7,9,7,10,7,11 and 7,12
# of households classified as poor using household monthly expenditure of below R2 500 as the cut-off	National and provincial	8,14	-	# 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	8,14	-	# 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, 1,15, 8,14	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 3.7: 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	6,8	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	6,8–6,10, 8,9a	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	1,15b	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	4,4b	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 3.8: 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	5,12, 5,13a	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&8) and option 1 Q5,13a; all others are below,
# of households with water supply infrastructure less than RDP standard	National and provincial	5,12, 5,13a	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&8) and option 1 Q5,14; all others are below,
# of households with no water supply infrastructure	National and provincial	5,12	Validation and data confrontation	'No water supply' is options 3, 4, 7–13,
Consumer perception index of water quality: # Safe to drink # Clear # Good in taste # Free from bad smells	National and provincial	5,14	Validation and data confrontation	# of households option 'Yes' in Q5,14/# of households who answered the question*100
# of consumers who experienced water supply interruptions of 48 hours or more at a time	National and provincial	5,20	Validation and data confrontation	# of households option 'Yes' in Q5,20/# 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	5,21	Supply data towards its calculation	# of households option 'Yes' in Q5,21/# of households who answered the question*100

Table 3.8: 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	5,22–5,25a	Main source	'Basic facility' is defined as options 1, 2, and 4 Q5,22
% households with access to a functioning basic sanitation facility (strategic framework)	National and provincial	5,22–5,25a	Main source	# of households with basic facilities/# of households*100
# of households with substandard toilet facility	National and provincial	5,22–5,25a	Main source	'Substandard' is defined as options 3, 5, 6, 7, 8 in Q5,22
% of households with substandard toilet facility	National and provincial	5,22–5,25a	Main source	# of households with substandard facilities/# of households*100
# of households using bucket toilets	National and provincial	5,22, 5,25a	Main source	# of households who chose option 7 (none)
# of households with no sanitation facility	National and provincial	5,22	Main source	# of households who chose option 6 (bucket toilet)
# of poor households receiving free basic sewerage and sanitation	National and provincial	5,22–5,23	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	5,22 and 5,23	Supply data towards its calculation	# of poor households who are connected to the sewerage system and answered 'Yes' to 5,23/# of households who answered the question*100