Selected development indicators

2013

General Household Survey, 2013

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List of abbreviations

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

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 fourth in the series and summarises the data for each province and the country as a whole as measured by GHS 2013.

1.2   Methodology and fieldwork

A multi-stage, stratified random sample was drawn using probability-proportional-to-size principles. First-level stratification was based on province and second-tier stratification on district council. Field staff 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 31 486 sampled households was visited across the country and 25 786 (including multiple households) were successfully interviewed during face-to-face interviews.

Two hundred and thirty-three enumerators (233) and 62 supervisors and coordinators participated in the survey across all nine provinces. An additional 46 quality assurors were responsible for monitoring and ensuring questionnaire quality. National training took place over a period of four days and provincial training was done one week later in 9 provinces for 5 days. Thereafter district training was executed in 40 localities for a period of six days.

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 2013 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.

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Statistician-General: Statistics South Africa

2. Indicator tables

2.1 *Agriculture*

Table 2.1: Agriculture

Indicators	WC	EC	NC	FS	KZN	NW	GP	MP	LP	RSA
% of households who engaged in agricultural activities during the past 12 months	2,8	35,3	24,5	11,7	20,6	15,2	4,1	31,2	46,6	18,9
% of households involved in:										
1 = Livestock production	0,5	28,6	7,6	4,4	15,8	11,0	1,2	10,1	15,5	9,7
2 = Poultry production	0,1	25,9	3,3	4,4	12,5	7,5	0,3	9,7	10,5	7,7
3 = Grains and food crops	0,1	21,5	0,4	3,8	13,5	2,0	0,4	16,9	35,0	9,8
4 = Industrial crops	0,0	0,1	0,3	0,0	0,4	0,0	0,0	0,1	0,2	0,1
5 = Fruit and vegetable production	2,3	14,5	4,0	17,5	7,9	4,5	2,7	20,0	17,4	8,5
6 = Fodder, grazing/pasture or grass for animals	0,1	0,2	0,1	0,4	0,4	0,2	0,0	0,2	0,4	0,2
7 = Fish farming/aquaculture	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
8 = Forestry	0,0	0,0	0,0	0,0	0,1	0,0	0,0	0,0	0,0	0,0
9 = Game farming	0,0	0,0	0,0	0,0	0,0	0,1	0,0	0,0	0,0	0,0
10 = Other	0,0	0,1	0,1	0,0	0,1	0,0	0,1	0,0	0,1	0,1

Table 2.1: Agriculture (concluded)

Indicators	WC	EC	NC	FS	KZN	NW	GP	MP	LP	RSA
% of households involved in different crop planting activities:										
1 = Farm land (communal or private)	0,2	2,2	0,6	0,6	6,6	0,4	0,1	2,8	3,3	2,0
2 = Backyard garden	2,2	25,6	3,7	17,3	11,8	4,9	2,7	23,3	37,6	12,6
3 = School garden	0,0	0,2	0,1	0,2	0,0	0,0	0,0	0,3	0,2	0,1
4 = Communal garden	0,0	0,1	0,0	0,0	0,9	0,0	0,0	0,8	0,5	0,3
5 = On verges of roads and unused public/ municipal land	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,1	0,0	0,0
6 = Other	0,0	0,0	0,0	0,0	0,0	0,1	0,0	0,0	0,0	0,0
% of households who produce crops on 1 or more hectares	0,1	0,7	0,5	0,1	1,3	0,2	0,1	0,6	0,7	0,5
% of households who own the land on which they produce crops	93,7	32,2	92,5	96,4	65,5	90,6	91,6	92,1	84,1	71,9
% of households who sell most of the agricultural produce they produce	13,4	8,4	35,4	8,5	6,1	17,6	6,9	6,1	5,5	7,8
% of households involved in agriculture who received support from DOA during the past 12 months	5,4	28,6	14,0	5,2	27,6	7,8	3,7	7,3	2,1	14,7
% of households classified as:										
Food access adequate	77,3	71,4	70,1	74,7	76,2	63,9	83,2	71,2	92,1	77,8
Food access inadequate	16,1	22,8	21,5	20,9	20,4	22,8	12,8	21,9	6,6	17,0
Food access severely inadequate	6,6	5,8	8,5	4,5	3,5	13,2	4,0	6,9	1,4	5,2

2.2 *Education*

Table 2.2: Education

Indicators	WC	EC	NC	FS	KZN	NW	GP	MP	LP	RSA
Age-specific Enrolment Ratio (ASER)										
Primary	1,0	0,9	0,7	1,3	1,0	0,8	0,3	0,6	0,5	0,7
All	6,5	5,6	5,1	4,7	4,0	5,3	4,1	4,7	2,2	4,5
Repetition rate (RR) Grd 10	9,4	22,8	17,9	29,4	19,8	37,6	21,1	24,0	35,1	24,4
Repetition rate (RR) Grd 11	13,9	20,1	21,8	22,5	21,3	28,8	12,3	31,7	26,2	21,1
Repetition rate (RR) Grd 12	5,4	11,0	3,4	7,8	3,6	24,3	5,6	13,9	16,4	9,0
#s Enrolled (16–18) in any institution N ('000)	222	410	55	134	578	173	478	222	405	2678
% of 16-18-year-olds who attend any institution	78,6	84,4	82,7	86,4	87,8	84,5	85,0	84,4	94,5	86,2
% of children with special needs aged 7–15 NOT enrolled in educational institutions	4,4	9,9	9,3	8,9	8,4	2,3	3,2	7,9	13,3	7,5
% of learners in public schools that do not pay school fees	31,8	83,6	56,7	75,1	62,7	65,9	45,1	68,1	94,0	65,7
% of learners in schools receiving social grants	43,1	67,4	62,1	61,6	66,2	64,1	41,0	63,9	62,3	58,6

Table 2.2: Education (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	2,2	18,3	8,7	8,0	25,4	12,0	6,9	9,0	12,2	14,5
% of learners in public schools benefiting from free scholar transport	4,0	1,6	4,4	1,8	0,8	1,8	1,4	2,9	0,6	1,7
% of learners in public[1] schools benefiting from the nutrition programme	52,0	88,0	81,8	76,7	76,5	81,3	47,1	82,7	93,1	74,4
% of learners attending school who reported incidents of corporal punishment	1,7	24,1	10,0	16,6	22,2	11,5	3,4	10,3	10,9	13,5
Adult literacy rates (persons 20 years and older with less than Grade 7 as highest level of education)	9,1	23,6	22,1	18,1	20,0	22,8	7,9	21,3	22,4	16,3

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[1] Question on public and private school

2.3 Environmental indicators

Table 2.3: Environmental related indicators

Indicators	WC	EC	NC	FS	KZN	NW	GP	MP	LP	RSA
# of households using borehole water N ('000)	5	6	8	24	60	71	96	45	134	448
# of households using wood/coal for cooking N ('000)	10	219	13	36	425	96	44	206	596	1646
% of households whose refuse is removed by a local authority or co.	91,5	42,8	71,8	77,9	54,8	60,9	91,0	40,9	21,1	65,7
% of households who collect waste for recycling	16,5	5,6	5,0	2,8	3,8	2,5	6,6	3,0	1,6	5,8
% of households who sell waste for recycling	3,3	83,9	71,2	45,7	19,4	72,4	21,3	68,1	83,2	28,2
% of households who feel that they are experiencing problem with: Littering	23,0	27,7	31,0	44,1	31,1	32,0	25,8	48,7	30,7	30,4
Water pollution	12,0	18,9	12,0	23,8	19,2	14,8	13,3	13,8	14,7	15,6
Air pollution	11,1	14,1	19,2	27,9	17,2	23,5	19,8	25,4	20,8	19,0
Land degradation	15,4	44,9	25,7	51,4	24,6	49,7	25,8	63,3	38,6	33,9
Excessive noise pollution	17,6	12,5	12,7	22,9	7,4	13,9	16,2	18,5	25,8	15,7
% of households who have used during past 12 months : Pesticides in dwelling	38,1	54,2	50,6	35,0	46,9	53,0	50,3	49,8	49,2	48,0
Pesticides in garden	16,3	17,8	13,0	10,4	9,2	8,0	16,3	13,8	10,9	13,4
Herbicides/weed killers	9,1	8,7	5,5	5,1	5,5	3,7	12,3	8,9	5,8	8,2

2.4 Health/MRC/Health Systems Trust

Table 2.4: Indicators related to health

Indicators	WC	EC	NC	FS	KZN	NW	GP	MP	LP	RSA
% of orphans aged 7–18 years attending educational institutions	89,2	91,4	92,5	91,2	95,2	92,3	93,5	94,0	96,5	93,6
% of people 20 years and older with no schooling	1,3	6,0	7,9	4,4	7,8	8,5	2,1	10,7	10,5	5,6
% of persons with medical aid coverage	25,7	10,5	20,2	17,1	13,3	15,6	29,3	15,6	9,0	18,4
% of households for which the usual place of consultation is a public facility	53,4	79,2	71,8	69,3	78,8	69,9	61,7	75,0	86,4	70,2

2.5 Human settlement

Table 2.5: Housing related indicators

Indicators	WC	EC	NC	FS	KZN	NW	GP	MP	LP	RSA
% of households who live in an RDP or state-subsidised house	22,0	12,4	17,8	29,7	12,1	15,6	13,1	14,8	14,8	15,3
% of households receiving a housing subsidy from the state	17,1	9,6	15,2	25,1	11,2	14,1	11,9	12,9	13,1	13,3
% of households living in informal dwellings/tents/caravans	16,0	7,8	11,9	15,6	9,2	22,1	19,9	8,2	3,8	13,7
% of households who state that the condition of the walls of their state provided/subsidised housing is weak/very weak	23,4	28,7	21,9	18,3	14,2	14,7	7,9	12,1	13,4	15,9
% of households who state that the condition of the roof of their state provided/subsidised housing is weak/very weak	23,3	29,0	22,4	16,1	13,3	11,9	6,0	15,1	15,8	15,3
% of households who pay rent for a state provided/RDP house	11,2	11,1	4,7	8,0	8,4	9,8	6,0	9,6	5,2	8,3
% of households who fully own their dwellings	44,1	66,6	61,8	54,5	67,6	59,5	37,1	69,0	76,2	55,7
% of households with at least one person on a housing demand database/waiting list	11,0	16,2	13,8	10,2	17,1	11,8	14,2	13,8	9,0	13,6
Average time household members have been on the housing database/waiting list 0–3 years	20,6	59,1	50,3	48,1	70,8	52,7	22,8	57,3	45,8	45,4
4–6 years	15,6	16,1	22,5	23,2	13,3	24,3	13,0	15,1	22,8	15,9
7–9 years	21,5	9,0	9,7	15,8	5,9	8,0	14,4	7,9	16,0	11,6
More than 9 years	42,4	15,8	17,6	12,8	10,0	14,9	49,9	19,7	15,4	27,1

2.6 Social development

Table 2.6: Social development indicators

Indicators	WC	EC	NC	FS	KZN	NW	GP	MP	LP	RSA
# who received visits from community care workers at least once in the past year **N ('000)**	17	73	6	23	183	24	24	45	33	428
# of persons who received services for victims of domestic violence at least once in the past year N ('000)	1	5	1	1	4	2	6	3	3	26
# of persons who received social work services for drug abuse at least once in the past year N ('000)	4	51	4	2	28	5	19	15	3	131
# of persons who received child protection services at least once in the past year N ('000)	5	14	2	3	10	5	7	6	3	53
# of persons who received correctional services at least once in the past year N ('000)	1	3	0	1	2	1	4	1	1	14
% of people 60 years and older who received services from community care workers	1,5	6,8	3,0	1,3	4,1	2,7	1,6	4,3	3,7	3
% of persons 60 years and older who are disabled (UN definition)	16,4	18,3	26,5	23,4	21,1	25,1	15,9	18,9	14,6	18,6
% of persons 60 years and older who are severely disabled	11,9	10,6	15,8	12,8	11,4	16,7	7,3	12,6	9,1	10,8
% of people 60 years and older who received old-age grant	50,2	82,6	75,8	71,8	77,1	78,8	47,1	73,4	85,8	68,0
% of people 60 years and older who received social grants	51,5	84,3	77,4	74,5	78,8	79,3	48,4	75,0	86,8	69,5
# of persons 60 years and older N('000)	519	580	106	231	786	270	952	278	426	4147
# of households with at least one person 60 years and older N ('000)	370	475	81	189	645	229	731	231	364	3316

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Table 2.6: Social development indicators (continued)

Indicators	WC	EC	NC	FS	KZN	NW	GP	MP	LP	RSA
% of households with persons 60 years and older with:										
Food access adequate	76,8	70,6	69,3	73,5	75,2	62,7	82,3	70,6	91,3	76,9
Food access inadequate	15,0	22,4	21,0	21,1	20,9	22,6	13,0	20,7	7,0	17,0
Food access severely inadequate	8,3	7,0	9,6	5,4	4,0	14,7	4,7	8,8	1,7	6,1
% of individuals with reported HIV/AIDS who received community care	6,4	18,8	16,2	11,5	11,3	9,5	4,0	12,6	22,5	11,4
# of households that received at least one service from SDD N ('000)	20	75	7	23	85	24	48	35	30	347
# of persons per household that received at least one service from SDD N ('000)										
No beneficiary	1649	1588	297	840	2498	1116	4275	1092	1406	14759
One-two beneficiaries	20	63	6	21	64	23	45	27	27	297
Households with three or more beneficiaries	0	12	1	2	21	1	3	8	3	51
# of households with children younger than 18 years where the household received at least one service N ('000)	12	55	5	13	61	17	38	26	18	246
# of households with at least one person 60 years and older where the household received at least one service from SDD N ('000)	6	32	2	2	26	6	12	10	13	111

Table 2.6: Social development indicators (concluded)

Indicators	WC	EC	NC	FS	KZN	NW	GP	MP	LP	RSA
# of households classified as N ('000):										
Food access adequate	1281	1174	211	634	1941	714	3559	795	1312	11621
Food access inadequate	250	373	64	182	539	258	562	233	100	2561
Food access severely inadequate	138	116	29	47	103	168	202	99	24	925
of households classified as poor using household monthly expenditure of below R2 500 as the cut-off N ('000)	504	1116	177	534	1609	643	1732	699	1111	8126
# 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)	197	549	77	246	758	264	561	360	623	3635
% of poor households with children aged 7–18 who do not spend money on school fees	54,5	85,8	62,7	81,7	73,9	73,6	67,1	74,3	95,4	77,6

2.7 Transport

Table 2.7: Indicators related to transport

Indicators	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	4828	4512	749	3154	10246	3914	20356	3274	2979	54012
Bus	1895	363	134	608	1644	953	2778	2012	835	11220
Train	3250	92	4	2	521	93	3316	9	8	7297
% of the household's income spent on transport per month										
1–10%	68,4	52,5	65,2	58,7	47,0	51,0	48,0	53,2	53,3	52,3
11–20%	19,7	22,1	19,1	19,0	22,9	22,1	23,1	23,2	23,5	22,3
21–30%	4,5	10,1	7,9	8,6	11,3	9,3	11,5	9,4	7,1	9,7
30% or more	7,4	15,4	7,8	13,8	18,9	17,6	17,4	14,2	16,2	15,7
% of learners travelling for longer than 30 minutes to an education institution	12,6	21,9	12,5	13,7	26,4	16,0	15,0	14,2	16,1	18,3
% of workers travelling for longer than 30 minutes to their place of work	35,4	19,3	18,9	24,5	34,5	26,2	45,6	34,2	30,4	35,2

2.8 Water and sanitation

Table 2.8: Water and sanitation

Indicators	WC	EC	NC	FS	KZN	NW	GP	MP	LP	RSA
# of households with water supply infrastructure of RDP standard or higher N ('000)	1 615	1 193	284	836	1 937	929	4 150	948	978	12 868
# of households with water supply infrastructure less than RDP standard N ('000)	54	469	21	27	646	211	173	179	458	2 238
# of households with no water supply infrastructure N ('000)	18	266	11	34	348	132	177	149	322	1 458
Consumer perception index of water quality N ('000)										
# Safe to drink	1 625	1 449	262	713	2 349	1 031	4 221	975	1 322	13 948
# Clear	1 603	1 447	257	686	2 344	1 008	4 189	967	1 317	13 818
# Good in taste	1 612	1 413	258	692	2 364	1 005	4 188	951	1 240	13 721
#Free from bad smells	1 623	1 532	270	705	2 366	1 029	4 204	991	1 282	14 002
# of consumers who experienced interruptions of 48 hours or more at a time N ('000)	38	472	77	274	532	316	309	586	580	3 183
# of WSAs whose consumers have experienced a cumulative interruption of more than 15 days for the financial year N ('000)	18	333	51	164	314	237	142	526	490	2 275
# of households with access to a functioning basic sanitation facility (strategic framework) N ('000)	1 568	1 178	248	718	1 897	796	3 888	706	715	11 714

Table 2.8: Water and sanitation (concluded)

Indicators	WC	EC	NC	FS	KZN	NW	GP	MP	LP	RSA
% households with access to a functioning basic sanitation facility (strategic framework) N ('000)	94,8	71,2	81,7	83,3	73,9	70,0	90,2	62,7	50,0	77,9
# of households with substandard toilet facility N ('000)	85	478	55	144	669	341	424	420	716	3 332
% of households with substandard toilet facility	5,2	28,8	18,3	16,7	26,1	30,0	9,8	37,3	50,0	22,1
# of households using bucket toilets N ('000)	38	11	6	46	19	3	46	0	8	177
# of households with no sanitation facility N ('000)	21	155	17	20	121	55	31	71	95	587
# of poor households receiving free basic sewerage and sanitation N ('000)	193	169	52	209	211	95	787	68	41	1 826
% of poor households receiving free basic sewerage and sanitation	50,5	56,2	48,5	64,4	53,0	48,7	65,4	44,1	42,0	57,7

* Sample too small to accurately estimate values below 10 000

Table 2.9: Basic household and population data used for benchmarking the GHS 2013

Indicators	WC	EC	NC	FS	KZN	NW	GP	MP	LP	RSA
# of persons N ('000)	6 016 926	6 620 137	1 162 914	2 753 142	10 456 907	3 597 589	12 728 438	4 127 970	5 517 968	52 981 991
# of households N ('000)	1 668 808	1 662 576	304 036	862 609	2 582 620	1 139 806	4 322 601	1 127 164	1 436 332	15 106 551

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 sample design for the GHS 2013 was based on a master sample (MS) that was originally designed for the Quarterly Labour Force Survey (QLFS) and was used for the first time for the GHS in 2008. This master sample is shared by the Quarterly Labour Force Survey (QLFS), General Household Survey (GHS), Living Conditions Survey (LCS), Domestic Tourism Survey (DTS) and the Income and Expenditure Survey (IES).

The master sample used a two-stage, stratified design with probability-proportional-to-size (PPS) sampling of PSUs from within strata, and systematic sampling of dwelling units (DUs) from the sampled primary sampling units (PSUs). A self-weighting design at provincial level was used and MS stratification was divided into two levels. Primary stratification was defined by metropolitan and non-metropolitan geographic area type. During secondary stratification, the Census 2001 data were summarised at PSU level. The following variables were used for secondary stratification; household size, education, occupancy status, gender, industry and income.

Census enumeration areas (EAs) as delineated for Census 2001 formed the basis of the PSUs. The following additional rules were used:

- Where possible, PSU sizes were kept between 100 and 500 dwelling units (DUs);
- EAs with fewer than 25 DUs were excluded;
- EAs with between 26 and 99 DUs were pooled to form larger PSUs and the criteria used was 'same settlement type';
- Virtual splits were applied to large PSUs: 500 to 999 split into two; 1 000 to 1 499 split into three; and 1 500 plus split into four PSUs; and
- Informal PSUs were segmented.

A Randomised Probability Proportional to Size (RPPS) systematic sample of PSUs was drawn in each stratum, with the measure of size being the number (#) of households in the PSU. Altogether approximately 3 080 PSUs were selected. In each selected PSU a systematic sample of dwelling units was drawn. The number of DUs selected per PSU varies from PSU to PSU and depends on the Inverse Sampling Ratios (ISR) of each PSU.

3.3   Allocating sample sizes to strata[2]

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 $i = 1, 2, 3, ..., N.$ 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

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

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 #s. Once the PSUs have been randomised, we can generate permanent sequence #s for the PSUs.

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 $p_i = {x_i}/{X}; \quad i = 1, 2, 3, ---N,$ 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 $Z_i = n \times p_i \times R; i = 1, 2, 3, ---, N$. It is easy to verify that $\sum_{i=1}^{N} Z_i = n \times R$. Next, round the N real #s $Z_i; i = 1, 2, 3, ..., N$ to integer values $R_i; i = 1, 2, 3, ..., N$ 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 $[.]$ 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 $R_i; i = 1, 2, 3, ..., N$ are also the PSU inverse sampling rates (ISRs) for systematic sampling of dwelling units.

Step 4: Obtain cumulative ISR values

We denote by $C_i; i = 1, 2, 3, ..., N$ 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 #s that were assigned after the randomisation. Then, the cumulative ISRs are defined as follows:

$$C_1 = R_1,$$
$$C_j = C_{(j-1)} + R_j; \quad j = 2, 3, ---, N.$$

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 $r_1, r_2, ---, r_n$ 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 #s) # $i_1, i_2, \ldots, i_n$ such that:

$$C_{i_1 - 1} < r_1 \le C_{i_1}$$
$$C_{i_2 - 1} < r_2 \le C_{i_2}$$
.
.
$$C_{i_n - 1} < r_n \le C_{i_n}.$$

Then, the n PSUs with the labels $i_1, i_2, \ldots, i_n$ 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 [3]

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, 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

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

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 weights. 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 December/January 2006. 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

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.

Functioning basic sanitation facility

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

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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 DOA 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, 2.8	Main source	(# of persons aged 7-15 with disabilities[4] 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	1.14	Validation source	# learners who chose option 6 in Q1.15a/ # of persons attending public schools*100
Percentage of learners in public[5] 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 Q1.14)
Adult literacy rates	National Provincial	D,1.6	Validation source	# persons options with highest education less than Grd 7/# of persons 20 years and older

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[4] Un definition of disabilities
[5] 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 collect waste for recycling	National and provincial	5.34a	Main source	# of households option 1 in Q5.34a /# of households who answered the question*100
Percentage of households who sell waste for recycling	National and provincial	5.34c	Main source	# of households option 1 in Q5.34c/# of households who answered the question*100
Percentage of households who feel that they are experiencing pollution by categories	National and provincial	5.35 Option 1	Main source	# of households who answered 'Yes' for selected options in Q5.35/# 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	5.36	Main source	# of households to which the question applies who answered 'Yes' in Q5.36/# of households who answered the question*100

Table 3.4: Health, MRC, and Health Systems Trust related indicators

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, 1.6	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	5.9a	Main source	# of households who replied 'Yes' in Q5.9a /# of households who answered the question*100
Percentage of households receiving a housing subsidy from the state	National and provincial	5.10	Validation source	# of households whose response is 'Yes' in Q5.10/# 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	5.2, 5.9a	Validation source	# of households with a 'Yes' answer in Q5.9a and response 1–2 in Q5.3/# of households 'Yes' in Q5.9a
Percentage of households who state that the condition of the roof of their state provided/ subsidised housing is weak/very weak	National and provincial	5.2, 5.9a	Validation source	# of households 'Yes' in Q5.10a and response 1–2 in Q5.3/# of households 'Yes' in Q5.9a
Percentage of households who pay rent for a state provided/ RDP house.	National and provincial	5.5, 5.9a	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	5.5	Main source	# of households options 5 in Q5.5/# of households who answered the question*100
Percentage of households with at least one person on a housing demand database/ waiting list	National and provincial	5.11a	Validation source	# of households option 'Yes' in Q5.11a/# of households who answered the question*100
Average time household members have been on the housing database/waiting list: 0–3 years 4–6 years More than 6 years	National and provincial	5.11c	Validation source	Average # of years on database for different individuals in household/# 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
# receiving visits from community care workers	National and provincial	3.4	Descriptive/ interpretive Validation	# of persons who received visits from community care workers
# of persons receiving services for victims of domestic violence	National and provincial	3.4	Descriptive/ interpretive Validation	# of persons who received services for victims of domestic violence
# of persons who received social work services for drug abuse	National and provincial	3.4	Descriptive/ interpretive Validation	# of persons who received social work services for drug abuse
# of persons receiving child protection services	National and provincial	3.4	Descriptive/ interpretive Validation	# of persons receiving child protection services
# of persons receiving correctional services	National and provincial	3.4	Descriptive/ interpretive Validation	# of persons receiving child correctional services
% of people 60 years and older who received services from community care workers	National and provincial	D, 3.4	Only source	# of persons aged 60 years and older who received services from community care workers/# of persons who are 60 years and older *100
% of persons 60 years and older that are disabled	National and provincial	D, 2.8	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, 2.8	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 individuals with reported HIV/AIDS who received community care	National and provincial	D, 3.4, (no 1.38a in 2012)	Validation; reported HIV in questionnaire will be lower	# of persons with HIV/AIDS who received services from community care workers/# of persons who answered the question *100
# of households that received at least one service from SDD	National and provincial	D, 3.4	Main source	# of persons who received at least one service from SDD
# of persons per household that received at least one service from SDD: None Households with one–two beneficiaries Households with three or more beneficiaries	National and provincial	3.4	Validation	# of persons who received at least one service from SDD (one-two beneficiaries, three or more beneficiaries and none)
# of households with children younger than 18 years where the household received at least one service	National and provincial	D, 3.4	Inputs towards indicator calculation	# of households with person 18 years and younger where the household received at least one service from SDD
# of households with at least one person 60 years and older where the household received at least one service from SDD	National and provincial	D, 3.4	Main source	# of households with at least one person 60 years and older and where at least one person received at least one service from SDD
# 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	8.12a	-	# 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	8.12a	-	# 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, 1.16, 8.12a	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 Q3.13a; 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 Q3.14; 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, 5.24, 5.25a	Main source	# of households who chose option 7 (none)
# of households with no sanitation facility	National and provincial	5.24	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