

Housing and Services - Access to basic sanitation

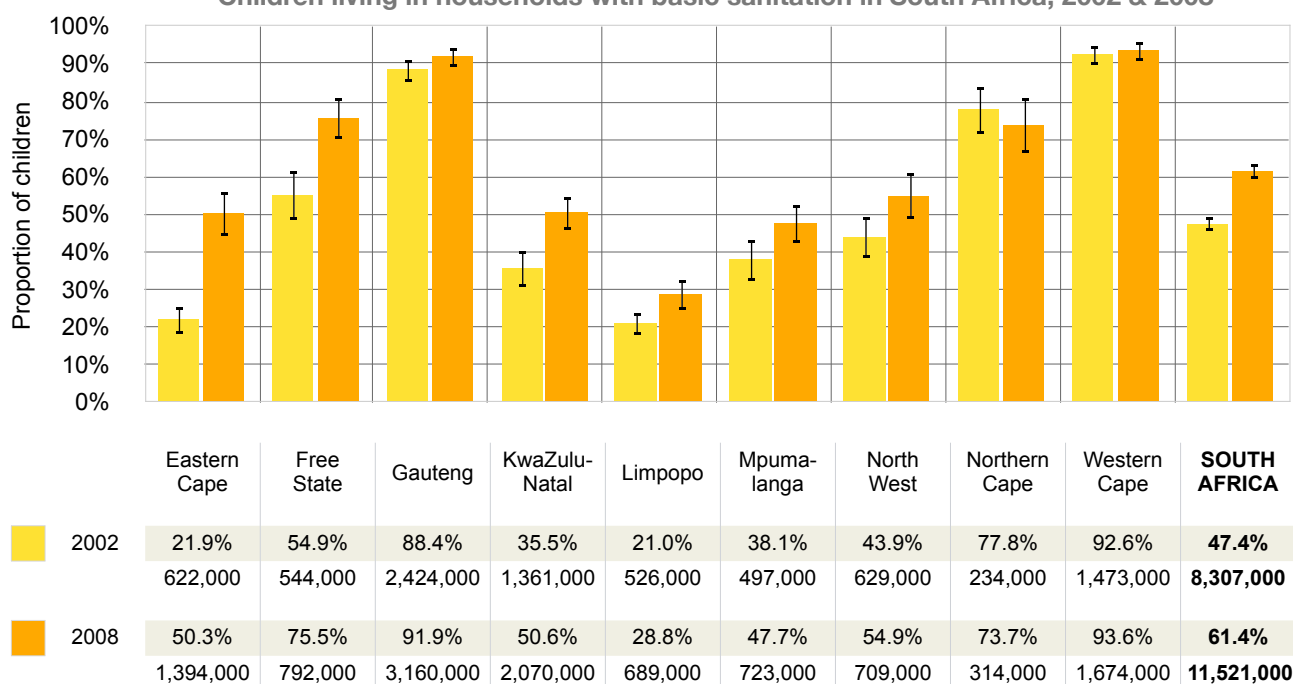
Author/s: Lori Lake & Katharine Hall

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Definition

This indicator includes the number and proportion of children living in households with basic sanitation. Adequate sanitation includes flush toilets and ventilated pit latrines that dispose of waste safely and are within or near a house. Inadequate sanitation includes pit latrines that are not ventilated, chemical toilets, bucket toilets, or no toilets at all.

Children living in households with basic sanitation in South Africa, 2002 & 2008



- Source
- Statistics South Africa (2003 - 2009) General Household Survey 2002 - 2008. Pretoria, Cape Town: Statistics South Africa.
 - Analysis by Katharine Hall & Double-Hugh Marera, Children's Institute, University of Cape Town.

- Notes
1. Children are defined as persons aged 0 – 17 years.
 2. Population numbers have been rounded off to the nearest thousand.
 3. Sample surveys are always subject to error, and the proportions simply reflect the mid-point of a possible range. The confidence intervals (CIs) indicate the reliability of the estimate at the 95% level. This means that, if independent samples were repeatedly taken from the same population, we would expect the proportion to lie between upper and lower bounds of the CI 95% of the time. The wider the CI, the more uncertain the proportion. Where CIs overlap for different sub-populations or time periods we cannot be sure that there is a real difference in the proportion, even if the mid-point proportions differ. CIs are represented in the bar graphs by vertical lines at the top of each bar.

What do the numbers tell us?

A basic sanitation facility is defined in the South African government's Strategic Framework for Water Services as the infrastructure necessary to provide a sanitation facility which is safe, reliable, private, protected from the weather and ventilated, keeps smells to a minimum, is easy to keep clean, minimises the risk of the spread of sanitation related diseases by facilitating the appropriate control of disease carrying flies and pests, and enables safe and appropriate treatment and/or removal of human waste and wastewater in an environmentally sound manner".¹

Sanitation aims to prevent the spread of disease and promotes health through safe and hygienic waste disposal. To do this, sanitation systems must break the cycle of disease. For example the toilet lid and fly screen in a ventilated pit latrine stop flies reaching human faeces and spreading disease. Good sanitation is not simply about access to a particular type of toilet. It is equally dependent on the safe use and maintenance of that technology, otherwise toilets break down, smell bad, attract insects and spread germs.

Good sanitation is essential for safe and healthy childhoods. It is very difficult to maintain good hygiene without water and toilets. Poor sanitation is associated with diarrhoea, cholera, malaria, bilharzia, worm infestations, eye infections and skin disease. These illnesses compromise children's nutritional status. Using public toilets and the open veld (fields) can also put children in physical danger. The use of the open veld and bucket toilets is also likely to have consequences for water quality in the area and to contribute to the spread of disease. Poor sanitation undermines children's health, safety and dignity.

The data show a gradual and significant improvement in children's access to sanitation over the period 2002 to 2008, although the proportion of children without adequate toilet facilities remains worryingly high. In 2002 less than half of all children (47%) had access to adequate sanitation. By 2008 the proportion of children with adequate toilets had risen to 61%. Over seven million children still use unventilated pit latrines, buckets or open land, despite the state's reiterated goals to provide adequate sanitation to all, and to eradicate the bucket system.

As with other indicators of living environments, there are great provincial disparities. In provinces with large metropolitan populations, like Gauteng and the Western Cape, over 90% of children have access to adequate sanitation, while provinces with large rural populations have the poorest sanitation. The proportion of children with adequate toilet facilities increased from 22% in 2002 to 50% in 2008 in the Eastern Cape, and from 36% to 51% in KwaZulu-Natal. Only 29% of children in Limpopo had adequate sanitation in 2008.

It is unclear why the vast majority of children in Limpopo are reported to live in formal houses, yet access to basic sanitation is amongst the poorest of all the provinces. Definitions of adequate housing such as those in the UN-HABITAT and the South Africa's National Housing Code include a minimum quality for basic services, including sanitation.

The statistics on basic sanitation provide yet another example of racial inequality: Over 95% of Indian, White and Coloured children had access to adequate toilets in 2008, while only 55% of African children had access to basic sanitation. This is a marked improvement from 38% of African children in 2002.

Technical notes

The Department of Water Affairs and Forestry² defines the minimum standard for basic sanitation as:

- appropriate hygiene (keeping toilets clean and washing hands after handling waste or using a toilet);
- a system for disposing of human faeces, waste water and rubbish which is affordable, easy to maintain, safe and environmentally acceptable; and
- an adequate toilet for each household.

Sanitation therefore includes infrastructure, service provisioning and behaviour. For the purposes of this indicator we use a narrow definition, based simply on the type of toilet available to each household. The General Household Survey asks about each household's toilet facilities. The following facilities are included in the category of adequate sanitation: 'flush on-site', 'flush off-site' and 'VIP', standing for ventilated

improved pit latrine. Inadequate sanitation includes the following: 'chemical toilet', 'other pit', 'bucket', 'none' and a small number of 'unspecified'.

For purposes of measuring and monitoring persistent racial inequality, population groups are defined as 'African', 'Coloured', 'Indian', and 'White'.

Strengths and limitations of the data

The data are derived from the General Household Survey ³, a multi-purpose annual survey conducted by the national statistical agency, Statistics South Africa, to collect information on a range of topics from households in the country's nine provinces. The survey uses a sample of 30,000 households. These are drawn from Census enumeration areas using multi-stage stratified sampling and probability proportional to size principles. The resulting estimates should be representative of all households in South Africa.

The GHS sample consists of households and does not cover other collective institutionalised living-quarters such as boarding schools, orphanages, students' hostels, old age homes, hospitals, prisons, military barracks and workers' hostels. These exclusions should not have a noticeable impact on the findings in respect of children.

Changes in sample frame and stratification

The current master sample was used for the first time in 2004, meaning that, for longitudinal analysis, 2002 and 2003 may not be easily comparable with later years as they are based on a different sampling frame. From 2006, the sample was stratified first by province and then by district council. Prior to 2006, the sample was stratified by province and then by urban and rural area. The change in stratification could affect the interpretation of results generated by these surveys when they are compared over time.

Provincial boundary changes

Provincial boundary changes occurred between 2002 and 2007, and slightly affect the provincial populations. Comparisons on provincial level should therefore be treated with some caution. The sample and reporting are based on the old provincial boundaries as defined in 2001 and do not represent the new boundaries as defined in December 2005.

Weights

Person and household weights are provided by Statistics South Africa and are applied in Children Count – Abantwana Babalulekile analyses to give estimates at the provincial and national levels. Survey data are prone to sampling and reporting error. Some of the errors are difficult to estimate, while others can be identified. One way of checking for errors is by comparing the survey results with trusted estimates from elsewhere. Such a comparison can give an estimate of the robustness of the survey estimates. For this project, GHS data were compared with estimates from the Statistics South Africa's mid-year estimates, as well as the Actuarial Society of South Africa's ASSA2003 AIDS and Demographic model.

Analyses of the seven surveys from 2002 to 2008 suggest that over- and under-estimation may have occurred in the weighting process:

- When comparing the weighted 2002 data with the ASSA2003 AIDS and Demographic model estimates, it seems that the number of children aged 0 – 9 years was under-estimated in the GHS, while the number of children aged 10 – 19 was over-estimated. The pattern is consistent for both sexes. The number of very young males aged 0 – 4 years appears to be under-estimated by 15%. Girls in this age group have been under-estimated by 15.8%. Males in the 10 – 14-year age group appear to be over-estimated by 5.7%.
- Similarly in 2003, there was considerable under-estimation of the youngest age group (0 – 9 years) and over-estimation of the older age group (10 – 19 years). The pattern is consistent for both sexes. The results also show that the over-estimation of males (9%) in the 10 – 19-year age group is more than double the over-estimation for females in this age range (3.8%).
- In the 2004 results, it seems that the number of children aged 7 – 12 years was over-estimated by 6%, as well as the number of persons aged 13 – 22 years. The number of very young children appeared to have been under-estimated. The patterns of over- and under-estimation appear to differ across

population groups. For example, the number of White children appears to be over-estimated by 14%, while the number of Coloured persons within the 13 – 22-year age group appears to be 9% too low.

- In 2005, the GHS weights seem to have produced an over-estimate of the number of males within each five-year age group. The extent of the overestimation is particularly severe for the 10 – 14-year age group. In contrast, the weights produce an under-estimate of the number of girls – the error seems greatest in respect of the younger age groups. These patterns result in male-to-female ratios of 1.06, 1.13, 1.10 and 1.09 respectively for the four age groups covering children (ie 0 – 4, 5 – 9, 10 – 14 and 15 – 19 years).
- The 2006 weighting process yielded the same results as in 2005. The one exception is that the under-estimation of females is greatest in the 5 – 9 and 15 – 19-year age groups. This results in male-to-female ratios of 1.03, 1.10, 1.11 and 1.12 respectively for the four age groups covering children.
- The 2007 weighting process produced an over-estimation for boys and an under-estimation for girls. The under-estimation of females is in the range of 3 – 5% while the over-estimation is in the range of 1 – 7%. This results in male-to-female ratios of 1.07, 1.06, 1.08 and 1.08 respectively for the four age groups covering children.
- Overall, assuming the ASSA2003 Aids and Demographic model to be the 'gold standard', it appears that the GHS2008 over-estimates both male and female populations under the age of 19 years, except for 0 – 4-year-old females. The extent of over-estimation for boys is in the range 0 – 7%. It is particularly severe for boys aged 10 – 14 years. Over-estimation is in the range of 2 – 5% for girls aged five years and above. For girls aged 0 – 4 years, the ASSA2003 model suggests that these may have been under-estimated by about 1%. The GHS2008 suggests a sex ratio of 1.03 for children aged 0 – 4 years, which is higher than that of the ASSA model and Statistics South Africa's mid-year estimates.

The apparent discrepancies in the seven years of data may slightly affect the accuracy of the Children Count – Abantwana Babalulekile estimates. Since 2005 the male and female patterns vary in respect of a particular characteristic, which means that the total estimate for this characteristic will be somewhat slanted toward the male pattern. A similar slanting will occur where the pattern for 10 – 14-year-olds, for example, differs from that of other age groups. Furthermore, there are likely to be different patterns across population groups.

Disaggregation

Statistics South Africa suggests caution when attempting to interpret data generated at low level disaggregation. The population estimates are benchmarked at the national level in terms of age, sex and population group while at provincial level, benchmarking is by population group only. This could mean that estimates derived from any further disaggregation of the provincial data below the population group may not be robust enough.

Reporting error

Error may be present due to the methodology used, ie the questionnaire is administered to only one respondent in the household who is expected to provide information about all other members of the household. Not all respondents will have accurate information about all children in the household. In instances where the respondent did not or could not provide an answer, this was recorded as "unspecified" (no response) or "don't know" (the respondent stated that they didn't know the answer).

References

- ¹ Department of Water Affairs and Forestry (2003) Strategic Framework for Water Services. Pretoria: DWAF
- ² Department of Water Affairs and Forestry (2002) The policy on basic household sanitation made easy. Pretoria: DWAF
- ³ Statistics South Africa (2008). General Household Survey 2007 Metadata. Cape Town, Pretoria: Statistics South Africa.



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