NGAPVA

Statistical Bulletin

Malawi: Sanitation

David Hemson

July 2010

Measuring Service Delivery in Southern Africa Project

Study 3: Developing measures and methods for measuring progress towards service delivery targets

Southern AfricaTrust
Influencing Policies To End Poverty

HSRC
Human Sciences Research Council

Progress towards sanitation goals

Key targets and indicators from the MDG (which are also contained in the Regional Indicative Sustainable Development Plan -- RISDP) have been clustered to review progress in the health sector in the four countries included in the study: Tanzania, Botswana, Malawi and South Africa. These include assessments of progress towards improved and basic sanitation. Goal 7c includes the target of reducing by half the proportion of people without sustainable access to basic sanitation.

The table below illustrates progress made towards goals related to sanitation drawn from the Millennium Development Goals.

Table 1. Malawi Sanitation MDGs

Target 7.9 Access to improved sanitation (broad)	
Target 7.9 Access to improved sanitation (higher)	

KEY

0	No Progress in meeting target (0/10)
5	Some progress but will not meet MDG target (5/10)
10	Target will be met in 2015(10/10)

Access to basic sanitation (using the "broad" definition of sanitation) increased from 78 percent in 1990 to 84 in 2004. Projections from available data indicate that there will be a reduction by half of those without toilets using the "broad" definition. The projection indicates that the MDG target of 89 percent will be met in 2012, before the target year of 2015.

Using the "higher" level of sanitation (VIP and above), there is a considerably lower level of access. The slower growth rate per annum at this level presents a challenge at the "higher" level of sanitation. Projections indicate that access at the higher level of Ventilated Pit Privies and flush toilets falls considerably short of the MDG target.

The MDG will not be met on the basis of the projections of present trends at the "higher" level of sanitation.

Improved sanitation facilities are defined by the Joint Monitoring Project to include flush or poor flush toilets, Ventilated Improved Pit (VIP) latrine, pit latrine with slab, and composting toilet (refer to Appendix 1 & 2). Since these categories do not appear identically in national statistics, a "broad" definition has been adopted, which includes all toilets appearing in these statistics and a "higher level" definition. The latter definition is adopted by a number of countries and includes flush toilets and VIPs.

A method to assess progress towards this goal has been devised in this study. As far as possible the data is accessed from national statistics sources or alternatively from authoritative international sources. A simple model to assess progress over time has been developed, which provides the quantum of the target, calculates the rate of change, and

projects existing trends towards the target. The model provides the year in which the MDG level of access, etc, will be reached. The supporting data and reflections on the sector are contained in this review.

Political and Socio-Economic Context

Malawi has emerged as a democracy after three decades of one-party rule. The major challenges for Malawi include rapid population growth, an increasing pressure on agricultural land, corruption, and the spread of HIV/AIDS.

Malawi's economy is fairly fragile with a narrow base, lacking in key social services and infrastructure. Its economy is vulnerable to shocks, making it difficult for the country to attain sustained economic growth. Agriculture remains the primary economic activity, contributing about 40% of GDP and over 90% of export earnings; it also employs 85% of the labour force. The country faces trade deficits almost every year and these are financed, for the most part, by overseas development assistance which constitutes 30-40% of the national budget. In recent financial years this has risen beyond 50% of total public expenditure. The main exports are tobacco, tea, sugar, coffee, pulses and cotton.

Malawi's poverty levels remain alarming. According to the Human Development Report (HDR) of 2006, 76.1% of the population lives below the poverty line, consuming less than US$2 per day while 41.7% spend less than US$1 per day.

Political will to achieve goals

There is increasing political will to attain the MDGs as illustrated by the incorporation of MDGs in the Malawi Growth and Development Strategies (MGDS) and the monitoring and evaluation evidenced by Government progress reports. The government of Malawi prepared three progress reports on the MDGs in collaboration with UN experts. These are of high quality and the Malawi reports were presented at the Monterrey UN Conference on Financing for Development as a country case study, which demonstrated the financial feasibility of achieving the MDGs.

The Malawi Poverty Reduction Strategy Paper was approved in 2002 with four main pillars of poverty reduction. Water and sanitation featured within the first pillar with the main objective of increasing access to good drinking water and sanitation.

Table 2. Access to sanitation in MDG & RISDP

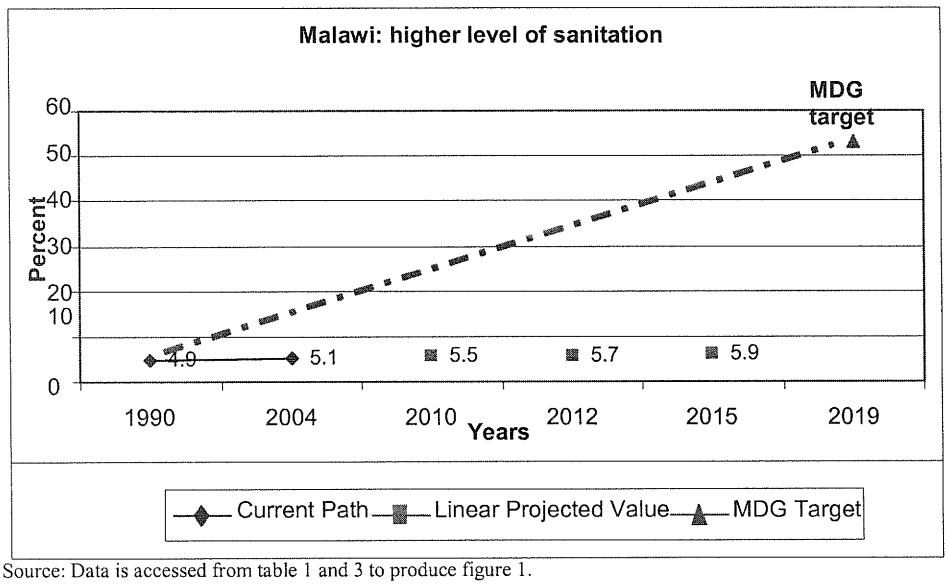
Selected MDG & RISDP Goals and Indicators
Goal 7: Ensure environmental sustainability: Target 7c: To halve, by 2015, the proportion of people who do not have access to basic sanitation.

Progress towards improved sanitation is presented with two definitions employed; firstly that of "higher" level of access to **improved sanitation** and secondly that of **basic sanitation**. The distinction is based on the definition of the toilet and needs to be made firstly, to define sanitation and secondly, to ensure comparability between countries in the study. This definition affects measurement as the categories of improved sanitation are often not reflected in the national surveys.

The levels of access providing improved sanitation are defined in Appendix 2. Unfortunately surveys in Malawi do not distinguish between "traditional" or "simple" pit latrines which have a slab and superstructure and pit latrines, which do not. This distinction is critical to the definition of "improved" sanitation. The data is therefore presented at two levels; at the higher level of access which includes Ventilated Pit Privies and flush toilets; and at the level termed "broad definition" which includes all forms of pit latrine.

The procedure adopted is to present both the data on the higher level of access and thereafter present the "broad" definition. Two projections are made of progress towards the MDG, one at each of these levels.

Figure 1. Malawi MDG Projection, higher level of access



Source: Data is accessed from table 1 and 3 to produce figure 1.

Analysis and comment:

Figure 1 is compiled from data provided in Table 3. Access to improved sanitation at the higher level of access improved from 4.5% in 1992 to 4.9% in 2004.

Figure 1 presents access to improved sanitation and shows that there was an increase from 4.5% in 1990 to 4.9% in 2005. On the basis of the model developed in Table 3 the

target access to improved sanitation to meet the MDG in 2015 is 52%. The projection indicates that MDG target of 52% will be met far into the future (3584) and not 2015.

The model employed to project both the MDG target and the linear rate of growth is presented in Table 3, below.

Table 3. Higher level of Access, MDG Projection

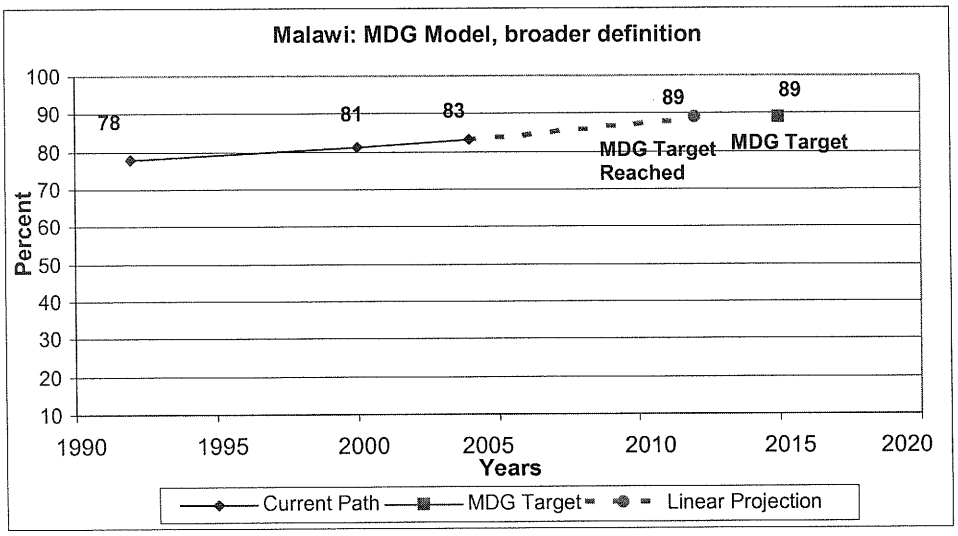
		a	b	c	d	e	f	g
Year	population	Coverage%	Backlog%	1/2 Backlog%	MDG Target	Growth Rate	No. of Years	MDG Target Met
1992	9,794,556	4.5	96	48	52	0.03	1592	3584
2004	12,573,672	4.9						

Source: Dataset: Malawi Demographic Health Survey, 1992
Dataset: Malawi Demographic Health Survey, 2004
Data is accessed from table 12 in the appendix

Working from the data in Table 3, the backlog in 1992 is 96% (Column b). The MDG target requires that the backlog be halved is 48% (c). The MDG target (after this value is added to the baseline figure) is 52% (d) which should be met in 2015. The growth rate from 1990 to 2004 is 0.03% (e). The number of years to reach this target is 1592 years (f), which will be met in the year 3584 (g).

This indicates that access at the higher level of Ventilated Pit Privies and flush toilets falls considerably short of the MDG target. The low growth rate per annum is low presents a challenge in the provision of sanitation at substantially improved levels.

Figure 2. Malawi MDG Projection, broad definition



Source: Data is accessed from table 2 and 4 to produce figure 2.

Analysis and comment:

Figure 2 presents the data at the "broad" definition of sanitation. Access to basic or improved sanitation has increased from 78% to 84% in 2004.

The model employed to project both the MDG target and the linear rate of growth is presented in Table 4. On the basis of this model, the MDG target of access to improved sanitation of 89% is to be met in 2015. The projection indicates that this MDG target will be met in 2012 and not 2015.

Table 4. Broad definition, MDG Projection

		A	b	C	d	e	F	g
Year	population	Coverage%	Backlog%	1/2 Backlog%	MDG Target	Growth Rate	No. of Years	MDG Target Met
1990	9,459,000	78	22	11	89	0.5	22	2012
2004	12,608,000	84						

Source: Dataset: Malawi Demographic Health Survey, 1992
Dataset: Malawi Demographic Health Survey, 2004
Data is accessed from table 4

As presented in Table 4 above, the backlog in 1990 is 22% (b). The MDG target requires that the backlog be halved (from 22%) which is 11% (c). The MDG target (after this value is added to the baseline figure) is 89% (d) which should be met in 2015. The growth rate from 1990 to 2004 is 0.5% (e). This target should be reached in 22 years (f) from 1990, which is in the year 2012 (g).

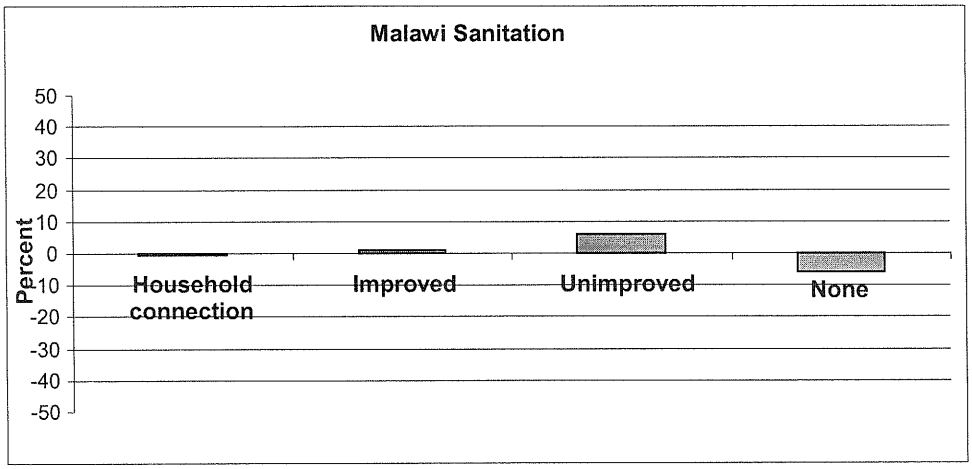
The key driver of change is the new policy on sanitation. As in a number of other countries in the study a key constraint is institutional in nature: unresolved uncertainty about roles and responsibilities between the Ministry of Health and the Ministry of Water Development in providing access to adequate sanitation.

Despite the improvement shown in the projection, an assessment of the sector concludes that there is currently a multiplicity of civil society's organizations, faith-based organizations and international non-governmental organizations working in an uncoordinated manner. This indicates that better coordination could further improve delivery at the "broad" and "improved" levels of sanitation in the future.

Improved Sanitation: changes over time

Changes in access at various levels of sanitation, at household connection, improved, unimproved, and none are mapped in this section. Over the period 1992-2004 there has been the most rapid change in the category "none", which has decreased by 6%; followed by "unimproved" sanitation and finally "improved" sanitation.

Figure 3. Malawi Access to Sanitation, 1992-2004



Source: Data for figure 3 is produced from figures in table 5

Table 5 provides the data for Figure 3.

Table 5. Change in access at all levels

Source	Year	Household connection	Improved	Unimproved	None
Malawi Integrated Household Survey	1992	4	1	73	22
Demographic and Health Survey	2004	3	2	79	16
% Change		-1	1	6	-6

Analysis and comment:

From the Table 5 it can be concluded that improved sanitation, including Ventilated Improved Privies and flush toilets represented in "improved" sanitation, is lagging behind the growth of unimproved sanitation. Household connections, the highest level of service actually shows a decline.

Towards equitable access to improved sanitation

This section presents access to improved sanitation at the higher level of service, in terms of the following:

Numbers in the household;
Number of under five year olds; and
Regions

This analysis will probe whether there has been an improvement in access to those most vulnerable to poor quality water.

It also provides an indication of where the greatest backlog is situated by regions, which serves as the basis for prioritization and monitoring.

Equity: Household size and number of children

Table 6. No Access to Improved Sanitation by household size, higher level of access

	1992	2000	2004
Less than and equal to 6 members	97%	97%	96%
Greater than 6 members	92%	95%	94%

Source: Malawi Demographic Health Survey 1992 and 2000. Malawi Integrated Household Survey 2004

Analysis and comment:

There is not an appreciable difference between the figures for lack of access between larger and smaller households.

Table 7. No Access to higher level of access, children under 5

	1992	2000	Change %
No children under 5 in household	23%	19%	4%
Only one child under five in household	24%	20%	4%
More than one child under five in household	20%	18%	2%

Source: Malawi Demographic Health Survey 1992 and 2000

An analysis of Table 7 tends to the conclusion that families with more than one child under the age of five years are lagging in access to improved sanitation.

This appears to reflect the situation in urban areas as families with a large number of children tend to be found in squatter and unplanned settlements in which case several families tend to share a toilet.

Table 8. Access to Sanitation by District, higher level of access

	Improved Sanitation source	Unimproved sanitation source
Kasungu	0%	100%
Dedza	0%	100%
Machinga	0%	100%
Chiradzulu	0%	100%
Chitipa	0%	100%
Balaka	0%	100%
Ntcheu	2%	99%
Dowa	1%	99%
Mwanza	2%	98%
Phalombe	2%	98%
Nsanje	2%	98%
Rumphi	3%	97%
Salima	3%	97%
Mchinji	3%	97%
Karonga	3%	97%
Nkhata Bay	4%	96%
Mangochi	4%	96%
Mzimba/Mzuzu City	5%	95%
Mulanje	8%	93%
Thyolo	7%	93%
Zomba/Zomba City	8%	92%
Chikwawa	9%	91%
Blantyre/Blantyre City	9%	91%
Ntchisi	9%	91%
Lilongwe/Lilongwe City	9%	91%
Nkhotakota	10%	90%

Source: Integrated Household Survey 2004

Data is presented here in terms of the higher level of access and ranked in terms of a lack of access to highlight areas of deficit.

It does appear that districts that are suburban and urban have higher improved sanitation access than those that are more rural. This is attributable to improved sanitation service provision by district, town and city assemblies in suburban and urban areas.

Appendix 1

Sanitation data: tables from various sources

In this section the most comprehensive set of data which is available is presented in the following sequence:

As computed from original datasets for the higher level of access;
In terms of the broad definition of sanitation; and

Table 9. Improved Sanitation (Complete Data, Broader definition)

		Sanitation							
				URBAN			RURAL		
Source	Year	Population	Total Access	Urban Population	HC	Urban Access	Rural Population	HC	Rural Access
JMP data[1]	1990	9,459,000	47.0%	1,135,080	4.0%	64.0%	8,323,920	--	45.0%
Malawi Demographic Health Survey,1992[2]	1992	--	--	--	--	90.0%	--	--	63.0%
Survey of the State of health, nutrition, water, sanitation, education in Malawi, Ministry of economic planning and development, National Statistical office and the centre for social science[2]	1995	--	--	--	--	90.0%	--	--	69.0%
JMP data[1]	1995	10,111,000	53.0%	1,314,430	3.0%	63.0%	8,796,570	--	51.0%
Malawi Demographic Health Survey,1996[2]	1996	--	--	--	--	86.0%	--	--	60.0%
JMP data[1]	2000	11,512,000	58.0%	1,726,800	2.0%	63.0%	9,785,200	1.0%	57.0%
Malawi Demographic Health Survey, 2000[2]	2000	--	--	--	--	91.0%	--	--	72.0%
World Health Survey, WHO, 2003[2]	2003	--	--	--	1.0%	92.0%	--	1.0%	76.0%
JMP data[1]	2004	12,608,000	61.0%	2,143,360	1.0%	62.0%	10,464,640	1.0%	61.0%
Malawi, Multiple Cluster Indicators Survey,2006[2]	2006	--	--	--	1.0%	92.0%	--		80.0%

Source: [1] Data Accessed from Joint Monitoring Programme for Water Supply and Sanitation, July 2008.
[2] Joint Monitoring Programme for Water Supply and Sanitation, Coverage Estimates. Improved Drinking Water. Malawi. Updated in July 2008.URL: http://documents.wssinfo.org/resources/documents.html?type=country_files

Note: -- Missing data

Data accessed from the Joint Monitoring programmes is reconciled by liaising with national authorities (in collaboration with regional bodies). Source: Current Developments in JMP, How does the JMP monitor progress towards the MDG drinking-water and sanitation target? Rifat Hossain. Slide 30.
World Health Organization www.unece.org/stats/documents/ece/ces/ge.31/2009/mtg2/zip.9.e.ppt

Table 10. Improved Sanitation (Analysis from Selected Data Sets, higher level of access)

				Sanitation					
				URBAN			RURAL		
Source	Year	Population	Total Access	Urban Population	HC	Urban Access	Rural Population	HC	Rural Access
Malawi Demographic and Health Survey, 1992[1]	1992	9,794,556	4.5%	1,202,771	13.3%	14.9%	8,591,785	0.5%	1.2%
Malawi Demographic and Health Survey, 2000[2]	2000	11,623,368	7.6%	1,766,752	15.1%	16.0%	9,856,616	0.8%	3.7%
Malawi Integrated Household Survey 2004[3]	2004	12,573,672	4.9%	2,069,626	10.7%	15.0%	10,504,046	1.0%	2.5%

Source: [1]Dataset: Malawi Demographic Health Survey, 1992
[2]Dataset: Malawi Demographic Health Survey, 2000
[3]Dataset: Malawi Demographic Health Survey, 2004

Table 11. Basic Sanitation, broad definition (Data compiled from JMP data)

				Sanitation					
				URBAN			RURAL		
Source	Year	Population	Total Access	Urban Population	HC	Urban Access	Rural Population	HC	Rural Access
JMP data	1990	9,459,000	47.0%	1,135,080	4.0%	64.0%	8,323,920	0.0%	45.0%
JMP data	1995	10,111,000	53.0%	1,314,430	3.0%	63.0%	8,796,570	0.0%	51.0%
JMP data	2000	11,512,000	58.0%	1,726,800	2.0%	63.0%	9,785,200	1.0%	57.0%
JMP data	2004	12,608,000	61.0%	2,143,360	1.0%	62.0%	10,464,640	1.0%	61.0%

Source Data Accessed from Joint Monitoring Programme for Water Supply and Sanitation, July 2008.
Definition can be found in Appendix 1.

Table 12. Basic Sanitation, broad definition (Data compiled from selected datasets)

				Sanitation					
				URBAN			RURAL		
Source	Year	Population	Total Access	Urban Population	HC	Urban Access	Rural Population	HC	Rural Access
Malawi Demographic and Health Survey, 1992	1992	9,794,556	77.8%	1,202,771	13.3%	96.8%	8,591,785	0.5%	71.7%
Malawi Demographic and Health Survey, 2000	2000	11,623,368	81.0%	1,766,752	15.1%	94.5%	9,856,616	0.8%	78.4%
Malawi Integrated Household Survey 2004	2004	12,573,672	83.5%	2,069,626	10.7%	94.2%	10,504,046	1.0%	81.0%

Source: Dataset: Malawi Demographic Health Survey, 1992
Dataset: Malawi Demographic Health Survey, 2000
Dataset: Malawi Demographic Health Survey, 2004
Definition can be found in Appendix 1. Changes in access

Appendix 2

International definition: improved / unimproved sanitation

Improved sanitation facilities are:

Flush/pour flush to:
- Piped sewer system
- Septic tank
- Pit latrine

Ventilated improved pit (VIP) latrine
Pit latrine with slab
Composting toilet

Unimproved sanitation facilities are:

Flush/Pour flush to elsewhere
Pit latrine without slab/open pit bucket
Hanging toilet/hanging latrine
No facilities
Bush or field

Source: World Health Organization and United Nations Children's Fund Joint Monitoring Programme for Water Supply and Sanitation (JMP). Progress on Drinking Water and Sanitation: Special Focus on Sanitation. UNICEF, New York and WHO, Geneva, 2008. page22

NOTE:
In the World Health Survey (2003), "traditional pit latrines" were included in the definition of improved sanitation. A fairly precise definition is given to this category. A traditional pit latrine is described as a single pit covered by a slab with a drop hole and a superstructure (WHO, 2003:p10). The slab may be made of wood (sometimes covered with mud) or reinforced concrete. The superstructure provides shelter and privacy for the user. Basic improvements include a hygienic self-draining floor made of smooth, durable material and with raised foot rests; a tight-fitting lid that covers the drop hole, to reduce smells and keep insects out of the pit; a floor raised above ground level to prevent flooding; an adequately lined pit, to prevent the pit collapsing (e.g. when the soil is unstable); and an adequate foundation, to prevent damage of the slab and superstructure (WHO 2003:p10).

Since such standards are generally not to be found in toilets classified as "traditional" or "simple" it appears that the JMP has reduced the proportion of toilets assigned to the category "improved sanitation" by a factor of about a third or used some other deflator. The "simple" pit latrine in the classification above is included among "unimproved" sanitation because the definition includes categories which are "poorly defined" according to the World Health Organisation and thus difficult to separate from other categories.

In our analysis simple pit latrine has been excluded from "improved" sanitation firstly because of its imprecise definition and secondly because pit latrines with the precise description provided to "traditional" pity latrines are not identified in the coding of the sanitation data from surveys used for analysis.

In conformity with the international accepted definition of "improved sanitation", in this study traditional pit latrines are not considered as an improved sanitation source but only the Ventilated Improved Privies.

Appendix 3

Original Tables from survey

Table 13. 1992 DHS

	Valid Percent
Own flush toilet	3.6
Shared flush toilet	.6
Traditional pit toilet	72.8
Ventilated improved pit (VIP) latrine	1.0
No facility, bush	22.0
Other	.0
Total	100.0

Table 14. 2000 DHS

	Valid Percent
Flush toilet	3.2
Traditional pit toilet	77.4
Ventilated improved pit (VIP) latrine	.5
No facility	16.7
Not dejure resident	2.1
Total	100.0

Table 15. 2004 IHS (Integrated Household Survey)

	Valid Percent
Flush toilet	2.8
VIP latrine	2.1
Traditional latrine with roof	57.8
Latrine without roof	20.9
None	16.3
Other	.1
Total	100.0