D. WATER AND SANITATION

This section of the report is based extensively on material made available by WaterAid, Tanzania.[60] MKUKTA has six operational targets for water supply, sanitation and waste management, expanding on the more limited set of PRS indicators. For access to water, MKUKUTA now puts some emphasis on the time it takes to go, collect and return with water, which is a more inclusive indicator of the demands of domestic water management. The set of indicators is summarised in the table below.

Table 12. Water and sanitation indicators, Tanzania mainland, 1999-2004

Indicator %	Year				Targets	
	1999	2002	2003	2004	PRS 2003	MKUKUTA 2010
Rural population with access to clean & safe water within 30 minutes spent collecting water Routine data Census	-	 42	53	-		65
Urban population with access to clean and safe water Routine data Census	-	 85	73	-		90
Urban population with access to improved sewerage facilities	-	-	17	-		30
Households living in slums without adequate, basic, essential utilities	-	-	-	-		
Households with access to basic sewerage services	-	-	-	-		
Schools with adequate sanitary facilities	-	-	-	-		100
Population with access to basic sanitation Census	-	91[61]	-	-		95
Cholera outbreaks	-		-	-		50% of 2005

Source: NBS (2003) Population and Housing Census 2002; routine information on access to water and sewerage services from respective ministries; information on cholera outbreaks from Epidemiology Unit, Department for Preventive Services, MoH [62]

Note: A dash (-) means data not available.

---

[60] See http://homepage.mac.com/globalimpacts/FileSharing 1.html
[61] This includes flush toilets, pit latrines and ventilated improved pit latrines (VIPs).
[62] WaterAid is currently working with the Epidemiology Unit of the Department for Preventive Services in the Ministry of Health on a study analysing existing cholera data generated by Infectious Diseases Week Ending reports (IDWE) with a view to developing a meaningful indicator for measuring cholera outbreaks.

ACCESS TO CLEAN AND SAFE WATER

There are two main sources of information about access to water: household surveys and censuses; and the routine information of the Ministry of Water and Livestock Development which is based on estimates reported by District Water Engineers and Urban Water Authorities. The targets have been set by the Ministry based on routine data and based on the notion of 'coverage' or the number of people covered by water points and water schemes that are in place and functioning.

As discussed below these estimates are often at variance with information from surveys of households. Also, the routine 'coverage' indicator does not claim to report on the time needed to fetch water. The MKUKUTA target is therefore far more challenging than it first appears. The 53 per cent coverage reported for 2003 does not include a time dimension whilst the MKUKUTA target of 65 per cent for the rural population does.

Figure 16 below shows how access to water in urban and rural areas has changed since the early 1980s. Both survey and routine data suggest that an increasing percentage of households have access to an improved source of water. The most recent census shows a fall in these percentages.

Figure 16. Urban and rural water supply coverage against PRS and MKUKUTA targets and the MDGs
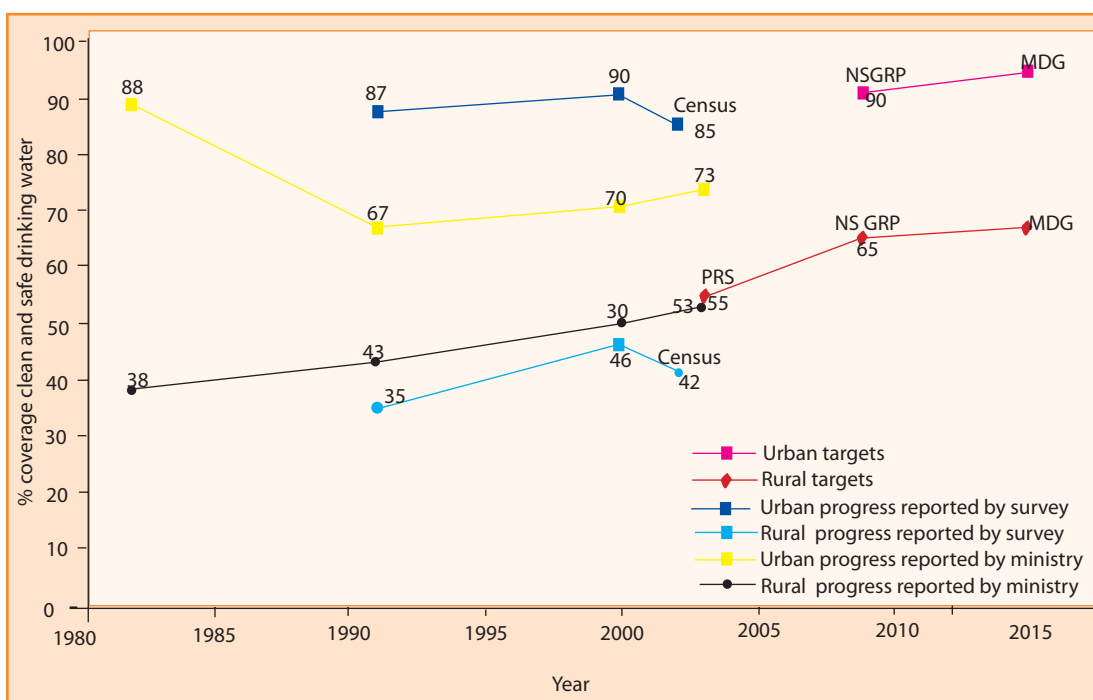

Source: Population Census 2002

According to census data, 42 per cent of rural households and 85 per cent of urban households in Tanzania now have access to an improved water source [63] for their drinking

---

[63] Improved water supply is defined as those households that get their main source of drinking water from a piped supply or from a protected well or spring.

water. (See Figure 17.) The census did not include questions about the time needed to fetch water. Demographic and health surveys typically do ask such questions, and information from earlier surveys has been reported in previous Poverty and Human Development Reports. Similar information from the most recent demographic and health survey is not yet available.

Figure 17. Percentage of households by main source of drinking water
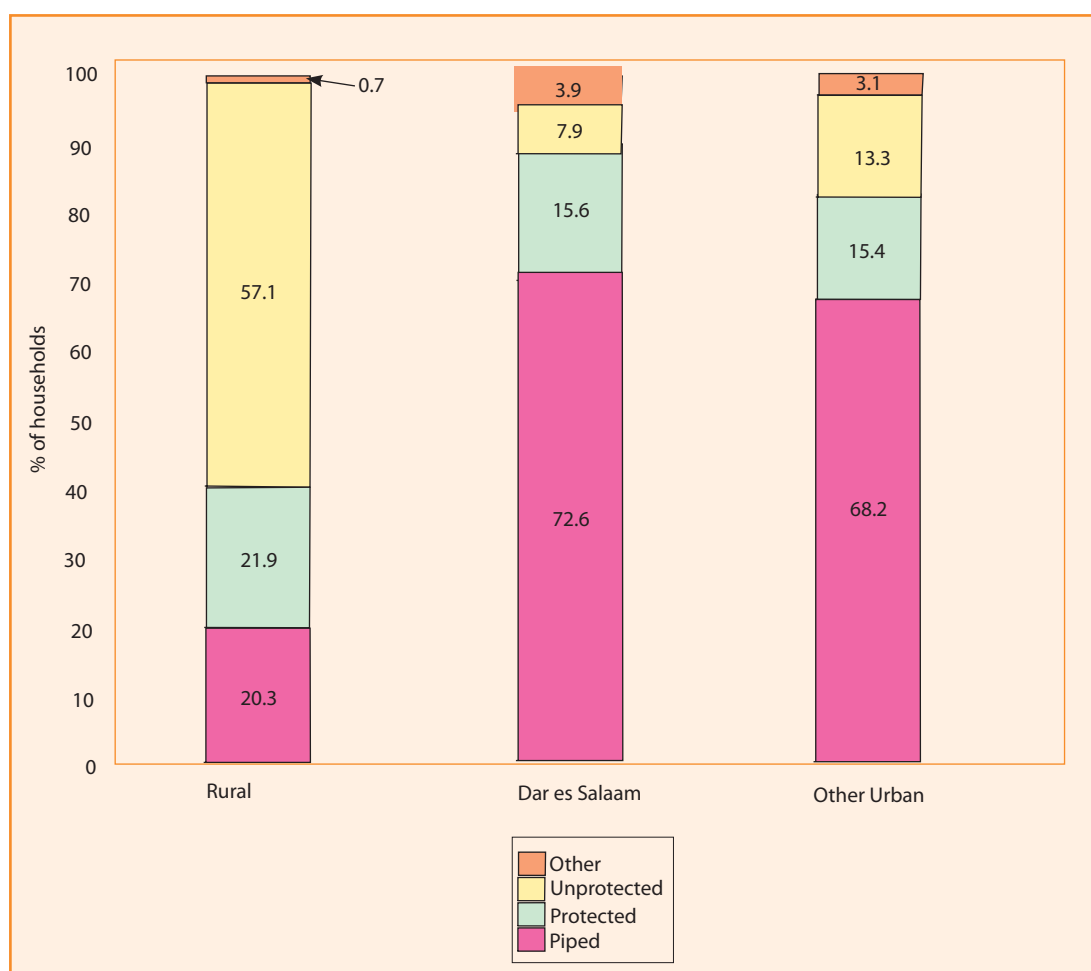
The census estimate of 42 per cent of rural households with access to improved water supply is notably less than the 2003 routine data figure of 53 per cent. Conversely, the census reported consistently higher rates of access to improved water supply for urban areas.

For urban areas the reason for the consistently lower coverage rate reported by routine data is twofold. First, the Urban Water and Sewerage Authorities report on only the coverage of the municipal piped systems they manage. Private sources, including boreholes and protected shallow wells, most of which are not registered, are not included in the coverage estimate. Second, the many households without a connection to the municipal supply

who obtain their drinking water from their neighbours are underestimated.

For rural areas there is no obvious pattern of either over or under reporting between the census and the Ministry's routine data. Survey data from the Household Budget Survey are similar to those from the census. There are also a number of extreme regional discrepancies between census and routine data (see Table 13). While some of these discrepancies can be attributed to methodological differences between survey and routine data collection systems, there remain unexplained discrepancies which call into question the validity of relying on routine data for monitoring progress towards the targets.

Table 13. Comparison of reported rural water supply statistics

Region	Census 2002 % of rural HH with access	Ministry Routine Data 2003 % of rural population served	Difference in % points
Pwani	15	59	- 44
Mtwara	29	64	- 35
Kilimanjaro	74	54	+ 20
Dodoma	50	77	- 27

While the census reports that overall 42 per cent of rural households have access to improved water supply, this average masks a very uneven distribution across districts which are examined further in the next chapter on spatial analysis. Seven districts have fewer than 10 per cent of rural households with improved water supply: Sikonge (4 per cent), Igunga (5 per cent), Kishapu (9.6 per cent), Liwale (8 per cent), Mkuranga (6 per cent), Rufiji (9 per cent) and Mafia (3 per cent). At the other end of the scale there were four districts in which over 80 per cent of rural households were reported to have access: Arumeru (82 per cent), Mwanga (82 per cent), Kyela (83 per cent) and Rombo (93 per cent).

The 2003 Afrobarometer survey found that for 52 per cent of respondents the Government was doing "very badly" or "fairly badly" in delivering water to households, and preliminary 2005 results suggest that the situation has not improved: close to 54 per cent of the respondents remain dissatisfied.

ACCESS TO SEWERAGE FACILITIES [64]

The current aggregate figure for coverage of sewerage facilities in city and municipal urban areas is 17 per cent.

Households living in slums without adequate basic essential utilities will be a challenging indicator to report. First, there will need to be agreement on what a 'slum' is. A less pejorative term would be unplanned areas. Second, the definition of adequate utilities needs to be agreed. These definitions need to be debated. No further comment is made about this indicator here.

It is probably not possible to get data about schools and sanitary facilities from the census; the status of this indicator would rely on data from the Ministry of Education and Culture.

---

[64] Access to sewerage facilities is only reported by the Ministry of Water and Livestock Development. The source of the data is Urban Water and Sewerage Authorities.

Regarding basic sanitation, census and survey data report on the existence of household toilet facilities, with response options limited to flush toilet, pit latrine, ventilated improved pit latrine (VIP), no facility and other. Consistent with previous surveys [65], the census reports a very high percentage (87 per cent) of households as having pit latrines and only 9 per cent of households with no toilet facility at all (see Figure 18). The data are consistent across all national surveys and are supported by other more detailed surveys (CWIQ, WaterAid). These data, however, do report the quality of toilet facilities. Response options fail to distinguish between adequate and inadequate sanitation: the term VIP is too specific and the term pit latrine too broad since the term pit latrine covers both adequate and inadequate sanitation.

Figure 18. Household toilet facilities.
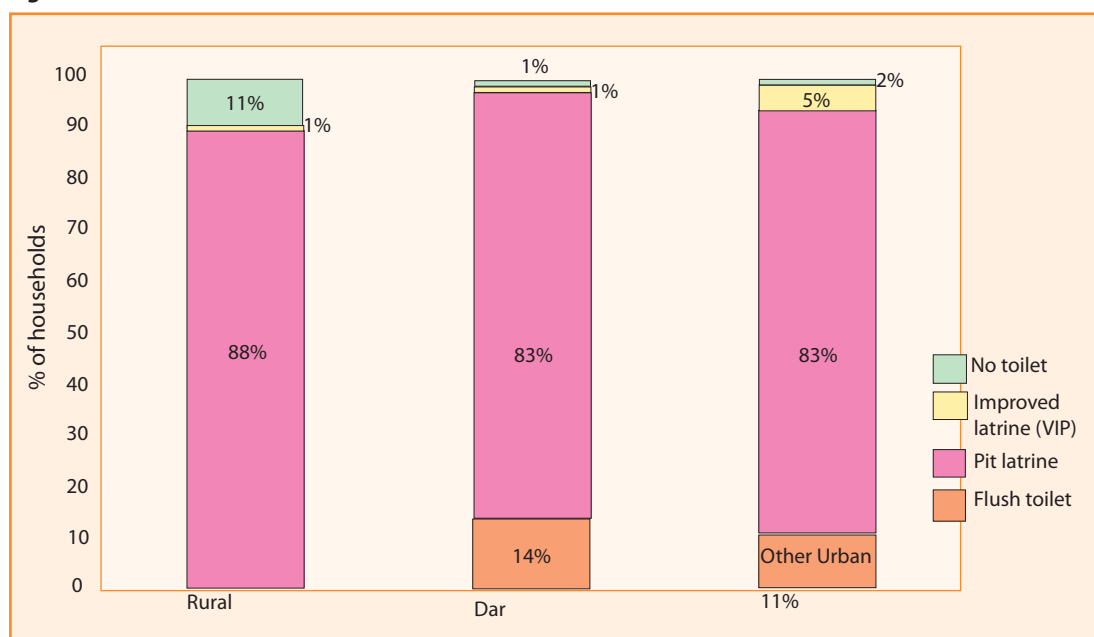
Source: Census 2002

There are notable geographical variations: in four districts more than 50 per cent of rural households had no toilet facilities: Ngorongoro (57 per cent), Kiteto (58 per cent), Simanjiro (61 per cent) and Monduli (79 per cent). These are all districts in which the majority of people are pastoralists.[66]

Another limitation of these data is that they do not reflect actual use of facilities, nor are there regularly reported data on other hygiene practices which would help reduce the prevalence of water and sanitation related diseases.

CHOLERA

There is a close link between water supply, sanitation, hygiene practices and waterborne diseases such as cholera. The spread of cholera in particular is influenced by the interaction

---

[65] As far back as 1973 the government introduced a 'latrinisation' campaign under a programme called "Mtu ni Afya" (You are your health) aimed at ensuring that each household would have a latrine. The campaign was given added impetus following a cholera outbreak in 1977. Latrine coverage increased from 20-50 per cent between 1973 and 1980, reaching 85 per cent in the 1988 Census.

[66] Though many still depend on their transhumant livelihoods and so would see little point in building permanent toilet facilities, increasing numbers of families are building permanent bases around new health, education and water supply infrastructure.

of all three of these factors. It is for this reason that cholera outbreaks are a pertinent 'outcome indicator' reporting on the environmental change emerging from the combination of water supply, sanitation and hygiene promotion initiatives. Currently the Ministry of Health reports on annual 'case fatality rates' (CFR) against the WHO recommended standard of below 1%. This is only an indicator of effective clinical management of cholera cases and not of the public health measures taken to prevent cholera.

Since the first major officially reported cholera epidemic in Rufiji, 1977-78, cholera is reported to have spread to most regions of the country. Tanzania reports cholera outbreaks almost every year.

In some regions like Dar es Salaam, cholera can be considered endemic. Cholera transmission shows a seasonal pattern, generally with a larger proportion of cholera cases being reported during the rainy seasons October to December and March to May (see Figure 18). Over the past three years, 2002-04, reports of cholera cases have persisted throughout the year and it is clear that the total number of annual cases reported has also increased. This may be a reflection of a real increase in cases or it may also be a result of improved reporting procedures.

Figure 19. Total cholera cases reported monthly, 1997 - 2004
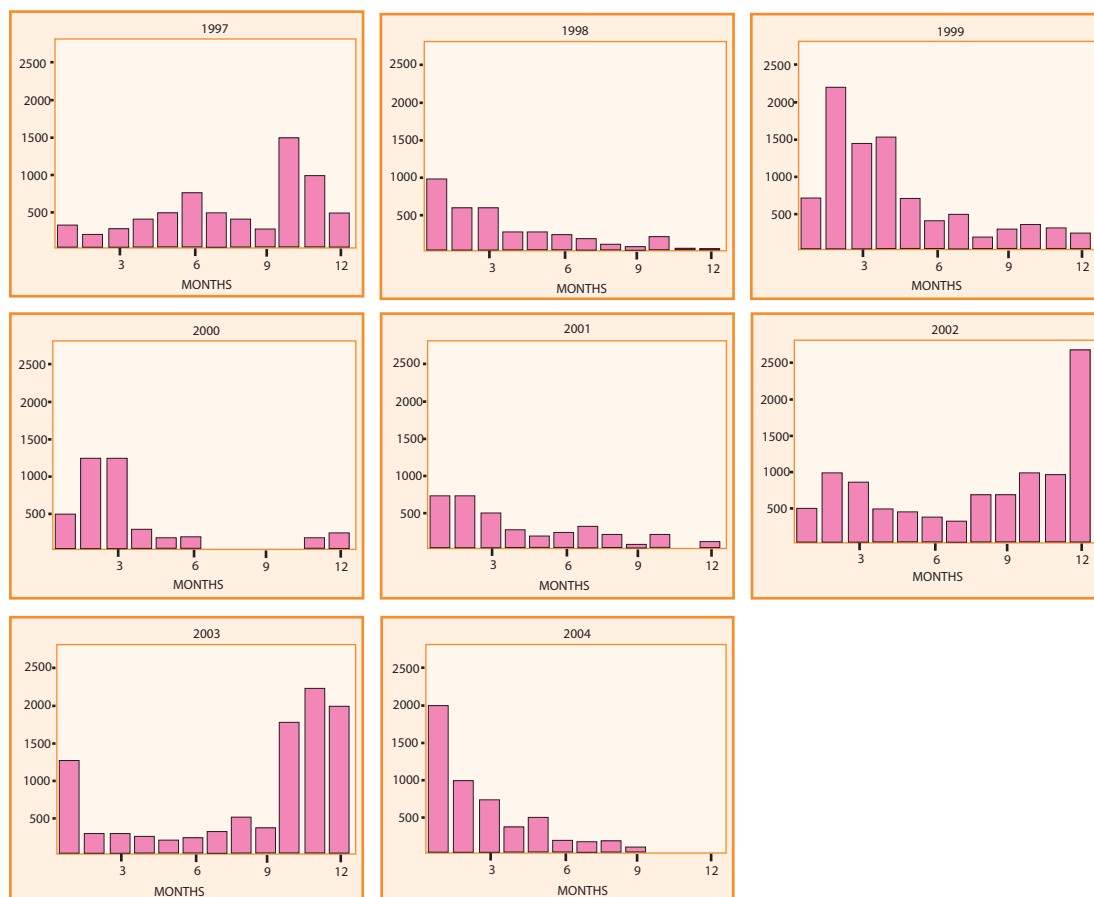
Available data from Infectious Diseases Week Ending (IDWE) reports [67] from 1994 onwards suggest a steady if rather slow improvement in the frequency of reporting from districts (see Figure 20). By 2003 just over 60 per cent of the 5824 expected district reports for the year were submitted. In the 1990s, when reporting was erratic, the ratio of cholera reported to reports submitted is higher than in later years, when reporting has become more regular.

Figure 20. Proportion of annual reports reporting at least one cholera case
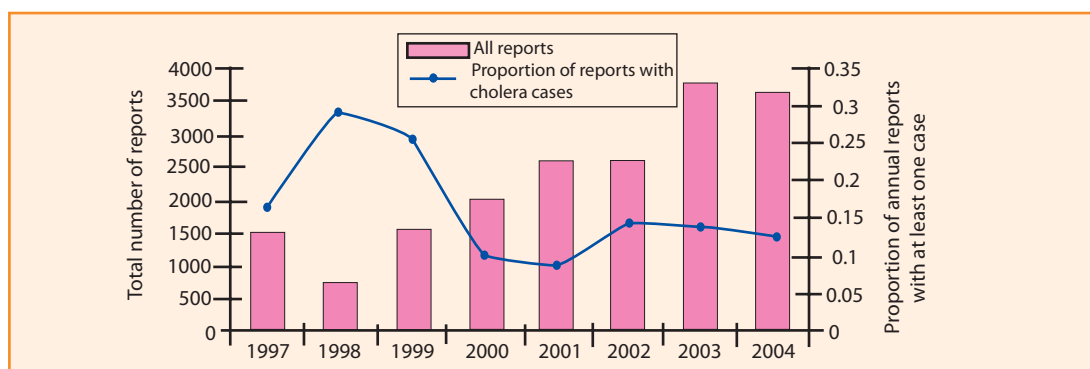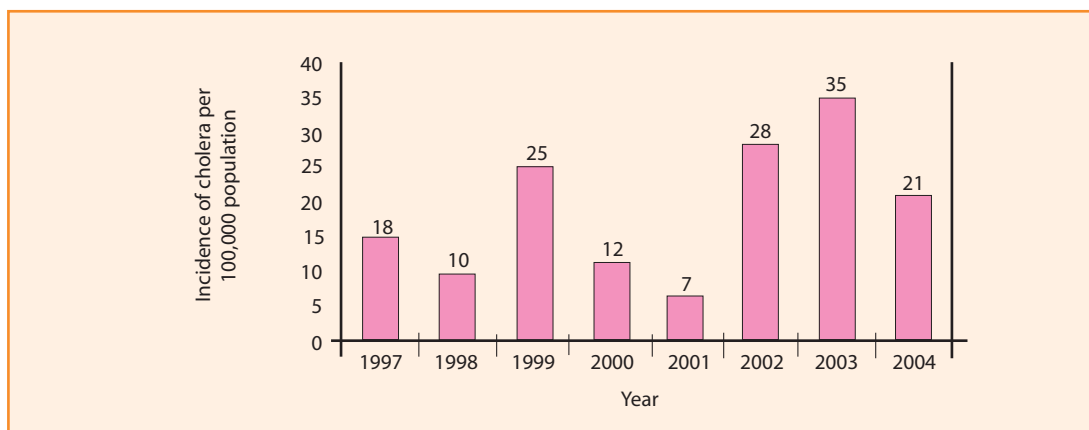

Source: Department for Preventive Services, MOH.

The MKUKUTA operational target for cholera is to reduce cholera 'outbreaks' by half by 2010. Monitoring progress against this indicator would require a clear definition of what an outbreak is and how it may be counted. This is especially challenging in areas of Tanzania where cholera has become endemic such as Ilala municipality in Dar es Salaam. Even in areas where cholera is not endemic, defining and confirming an outbreak is a subjective business especially in areas where bacterial confirmation of cases is hindered by absence of laboratories.

Also, reporting on the number of outbreaks does not indicate the volume of cases. For example, one area can have two outbreaks a year with hundreds of cases each, and another area can have 12 outbreaks but very few cases in each. Generally speaking, fewer cases can indicate an effective clinical response to an outbreak. But fewer cases can also indicate heightened public awareness and good hygiene behaviour that stops the disease from spreading. Therefore a possible addition or an alternative to measuring outbreaks may be to measure the incidence or cholera 'attack rate'. [68] Though this is more objective than counting outbreaks, clearly defining the reporting period of an outbreak remains problematic. Cholera attack rates fluctuate so much year on year that tracking year on year changes is not helpful (see Figure 21).

---

[67] IDWE reports are compiled by the Department for Preventive Services. IDWE data is compiled by Districts from health facilities and covers infectious diseases including cholera. Records from 1994 onwards are available.

[68] Cholera attack rates are often expressed in terms of new cases of cholera reported per 100,000 population per year; Department of Health: Directorate of Health Systems Research and Epidemiology (Notification System) Pretoria, South Africa

Figure 21. Cholera attack rate for Tanzania Mainland

Source: Department for Preventive Services, MOH.

CONCLUSIONS AND RECOMMENDATIONS

Summary of progress

Less than half of rural households have access to an improved source of drinking water. In seven districts, less than 10 per cent of households have such access.

Over 90 per cent of household report having toilet facilities – mostly pit latrines, and it is not possible with available data to know whether they constitute basic sanitation.

Policy and operational issues identified

Cost effective strategies are need to more quickly improve access to improved water supplies for rural households and for those in peri-urban areas.

Recommendations for indicators and monitoring systems

There are important limitations of, and challenges encountered in, the definitions of MKUKUTA indicators and in their monitoring. The indicators for water and sanitation are being reviewed as part of the review of the monitoring system, along with identifying reliable sources of data.

Tracking studies would be helpful, linked with the Public Expenditure Review process.