CHAPTER 1: STATUS OF POVERTY

Introduction

This chapter presents data for indicators of the current status of income and non-income poverty, based on operational targets specified in the MKUKUTA, as well as the PRS targets, together with data for past years wherever possible, so that trends may be assessed.

Reporting of poverty indicators in previous Poverty and Human Development Reports has followed a common classification: indicators of income poverty and those of non-income poverty. MKUKUTA is based on three clusters: growth and reduction of income poverty, the quality of life, and social well-being, governance and accountability. This status chapter follows the common classification. The first section is concerned with income poverty, the second with indicators of non-income poverty which are associated with MKUKUTA's cluster 2.

For this year's PHDR, issues of governance are incorporated in the two main sections of the status chapter and in the analytical chapter 3. The revised poverty monitoring system will include specific indicators of governance which will be agreed in the process of revision, and these indicators will be reported in the next PHDR.

Income Poverty[2]

The outcome which MKUKUTA's first cluster aims to achieve is sustained, broad-based and equitable growth. It proposes to achieve this through:

- strategies of sound economic management
- accelerating GDP growth
- improving food availability and accessibility
- reducing income poverty among rural as well as urban households

The emphasis, therefore, is not only on the aggregate growth of the economy as a whole, but on ensuring that this growth is sustained and equitably shared. Inequality matters not only from a social perspective, but also because if unchecked it can jeopardise efforts to ensure that growth reduces poverty.

Table 1 summarises the current data on income poverty indicators. For some indicators - GDP, agriculture and inflation – data are made available on an annual basis. Baselines for employment indicators are from the Integrated Labour Force Survey of 2001. The estimates cited here are from national definitions of unemployment which include those who have been discouraged from looking for work. New estimates will be available from the survey to be undertaken early in 2006. A more extensive list of indicators is expected, as a result of the revision to the monitoring system, fully to incorporate the targets of MKUKUTA.

[2]The normal practice has been followed in estimating poverty which is to use reports of household consumption and match them with established poverty lines. Expenditure patterns tend to be more stable than income and are commonly used as the best indicators of income poverty. The term "income poverty" has been used throughout since it is in more common usage than the more technically correct "consumption poverty."

Table 1. Income poverty indicators, baseline and targets

Indicator	Baseline		Trend				Targets	
	Estimate	Year	2001	2002	2003	2004	PRS 2003	MKUKUTA 2010
% of the population below the basic needs poverty line	36	2000-01					30	19
% of the population below the food poverty line	19	2000-01					15	10
GDP growth rate (%)	4.9	2000	5.7	6.2	5.7	6.7	6	6-8
Agricultural growth rate (%)	3.4	2000	5.5	5.0	4.0	6.0	5	10
Inflation rate (%)	5.9	2000	5.2	4.5	3.5	4.1	4	4
% of working age population not currently employed	13	2000-01						7

Sources: National Bureau of Statistics (2002); Economic Surveys, various

The Household Budget Survey is the main source of estimates of the incidence of income poverty. The results of the last survey, conducted in 2000/01, have been extensively reported by the National Bureau of Statistics and by earlier Poverty and Human Development Reports. In summary, the change in the percentage of households living below the poverty line was small between 1991/92 and 2000/01, with a greater decline in poverty among households in Dar es Salaam than among rural households or those in other urban areas.

At the same time the overall economic growth rate has been accelerating, with especially encouraging growth in agricultural GDP in 2004. After taking account of the population growth rate, per capita economic growth rates are more modest, and not yet sufficient to generate significant poverty reduction.

Current status of Poverty

Both the Poverty and Human Development Reports in 2002 and 2003 assessed the trend of poverty in the 1990s based on the Household Budget Surveys (HBS) of 1991/92 and 2000/01 (RAWG 2002, 2003). These surveys indicate that about 36 per cent of Tanzanians were living below the poverty line in 2000/01; only 3 percentage points less than the 39 per cent estimated in 1991/92. The incidence of poverty in rural areas decreased from 41 to 39 per cent; in Dar es Salaam the decrease was from 28 to 18 percent. Other urban areas, except Dar es Salaam, recorded a small decrease in poverty in the 1990s from 29 to 26 per cent of households. Based on this trend it is only in Dar es Salaam that the target to halve the incidence of poverty by the year 2010 is likely to be reached.

Though poverty declined markedly in Dar es Salaam, the drop in poverty was not sufficient to significantly reduce national poverty rates. This is mainly because Dar es Salaam constitutes a small proportion of the national population (7.4 per cent in 2002). It is obvious in this case that declines in poverty in Dar es Salaam have only a minor effect on national poverty rates. While the decline in poverty in rural households in the 1990s was very small, it accounted for more than half the drop in the national poverty rate. Urban areas accounted for 27 per cent of the reduction in poverty during 1992-2001 (World Bank, 2005). Consequently acceleration in national poverty reduction could more quickly be achieved through an accelerated decline in rural poverty.

Explaining the current level of Poverty

Several factors account for the current level of poverty. We know that growth and inequality are both important in determining poverty reduction. Unlike data on GDP growth, data on income inequality are not available on an annual basis. This section tries to relate current growth and inequality with poverty but with the data limitations in mind. It is based on recent work of the World Bank in Tanzania towards the Country Economic Memorandum, and analysis of Professor M. Wuyts (2005).

Growth

Tanzania experienced weak economic growth in the early 1990s when the growth rate was lower than that of the population. Since the mid 1990s, however, the country experienced higher growth rate, increasing from the average of 4.0 per cent between 1995-1999 to 5.8 per cent between 2000-2004. In 2004 the growth rate was 6.7 per cent, which exceeded the targeted level of an annual increase of 6 per cent. The major challenge the country is facing is how to sustain this growth rate at the same time as ensuring that the benefits of growth are broadly shared.

Table 2. Average annual GDP growth rate, 1990 to 2004

1990-1994	1995-1999	2000-2004
2.5	4.0	5.8

Source: URT 2004, Economic Survey

Much of this growth has been attributed to the macroeconomic reforms which the country adopted in the 1990s, though growth in agriculture still depends critically on weather conditions. Some of the policy reforms include trade and exchange liberalisation, parastatal sector reform, investment promotion, tax reforms, financial sector reforms and civil service reforms. The reforms encouraged private sector participation in the economy. Foreign direct investment has increased tremendously since the end of the 1990s.

With the data which are available, analyses have examined the extent to which recent growth has contributed to poverty reduction, and have assessed possible relationships between growth and poverty reduction. Two elements have been analysed: the components of growth and the poverty elasticity of growth. The analysis of the composition of growth assesses the extent to which incomes from the sectors which are growing faster are affecting rates of poverty where poverty is concentrated. Analysis of the poverty elasticity of growth examines the extent to which poverty is reduced in response to the recent growth rate of the economy, which is in turn related to the composition of growth.

Composition of growth

National estimates of GDP are broken down into nine sectors.[3] The mining sector has recorded the highest rate of growth since 1990. Tourism, manufacturing and construction had relatively lower growth rates in the 1990s but have shown large increases in recent years.

[3]The sectors are agriculture; mining and quarrying; manufacturing; electricity and water; construction; tourism; transport and communication; finance, insurance, real estate & business services; and public administration and other services.

Other sectors of the economy have lower growth rates, averaging less than 5 per cent for the whole period 1990 to 2004.[4]

Agriculture remains by far the sector with the largest share of GDP. Its share averages approximately 50 per cent since 1990. While the mining sector has the highest growth rate, its share of GDP remains one of the lowest because it is growing from a very low base. Tourism and finance, insurance, real estate and business services also have relatively high shares of GDP; other sectors' shares are less than 10 per cent each.

In the analysis of the relationship between growth and poverty reduction, the greatest interest, however, is in the assessment of components of growth between agriculture and non-agriculture. According to the Household Budget Survey, 80 per cent of the poor are rural (NBS, 2002) and 81 per cent of the poor live in households where the main economic activity of the head of household is agriculture. Furthermore, 70 per cent of the employed work in agriculture (ILFS, 2002). Agriculture therefore deserves prominence in the discussion of growth and poverty. Table 3 shows estimates of growth rates in agriculture and other sectors (aggregated into industry and services) from 1990 to 2004.[5]

Table 3. Average annual growth, 1990-2004

Economic activity	Avg. Ann. Growth Rate			Avg. Contr. To Growth		
	1990-94	1995-99	2000-04	1990-94	1995-99	2000-04
Agriculture	3.1%	3.6%	4.8%	1.5%	1.8%	2.3%
Industry	2.0%	5.4%	8.7%	0.3%	0.9%	1.5%
Services	1.9%	3.8%	5.9%	0.7%	1.3%	2.0%
Total GDP (factor cost)	2.5%	4.0%	5.8%	2.5%	4.0%	5.8%

Source: URT 2004, Economic Survey

The growth rate in agriculture since 1995 has been lower than that of the non-agricultural sectors. With an estimated population growth rate of 2.8 per cent, the average per capita growth in agriculture has been only of 0.3 per cent and 0.8 per cent in 1990-94 and 1995-99 respectively. Moreover, while agriculture makes the largest contribution to total growth, its share is falling - from 1.5 per cent out of a total of 2.5 per cent - to 2.3 per cent out of the total 5.8 per cent. Non-agricultural sectors made much smaller contributions to overall growth rates in the early 1990s but their contributions to total growth of GDP are increasing fast. The low rate of agricultural growth is perhaps the main reason why reduction in rural poverty is slow despite the recent high growth rate of the economy as a whole. Significant poverty reduction depends on higher growth in the rural economy, and particularly in the agricultural sector.

Poverty elasticity of growth

The poverty elasticity of growth is a measure of the effect of growth on poverty reduction. The World Bank has recently undertaken an analysis of poverty elasticity of growth under different growth scenarios disaggregated between rural and urban. Table 4 summarises the results of this analysis.

[4]See appendices for details of growth and share of each sector between 1990 and 2004.
[5]See Appendix Table 1 for the detailed disaggregated data.

The estimated poverty elasticities are lower for rural than for urban areas. The same rates of growth cause a smaller reduction in rural poverty rates because poverty is deeper among rural households than among urban households.

Table 4. Poverty elasticities assuming different consumption growth rates

	1% growth	5% growth	10% growth
Rural	-1.3	-1.6	-1.8
Urban	-2.6	-2.0	-2.0

Source: Calculated from HBS 2001

Inequality

While growth increases the size of the cake, inequality leads to its disproportionate distribution. Regardless of the rate of growth achieved overall, a high level of inequality may lead to very little, if any, impact on poverty reduction.

Analysis of the household budget surveys indicates that there has not been a significant increase in inequality in the 1990s. The most commonly used indicator of inequality, the Gini coefficient, increased from 0.34 in 1991/92 to 0.35 in 2000/01.[6] Inequality appears to have increased to a greater extent in urban areas, especially in Dar es Salaam, where the Gini coefficient increased from 0.30 in 1991/92 to 0.36 in 2000/01. Other urban areas, apart from Dar es Salaam, experienced a small increase in the Gini coefficient in the 1990s from 0.35 to 0.36 between the two household budget surveys. On the other hand, the Gini coefficient in rural areas remained unchanged at the level of 0.33.

Compared to other East African countries, Tanzania has a relatively lower level of inequality, with lower values of Gini coefficient, as shown in Table 5 below.

Table 5. Gini coefficients of three East African countries in the 1990s

Country	Gini coefficient	Share of total income	
		Bottom 10%	Top 10%
Kenya (1997)	0.45	1.8	34.9
Tanzania (1993)	0.38	2.8	30.1
Uganda (1999)	0.39	2.6	31.2

Source: World Bank 2001

The least poor 10 per cent of the population in both Kenya and Uganda controls a bigger share of national income than those in Tanzania. At the other end of the income distribution, the poorest 10 per cent of the population in Tanzania controls a bigger share of the national income than their counterparts in Kenya and Uganda.

While measures of income inequality show no significant increase in the 1990s, and Tanzania seems to be more equitable than other East African countries, inequality remains an issue that can have an adverse impact on efforts to reduce poverty.

[6] Gini coefficient measures inequality in the distribution of income. Its value ranges from zero to one, with zero representing perfect equality and one representing perfect inequality.

Decomposition of changes in poverty

Table 6 summarises the results of an analysis of changes in poverty which have taken place during the 1990s, from the date of the household budget survey in 1990/91 and that of 2000/01. The data in the table show the change in poverty rate nationally, in Dar es Salaam, other urban areas and in rural households, and then shows how much of this change is attributable to the effects of growth, how much to changes in inequality, and how much remains to be explained, the residual. [7]

The data in Table 6 show that generally, poverty reduction has been influenced to a greater extent by growth than by changes in inequality[8] or by any residual component. Moreover, growth had a greater impact on poverty reduction in areas where the rate of poverty was lower than in other areas, notably in Dar es Salaam.

Table 6. Decomposition of changes in poverty (%)

	Country level	Dar es Salaam	Other urban	Rural
Poverty 1991	38.6	28.1	28.7	40.8
Poverty 2001	35.4	17.6	26.0	38.7
Change 1991/2001	-3.2	-10.5	-2.7	-2.1
Growth impact	-8.4	-18.4	-6.6	-5.3
Inequality impact	5.5	12.4	4.0	2.7
Residual	-0.2	-4.5	-0.2	0.6

Source: World Bank 2005

The data also show that changes in inequality have adversely affected poverty reduction. The World Bank's analysis for the Country Economic Memorandum (2005) concluded that, whereas in the 1990s growth in Tanzania reduced poverty rates in all areas, changes in inequality mitigated the impact of this growth on poverty reduction. In Dar es Salaam, for example, the report indicates that all income groups benefited from growth, but the non-poor benefited more than proportionally. Had inequality not increased and the rate of growth remained the same, poverty in Dar es Salaam would have dropped an additional 10 percentage points.

Are MKUKUTA's poverty targets likely to be achieved?

Table 1 summarises the targets for various indicators of income poverty. In the case of GDP overall and its sectoral composition, growth rates are estimated on an annual basis. However, information to generate estimates of the incidence of poverty is generally available only on an infrequent basis. Even in countries with a well-established tradition of conducting national household surveys, it is not uncommon to find that surveys of household income and expenditure are 3 to 5 years apart. Projections of poverty rates, therefore, are commonly used in order to provide estimates when there are no direct estimates available from a survey. This section provides information about such projections beyond the 2000/01

[7] For further information on the decomposition of poverty into growth components, inequality components and residual, see Datt and Ravallion (1992)
[8] More discussion on inequality in relation to poverty reduction to follow

data and onwards in order to assess the likelihood that expected economic growth will be sufficient to attain the target of reducing the incidence of poverty by half by 2010.

Poverty projections

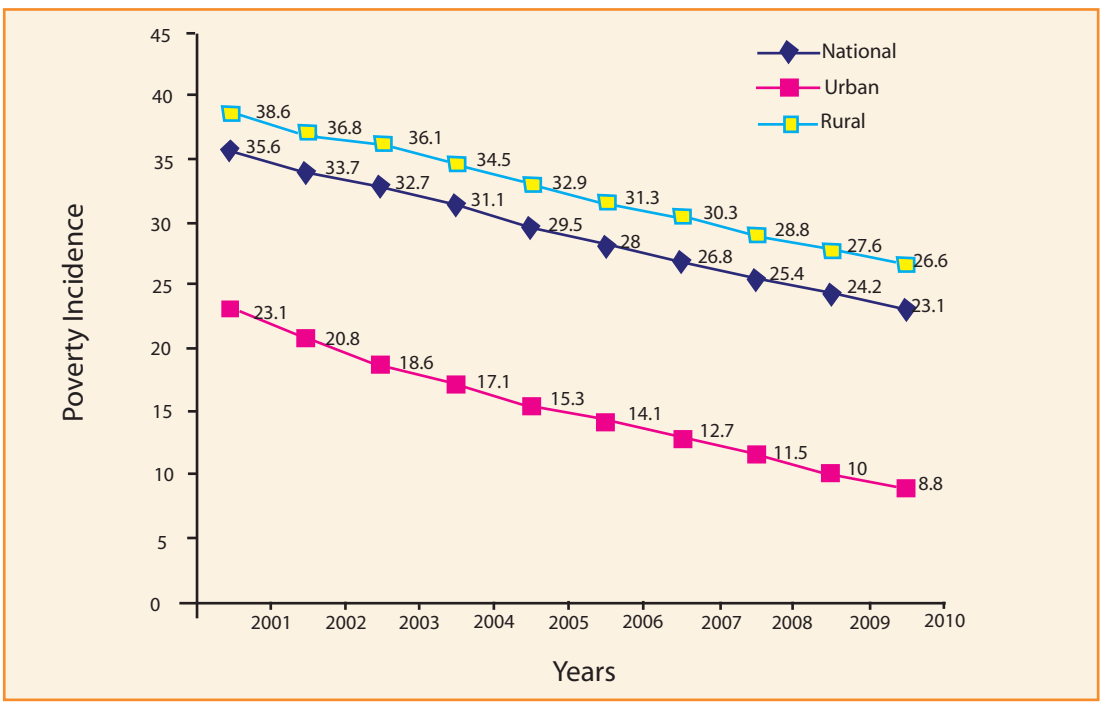
Growth and distribution need to be taken into account to project future rates of poverty. The following simplified assumptions have been made in order to generate the projections for the period of MKUKUTA:[9]

- the growth rate of per capita income (GDP) is used as a proxy for changes in consumption.
- to generate separate projections of rural and urban poverty rates, per capita growth in agricultural GDP and per capita growth in non-agricultural GDP are used as proxies for changes in rural and urban consumption respectively.

Many urban households engage in agricultural production, and many rural households' livelihoods depend on non-agricultural as well as agricultural enterprise. The direct association of rural households with agriculture and urban households with non-agriculture is a simplification, but one which is helpful for this exposition.

Figure 1 presents poverty projections to 2010. The projections have used actual per capita rural (agricultural) and urban (non-agricultural) growth rates for the period 2002 to 2004, available in the Government's Economic Survey. For the period from 2005 through 2010, the average growth rates for the period 2001 to 2004 have been used - per capita rural of 2.2 per cent and urban of 4.4 per cent. [10]

Figure 1. Projected poverty, 2001-2010



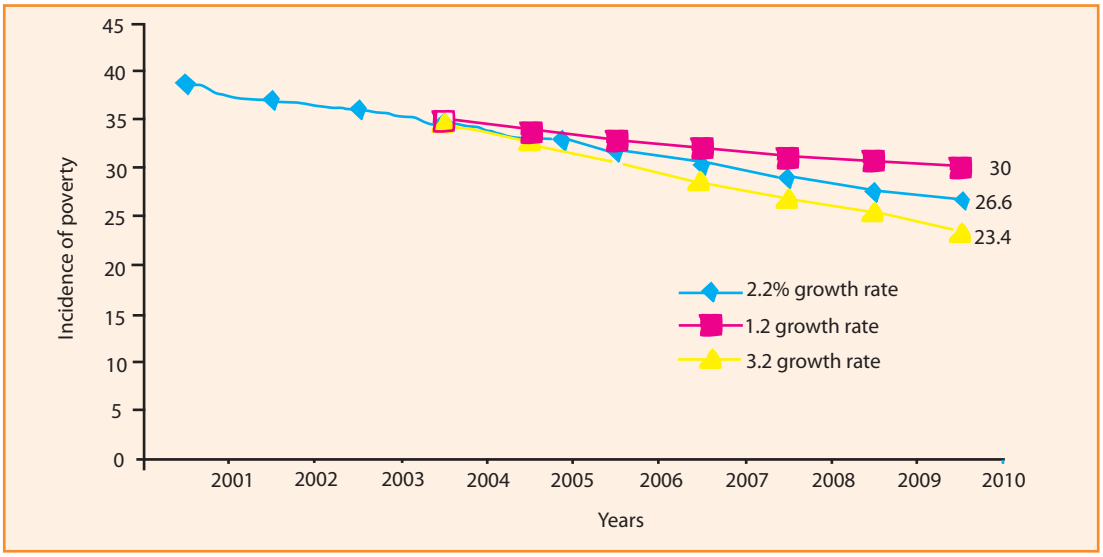
Source: Adapted from Demombynes and Hoogeveen, 2004

[9] Discussion of the uncertainties about this prediction will be discussed below
[10] In computing per capita growth rate an average population growth rate of 2.9 was used

If these growth rates are sustained over the period to 2010, MKUKUTA's aim of halving the incidence of poverty by the year 2010 will not be reached. The overall national poverty rate will be 23 per cent, as opposed to the target of 19 per cent. The disaggregated analysis, however, shows that a separate urban target will be reached. With a sustained urban growth rate of 4.4 per cent per annum, the rate of urban poverty is projected to be 8.8 per cent by 2010, compared with a target of 14 per cent. On the other hand, a continuing rural growth rate of 2.2 per cent per annum will result in a rural poverty rate of 26.6 per cent, compared with a target of 20 per cent.

These projections are based on a number of assumptions. Deviations from the rates of growth which have been projected will lead to different outcomes. For example, a small change in rural growth would lead to a substantial change in the rural poverty rate in 2010. Figure 1.2 shows projected rural poverty rates assuming average agricultural growth of 2.2 per cent, as well as 1.2 per cent and 3.2 per cent for the period 2005 to 2010.

Figure 2. Projected rural poverty with 1% more and less per capita agricultural growth



Source: Adapted from Demombynes and Hoogeveen, 2004

These projections show that with this smaller growth in agriculture, the rural poverty rate declines only to 30 per cent rather than 27 per cent. On the other hand, should agricultural growth be 3.3 per cent per annum, the projected rural poverty rate in 2010 would be 23 per cent, not too far off the target.

Other changes may take place. Migration from rural to urban areas is likely to affect the relative weight of agricultural to non-agricultural production. The likehood that increasing urban migration will lead to reduced overall poverty depends on whether migrants are able to take up higher income opportunities than those they left behind.

The projections are based on per capita growth in GDP in agricultural and non-agricultural sectors, since direct annual estimates of household income and expenditure are difficult and costly to generate. The use of per capita GDP growth as a proxy for changes in household poverty rates assumes that changes in growth mirror the changes in household expenditure. This may not necessarily be the case. If a substantial amount of growth is channelled into savings, for example, the direct relationship which has been assumed may no longer be valid.

Another factor which needs to be taken into account is the likely change in the terms of

trade between Tanzania and the rest of the world, and between agriculture (rural) and non-agricultural (urban) sectors within Tanzania. Prices – and relative prices – are important. GDP growth rates are measured at constant prices and so they do not take into account price changes over time which may differ between urban and rural and between Tanzania and its trading partners.[11] For an open economy such as Tanzania's, international terms of trade determine the extent to which changing earnings from exports result in increased purchasing power, and the consequent reduction in rates of poverty, taking into account the changing costs of imports.

During the 1990s, the composition of Tanzania's exports has changed substantially. Traditional export crops are a much smaller proportion of exports while minerals and tourism constitute a much larger proportion. Export prices for Tanzania's traditional cash crops have fallen over this period too. World market prices have fallen, but it is also possible that prices for Tanzanian exporters may have fallen because of lower quality exports. Both have implications for crop producers, and it is possible that the relative price changes have adversely affected rural households in Tanzania. There may be rising production, as captured in the GDP data, but this may not necessarily be associated with lower rates of rural poverty.

A similar assessment is involved in examining relative changes in poverty between rural (agricultural) and urban (non-agricultural). If their relative purchasing power changes because the relative prices of agricultural produce fall compared to the prices of goods and services provided by urban residents, increased rural production measured by agricultural GDP will not result in reduced poverty.

Conclusions and Recommendations

Summary of progress

GDP growth rates overall, and in agriculture, have increased with especially positive growth in 2004. The extent to which this growth results in reductions in poverty, and especially in reduced rural poverty, is mitigated by changes in inequality and may also be affected by changes in the terms of trade, both internationally and rural-urban.

Policy and operational issues identified

Rural growth is critical in reducing poverty in Tanzania, and growth in smallholder agriculture is most critical. Measures are needed to increase smallholders' productivity, to assist in improving the quality of produce and to command higher prices for their produce by moving up the value chain.

Recommendations for indicators and monitoring systems

The survey programme of the National Bureau of Statistics includes a household budget survey and an integrated labour force survey in 2005/06. New information will therefore be available from these surveys which will assist in a more complete assessment of changes in households' economic situation and poverty rates.

[11] It is only in a closed economy where growth rate of GDP can necessarily lead to poverty reduction after correcting inequality (Wuyts, 2005).

More information about changes in prices and terms of trade might usefully be incorporated into the monitoring system whose revision is under consideration.

Non - Income Poverty

The main operational targets of MKUKUTA concern education and health, nutrition, HIV/AIDS, water and sanitation and social protection. Effective universal access to quality public services is also a goal of cluster 2 in MKUKUTA.

A. EDUCATION

Table 7. Summary of data on education indicators

Indicator %	Year						Targets	
	1997-99	2000	2001	2002	2003	2004	PRS 2003	MKUKUTA 2010
Primary net enrolment ratio Girls Boys	57 58 56	59 60 59	66 66 66	81 79 82	89 87 90	91 90 91	90	99
Primary gross enrolment ratio Girls Boys	78 77 78	78 78 79	85 84 86	99 96 101	105 102 109	106 104 108	100	99
Cohort completing std 4	86 (1997)	86	-	-	84			95
Cohort completing std 7 Girls Boys	69 (1997) 73 76	70 70 69	74 76 71	-	72 72 73			90
Students passing PSLE Girls Boys	20 14 27	22 15 29	29 21 36	27 20 34	40 33 48		50	60 60 60
Enabling environment (primary school) Pupil/teacher ratio Pupil/desk ratio Pupil/classroom ratio			 46 4 80	 54 5 82	 57 5 81	 59 5 73		
Dip. & Grade A primary school teachers Pupil/diploma-grade A teachers			50 93			58 102		
Secondary net enrolment ratio [12] Girls Boys				6 7 6	7 7 6	8 9 7		50
Secondary gross enrolment ratio [13] Girls Boys				10 10 11	10 10 11	12 11 13		
Students passing form IV exams Girls Boys			64 56 71	77 72 81	88			70[14] 70 70
Proportion of 18-25 in higher education (above secondary)	-	-	-	0.5	-	-		
Literacy rate of population aged 15+ Female Male	-	71 64 80	-	69 62 78	-			80 80 80
Literacy rate of population aged 15-24 Female Male	-	82 80 84	-	78 76 81	-			

Sources: MoEC Basic Statistics Education (BSE) (various years); NBS (2002a), HBS 2000-01; NBS (2003), Census 2002.

[12] Secondary net enrolment includes all students who are enrolled in Forms I to IV and aged from 14 to 17 as the numerator, and the population of children aged from 14 to 17 as the denominator.

[13] Secondary gross enrolment uses all students enrolled in Form I to IV (regardless of age) as the numerator, and children aged from 14 to 17 as the denominator

[14] The MKUKUTA target is that at least 70 per cent of girls and boys pass at division I to III

Enrolment in primary education

There has been considerable progress in Tanzanian primary education, in particular in enrolment rates, following the implementation of the Primary Education Development Plan (PEDP) [15] in 2000. Children are entering school at an earlier age and there is an increase in the proportion of children going to school. Gross enrolment ratios went up from 78 in 2000, to 106[16] in 2004, surpassing the 100 PRS target set for 2003. During the same period, net enrolment went up from 59 to 91, achieving the 2003 PRS target of 90. The net enrolment of boys and girls is quite comparable. But there are increasing disparities over the years, with more over-aged boys retained in primary education.

Notwithstanding these remarkable achievements, data in Table 8 suggest that Standard 1 enrolment in 2003 and 2004 fell short of the PEDP targets by almost 20 per cent in 2004. Standard 1 enrolment is expected to stabilise in the long term. All the over-aged children should eventually be enrolled in primary school, leaving only the target group of seven year olds.

Table 8. Standard one enrolment: PEDP target versus actual

Year	PEDP Target enrolment	Actual enrolment	% deviation from target
2002	1,500,000	1,632,141	8.1
2003	1,600,000	1,481,354	-8.0
2004	1,640,969	1,368,315	-19.9

Source: URT 2001:5; URT 2002b:27; URT 2003b:16; URT 2004: 24.

A close scrutiny of the 2002 census data, from reports of children actually attending school, reveals that gross and net attendance ratios[17] in primary schools are lower than the reported gross and net enrolment ratios for the same year: 91 and 68 versus 99 and 81 respectively. The actual attendance of seven years olds was in fact less than 50, peaking to 82 for 11 year olds (see Figure 3 and Appendix Table A.2). These data also suggest a substantial number of over-aged children, in particular boys, in primary schools in 2002. For example, close to three fourths of all 14 year olds and almost a quarter of 17 year olds were still attending primary school according to the 2002 population census.

Further analysis[18] of enrolment figures suggests an over reporting of male and female pupils aged 8 and 9 years. This may have been the result of parents misreporting the age of their children to help ensure their enrolment through the PEDP which imposed much stricter school entry age requirements than had previously been the case (see Appendix Table A.3).

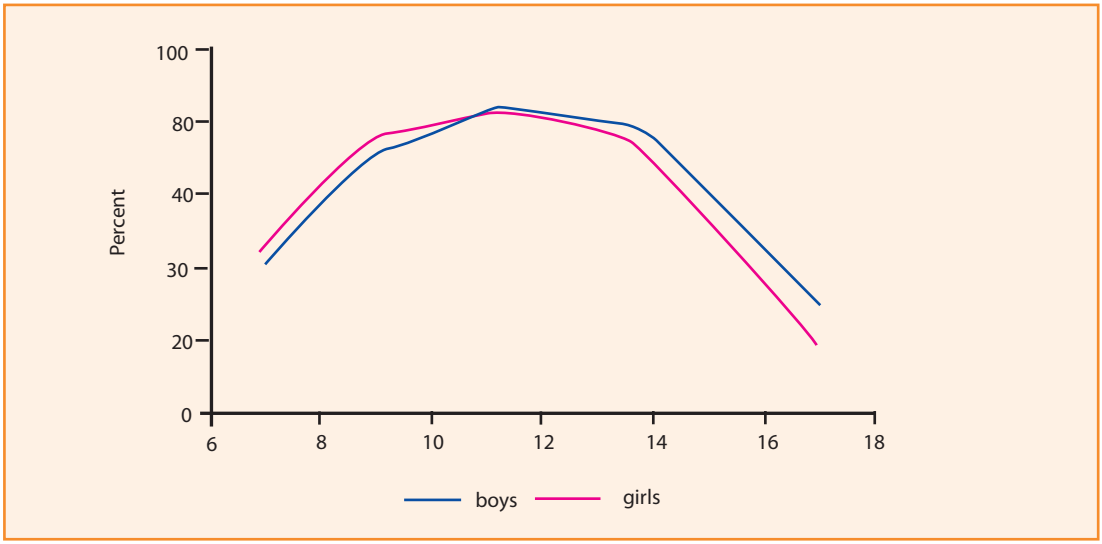
[15] A five year plan to achieve universal basic seven-year education by 2006, nine years ahead of the MDG target; government abolished school fees in primary schools.

[16] Gross enrolment ratios are calculated using all enrolled students as a numerator and children between the ages of 7 to 13 as the denominator. Since the numerator can include numbers of children outside the age range of those in the denominator, ratios can exceed 100. This happens when there are children outside the school going-ages (i.e. 7-13 years) enrolled in primary education.

[17] Attendance ratios refer to children actually going to school. Reported enrolment ratios are based on routine data.

[18] Applying official 2004 MoEC figures of reported net enrolment to 2002 census population projected to year 2004.

Figure 3. Primary school attendance by age, 2002



Source: NBS 2003, Census 2002

According to a rapid appraisal of school attendances in a few schools in Kilombero and Ulanga DSS (Demographic Surveillance Site) villages, for the most part children enrolled in schools attend classes most of the time (Msechu and Mtenga 2005). The 2003 Policy Service Satisfaction Survey (PSSS) found that parents are generally pleased with PEDP, with the abolition of school fees and the resultant expansion of enrolments (REPOA 2003). According to parents, the main achievements of PEDP are improved quality of school buildings (84 per cent), fall in the cost of schooling (73 per cent) and an increase in the number of classrooms (71 per cent). The poor were only slightly more appreciative of the cost reduction than the less poor (79 per cent versus 71 per cent).[19] Preliminary findings of the 2005 Afrobarometer survey suggest that roughly 85 per cent of the respondents believe that the current government is addressing educational needs 'very or fairly well' (REPOA, 2005).

Despite the availability of primary education free of school fees to all children, the cost for keeping a child in primary school can be considerable for a poor family: ranging from roughly TShs 20,000 in Geita to TShs 30-40,000 in Rombo (Ewald et al, 2004). Parents still have to meet some of the costs of primary education through community financing,[20] and in Kilombero and Ulanga this often results in poor attendance of students, especially those coming from poor families (Msechu and Mtenga 2005). As noted by the 2002/03 Tanzania Participatory Poverty Assessment (TzPPA), other factors limiting poor children's access to education include distance to schools, fewer schools and schools of poor quality in areas where the poor live, and having to engage in income generating activities (R&AWG 2004). According to PSSS (2003) findings, over a quarter (28 per cent) of the respondents knew of people who could not afford to send their children to school, a third of the poorest quintile

[19] REPOA (2003), page 21. Question: 'In the last three years, have you noticed any significant changes in the following?' Options: improvement, the same, deterioration, DK. Text figures indicate 'Improvements'.
[20] In the form of cash or labour.

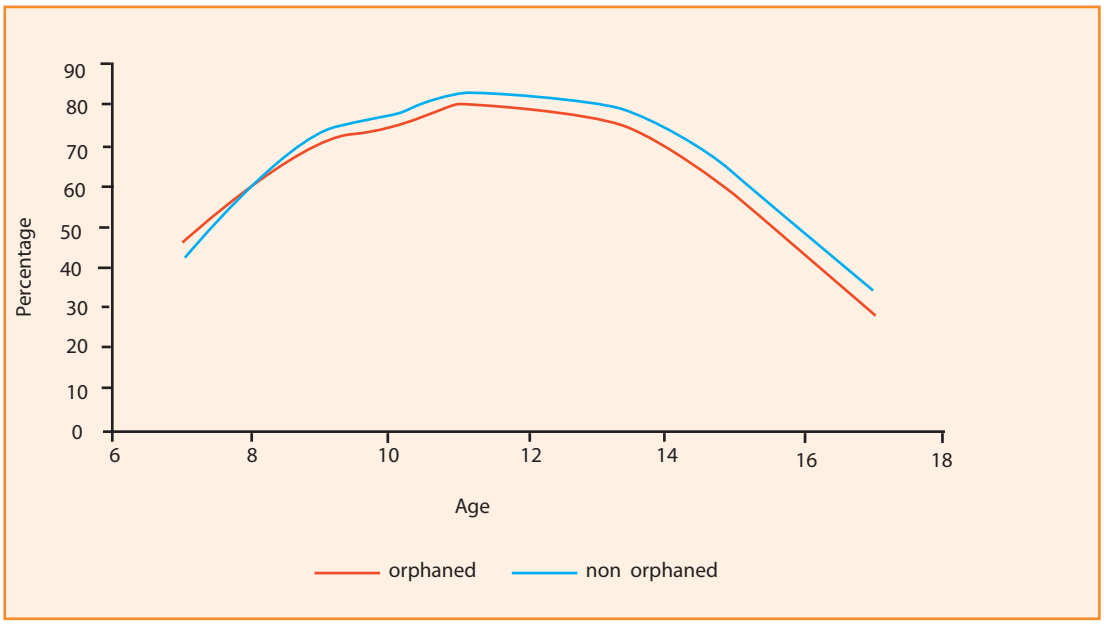
(32 per cent) compared to a quarter of the least poor. It seems therefore that some of the differences in enrolment across income groups evidenced in the pre-PEDP years[21] may well have continued its implementation.

> *"These days we are required to contribute a lot of money for building schools and buying desks and there is no mercy for those who cannot afford. Imagine one family having to pay TShs 20,000 as contribution for building the ward secondary school... and there are still other contributions related to primary schools... the child still needs to wear uniform..."*
>
> (Male focus group discussant, Kilombero Msechu and Mtenga, 2005: 15)

THE MOST VULNERABLE CHILDREN IN PRIMARY AND SECONDARY SCHOOLS

An objective of PEDP is to ensure primary schooling for all disadvantaged children, including orphans and children with disabilities (URT 2001). Figure 4 suggests that at entry age there is not much difference in attendance of orphaned (single and/or double) and non-orphaned children in primary schools. At later ages however, orphans do not fare as well though the differences are small. In contrast, attendance of children with a disability is much poorer than those without a disability in both primary and secondary schools (see Figure 5).

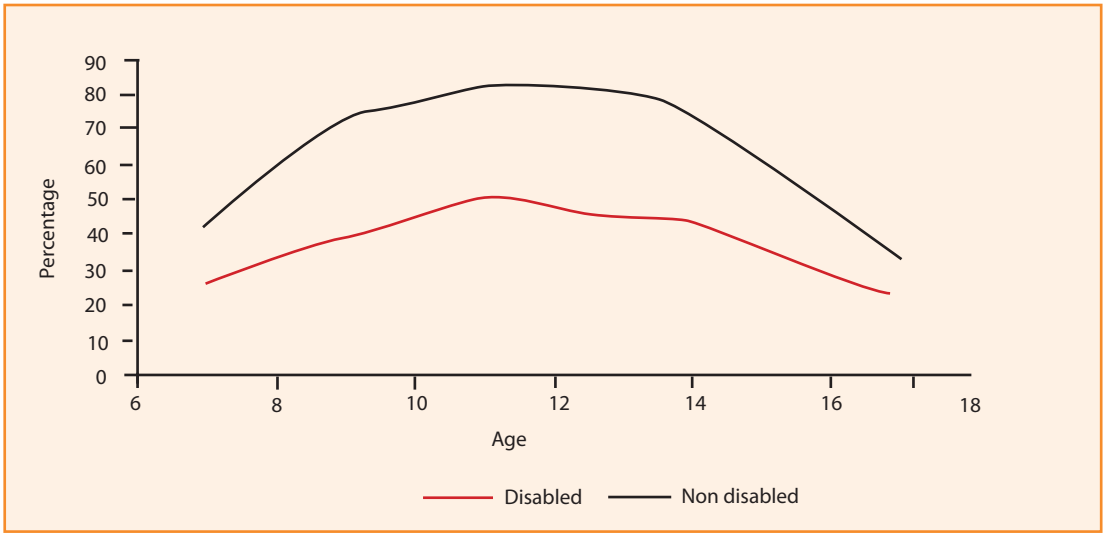
Figure 4. Attendance of orphans in primary/secondary schooling, 2002



Source: NBS (2003), Census 2002

[21] An important finding of the 2000/01 HBS was that attendance of children in the poorest households may have declined over the 1990s. Only 50 per cent of children aged from age 7 to 13 from the poorest households were in school compared to 66 per cent from better off households.

Figure 5. Attendance of children with disabilities in primary/secondary schooling, 2002



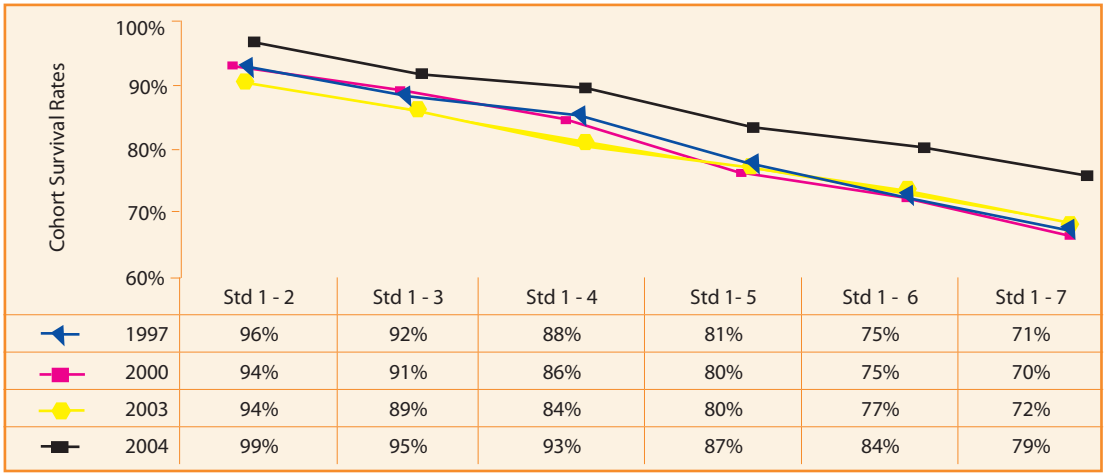
Source: NBS (2003), Census 2002

QUALITY OF PRIMARY EDUCATION

Several indicators of quality of education have been examined: retention rates and indicators of an enabling environment – pupil-teacher, pupil–desk and pupil- classroom ratios.

Retention rates[22] for 2003 were not very different from those observed in the pre-PEDP years (see Figure 6). Between 2000 and 2003, only around 70 per cent of the students who had entered Standard 1 completed Standard 7. Rates for 2004 however, reflect a dramatic improvement in the retention of the cohort. Compared to 2003, there was a 10 per cent increase in retention.

Figure 6. Cohort retention rates in primary school, overall, 1997-2004.



	Std 1 - 2	Std 1 - 3	Std 1 - 4	Std 1- 5	Std 1 - 6	Std 1 - 7
1997	96%	92%	88%	81%	75%	71%
2000	94%	91%	86%	80%	75%	70%
2003	94%	89%	84%	80%	77%	72%
2004	99%	95%	93%	87%	84%	79%

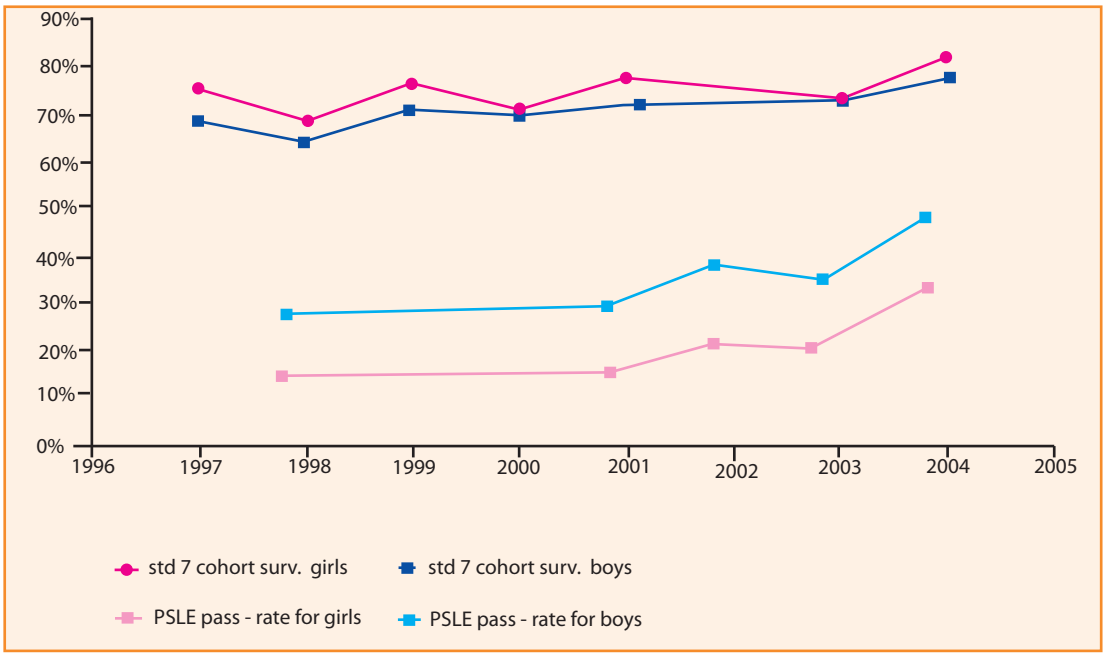
Source: MoEC: BSE 1997-2004

[22] These estimates of cohort retention rates are based on actual progression, dropout and repetition rates observed during a period of time and applied to a hypothetical cohort of children enrolled in Standard 1.

Compared to boys, the retention of girls within primary education appears to be marginally better (see Figure 7 and Appendix Tables A.4 and A.5). But there remain concerns regarding the performance of girls in Standard 7. Primary School Leaving Examination (PSLE) pass rates for boys have always been much better than for girls. Between 2000 and 2004, boys' performance exceeded girls' by about 15 percent. From 1997 to 2002, the overall pass rates fluctuated from between 20 and 30 per cent, with a substantial increase of 33 per cent from 2002 to 2003.

Follow-up work is warranted to provide insight into the possible underlying reasons behind this sudden and dramatic improvement from 2003 to 2004 - in retention and in PSLE pass rates, and generally in the variable performance between girls and boys.

Figure 7. Standard 7 cohort retention rates for boys and girls, and PSLE pass rates, 1997-2003



Source: MoEC: BSE 1997-2004

Three enabling environment indicators: pupil-teacher, pupil-desk and pupil-classroom ratios, reflect the conduciveness of the teaching environment and are indicators of the quality of education delivered. As indicated in Table 7, PEDP has been very successful in constructing new classrooms. The number of pupils per classroom decreased from 82 in 2002, to 73 in 2004. The number of new desks has also kept pace with the increasing number of pupils. However, enrolments have outpaced the hiring and training of new teachers, and the number of pupils for each teacher has increased on average from 54 in 2002, to 59 in 2004.

Overall, qualified teachers in primary schools, defined as those with a diploma or Grade A teachers, increased from 50 per cent of the total number of teachers in 2001 to 58 per cent

in 2004, a relative increase of 16 per cent. This increase in qualified teachers is not uniform across regions; it is more pronounced in Arusha, Dar es Salaam, Iringa, Kigoma, Mbeya, Lindi and Shinyanga (a more than 20 per cent increase), with hardly any changes in Kilimanjaro and Singida (less than 5 per cent) (see Appendix Table A.6). To assess access to quality teachers, it is important to consider the change in the ratio of pupils to qualified teachers. Primary pupils in only two regions experienced increased access to qualified teachers (in Dar es Salaam and Shinyanga). For most regions the situation has worsened. The number of pupils without qualified teachers has increased over the past three years. The situation is particularly acute in Mara and Mtwara which experienced a more than 30 per cent increase in pupil/qualified-teacher ratio.

Another very important indicator of an enabling learning environment is the pupil to textbook ratio. Results of the 2004 Public Expenditure Tracking Study (PETS) on primary education showed a decrease in the number of textbooks available in classrooms during the first two post-PEDP years compared to the pre-PEDP years (REPOA & MoF, GoT, 2004: 55). During this time a substantial amount of the funds sent to councils for the purchase of textbooks was not used in a timely fashion for this purpose.

In the Policy and Service Satisfaction Survey of 2003, almost half (45 per cent) of all parents interviewed were concerned about poor examination performance, and about 40 per cent mention the shortage of teachers, a lack of textbooks and large classes[23] as constituting "major problems" still facing the basic education system. When asked what the government should do to improve the education system, over 90 per cent said providing more textbooks was "very important." The main problems identified affect poor parents more than the better off, in particular poor examination results (REPOA 2003). A lack of clean water and toilets is also of concern, especially to poor, rural parents. A third of all parents are concerned with transparency in the use of money. Focus group discussions with parents of children attending schools in Kilombero and Ulanga DSS indicate that most are concerned with the lack of transparency in the use of funds from community contributions (Msechu & Mtenga 2005).[24]

Only 1 per cent of the PSSS respondents reported having paid a bribe to a teacher or head teacher in the previous 12 months - the lowest for the five sectors that were surveyed (police, health, judiciary and local government, listed in descending order of reported corruption). In the 2003 Afrobarometer survey, 45 per cent of the respondents thought there was "some corruption" in the education sector, an increase from 36 per cent in the 2001 survey. However, education scored 'below' the other sectors covered, namely (in descending order with the sector showing most corruption first) elected leader, government officials, police, customs officials, judges and magistrates, Tanzanian businessmen and foreign businessmen.

Altogether, the audits of the Ministry of Education have improved since the early nineties (TGNB 2005). After receiving an 'Adverse' opinion in Fiscal Years 1999 and 2000, the Ministry received a 'Qualified' opinion in the next three years. The share of expenditure questioned was down to less than 1% in Fiscal Year 2003. Fiscal Year 2002 was also the only year in which the Ministry of Education had a higher share of questioned expenditure than the national average, 7 per cent versus 4 per cent.

[23] In a study in Kinondoni District, the average number of pupils per classroom space in sample schools rose from 126 in 1999/2000 to 171 in 2000/2001, and decreased to 145 and 130 in the two subsequent years; sample schools had a range of 40 to 60 pupils per stream (TCDD 2003).

[24] Even though some financial reports are posted on school boards, they are not in places that are easily accessed by the community and not in a format that can be easily understood by most community members given the low literacy levels.

In summary, routine information pertaining to the quality of education is mixed. On the one hand many more classrooms have been constructed, but availability of textbooks and qualified teachers, compared to the increased numbers of pupils, has worsened over the past couple of years. On the other hand there are dramatic improvements in the reported PSLE pass rates.

Enrolment in secondary education

Gross and net secondary school enrolment rates [25] are recent additions to the list of poverty monitoring indicators. As shown in Table 7, the overall gross and net secondary enrolment increased from 10 to 12 per cent, and from 6 to 8 per cent, from 2002-2004, respectively.

An inadequate number of secondary schools was noted to be one of the key bottlenecks for secondary school enrolment. Following the successful implementation of PEDP in primary education, secondary education followed with its SEDP in the financial year 2003/04, focusing primarily on increasing the number of places in secondary schools to absorb the growing output of primary pupils. Available official figures for Form I enrolment in public and private schools indicate an absolute increase of almost 50 per cent from between 2003 and 2004 (see Appendix Table A.7).

Despite the much poorer performance of girls in PSLE, Form I enrolment data for 2004 suggest a near gender balance at entry level (see Appendix Table A.7). After Form IV however, the retention of girls drops substantially, and decreases further to a ratio of 2 boys to 1 girl in Form VI.

Of concern is the overall low transition from Form IV to Form V. Only 30 per cent of the 2003 Form IV cohort entered Form V in 2004. This could be for several reasons, including an inadequate number of available places, poor performance and inability to pay school fees.

Quality of secondary education

Data in Table 9 suggest substantial improvement in Form IV results from 2001 to 2003 in each of the Division I to III. In 2001 and 2002, boys reportedly performed much better than girls in each of the three divisions. Disaggregated data for 2003 are not available.

Table 9. Certificate of secondary education examination results, Divisions I to III,

Year	Division (per cent passed)								
	I			II			III		
	All	Male	Female	All	Male	Female	All	Male	Female
2001	3	4	1	4	5	2	12	15	8
2002	4	6	2	6	7	3	15	17	12
2003	8	-	-	8	-	-	24	-	-

Source: MoEC: BSE 2001-2004

[25] In calculating these rates, it is assumed that the target population of Form I to Form IV students are between 14 and 17 years of age.

Adult literacy

Literacy rates estimated from 2002 census data are comparable to HBS estimates (2000/01), though census rates were slightly lower (see Table 7). Males generally fare much better than females. The overall adult literacy rate (for 15 year-olds and older) is 78 per cent for males and 62 per cent for females. Literacy rates in the younger age group (15-24 years) are 81 per cent and 76 per cent, respectively – higher rates overall and with a much smaller gender differential.

Conclusions and recommendations

Summary of progress

Much of the information presented in this section is based on routine data from the Ministry of Education and Culture, and the conclusions are not different from those of the last PHDR in 2003.

PEDP has raised enrolment rates in primary school, and now SEDP is raising them in secondary. Actual primary attendance rates are lower than enrolment, with little gender differential, though boys tend to be in school at an older age than girls. Children with disabilities are much less likely to be in school than other children. Available survey and census data show little difference in attendance by younger, orphaned children compared to those who are not orphaned. After the age of 9, slightly smaller proportions of orphaned children are attending.

Issues of quality remain a concern. Though the number of classrooms and desks has increased with the higher number of children in school, the ratio of teachers to pupils has not kept pace with increased enrolment.

Nonetheless, estimates of the retention rate (the proportion of children enrolled in standard 1 who stay through standard 7) and the reported primary school leaving examination pass rates, both show improvement in 2004.

Policy and operational issues identified

Strategies are needed to facilitate access and enrolment of disabled children in school.

Many more teachers are needed to reduce pupil-teacher ratios, and continued training and retention of trained teachers is important so that the proportion of teachers who are qualified continues to increase.

More books are needed, and pupils' access to books needs to be more systematically reported through routine information systems and/or through more systematic tracking surveys.

Recommendations for indicators and monitoring systems

Information about early childhood and pre-schools is lacking, and needs to be included in routine data systems as well as in periodic surveys and population censuses.

For secondary and tertiary education, data for indicators of quality are lacking.

Much more information is needed from surveys and qualitative studies to shed light on the reasons for children's non-attendance, once enrolled in school, and strategies are needed

to facilitate higher levels of attendance.

Similarly, more systematic information is needed for tracking and research purposes and for communicating to a wider public. To understand and effectively address performance, the differences in performance between boys and girls, between different social and economic groups, and geographic differences, the following data are needed:

- an assessment of the flow of finances
- the availability of teachers
- the availability of critical teaching and learning inputs (especially books)
- the involvement of parents in school management committees

In addition, the reasons for recent improvements in retention rates and examination results need to be better understood.

B. Health

Several new sources of information about health, nutrition and HIV have been made available since the last PHDR, including new analyses of data from the 2002 population census, data from the 2003 HIV/AIDS indicator survey, the first in Tanzania to provide nationally representative data on HIV, and the 2003/04 demographic and health survey. They provide new information about progress towards national goals and targets and about geographic and other disparities in indicators of these development outcomes. They are summarised in the table below.

Table 10. Health indicators, Tanzania Mainland, 1999-2004.

Indicator %	Year					Targets	
	1996	1999	2002	2003	2004	PRS 2003	MKUKUTA 2010
Infant mortality rate[26] (per 1000 live births)						85	50
DHS	88	99			68		
Census			95				
Under-five mortality rate[26] (per 1000 live births)						127	79
DHS	137	147			112		
Census			162				
Life expectancy at birth	52 (1988)		51				
Female			52				
Male			50				
Children 12-23 months immunised against:							
Measles							
TRCHS/DHS	81	78			80		
EPI[27]		72	89		94		
DPT (3)						85	
TRCHS/DHS	85	81			86		
EPI[27]		76	89		94		
Prevalence of stunting in under-fives	44	44			38		20
Prevalence of wasting in under-fives	7	5			3		2
HIV prevalence among pregnant women							5
ANC surveillance			9.6				
THIS				6.8			

Table continued on next page

[26] Data recorded according to year of data collection, but for mortality data this refers to a number of years preceding the survey; e.g. the infant and under-five mortality rates refer to the number of infant and under-five deaths during the 5 years preceding the survey for the DHS, and 3 years preceding the census.

[27] EPI = Expanded Programme of Immunisation, Ministry of Health (routine data system)

Table 10. Health indicators, Tanzania Mainland, 1999-2004 (continued).

Indicator %						Targets	
	1996	1999	2002	2003	2004	PRS 2003	MKUKUTA 2010
HIV prevalence among men and women aged 15-24							
THIS							
Overall				3.5			
Male				3.0			
Female				4.0			
Blood donor estimates							
Overall		7.7	7.7	6.7			
Male		6.7	7.0	6.0			
Female		10.9	10.1	9.0			
Knowledge of HIV/AIDS transmission (THIS)							
AIDS virus can be transmitted to a child through breastfeeding							
Male				63.0			
Female				69.3			
With comprehensive knowledge[28]							
Male				54.2			
Female				46.3			
Maternal mortality ratio (per 100,000 live births)	529				578		265
Coverage of births attended by trained personnel[29]		36			46		80
Births taking place in health facility		44			47		
Population within 5kms of a health centre or dispensary	(1991/92)	(2000/01)					
Dar es Salaam	95	96					
Other urban	89	98					
Rural	77	68					
Tanzania Mainland	79	75					
Population within 10kms of a hospital	(1991/92)	(2000/01)					
Dar es Salaam	96	97					
Other urban	89	98					
Rural	45	36					
Tanzania Mainland	51	47					

Sources: NBS/Macro International 1996, TDHS 1996; NBS/Macro International 1999, TRCHS 1999; NBS/Macro International 2005, TDHS 2004/5; NBS 1993; HBS 1991/92; NBS 2002, HBS 2000/01; TACAIDS/NBS/Macro International 2005, THIS 2003-04.

[28] Comprehensive knowledge means knowing that consistent use of condoms and having just one uninfected, faithful partner can reduce the chance of getting the AIDS virus; knowing that a healthy-looking person can have the AIDS virus; and knowing that HIV cannot be transmitted by mosquito bites or by sharing food with a person who has AIDS.

[29] In the 2002 and 2003 P&HDR the concept of 'skilled' birth attendant was defined as a doctor and/or nurse/trained midwife. The preliminary 2004 TDHS defines a 'health professional' as Doctor/AMO, clinical officer, assistant clinical officer, nurse/midwife or MCH aide.

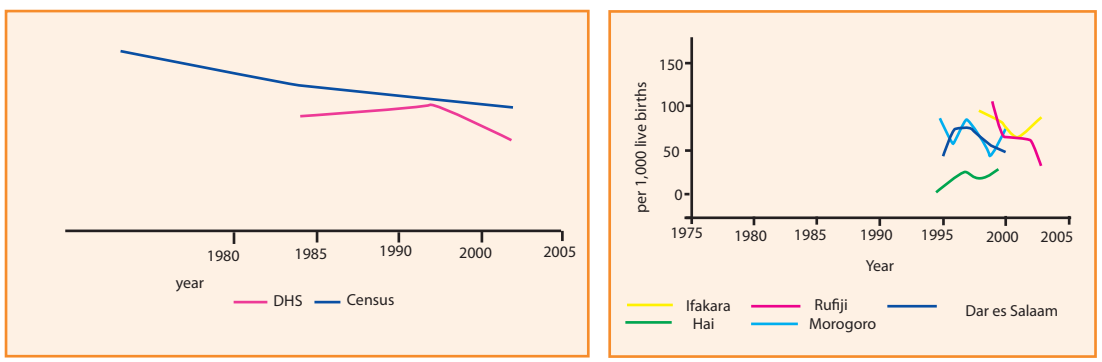
Infant and child mortality

The previous Poverty and Human Development Report (2003) reported stagnation in the decline of infant and child mortality in the late 1980s and up to the mid 1990s, followed by a slight increase in mortality thereafter (R&AWG 2003:30). [30] This increase was largely due to an increase in neonatal mortality, especially in urban areas, and was attributed to the increased prevalence of HIV/AIDS.

Analysis of data from the 2002 population census and more recent survey data, however, point to a reduction in mortality, with a particularly sharp drop in the most recent few years. Indirect estimates from census data show a decline in infant and under-five mortality rates during the period 1978 to 2002. Infant mortality fell from 137 to 95 per 1,000 live births, and under-five mortality from 231 to 162 per 1,000 live births. The trend generated by the preliminary 2004/05 DHS survey data is particularly optimistic. From the1999 and 2004/05 surveys, infant and under-five mortality declined from 99 to 68 and from 147 to 112 per 1,000 live births, respectively. Much of this decline is likely to be the result of improved malaria control – both increased use of preventive mosquito nets (detailed in the following section) and improved curative care through a more effective drug treatment. According to these estimates, both infant and child mortality rates have surpassed the 2003 PRS targets and if this decline can be sustained, the MDG targets for 2010 are within reach.

On the whole, available data from surveillance sites confirm the declining trend in infant and child mortality in recent years. Between 1995 and 2000, AMMP (Adult Mortality and Morbidity Project) data showed a decline in infant mortality of between 11 and 15 per cent in two of the three sentinel sites (Dar es Salaam and Morogoro Rural) (MoH/AMMP 2004) (see also Figure 8). Rufiji demographic surveillance site showed a 32 per cent decrease in infant mortality between 1999 and 2002 (PHDR 2003:33). Both surveillance systems show a comparable decline in child mortality rates. Surveillance data from Ifakara, on the other hand, suggest little change in infant mortality but an increase in child mortality from 1997 to 2003. As observed in Figure 8, surveillance data show a fluctuating trend, mainly due to the small number of observations that are subject to random annual fluctuations.

Figure 8. Infant mortality estimated from different sources



Source: NBS DHS 1991/92-2004, NBS Census 2002, AMMP, 2003 and Ifakara 2005

[30] Quoting DHS data from 1987-92, 1991-96 & 1994-99.

The introduction of evidence-based planning as part of the Tanzania Essential Health Interventions Project (TEHIP)[31] is largely responsible for the impressive decline in child mortality rates - by over 40 per cent - in the two districts of Rufiji and Morogoro. Interventions adopted included IMCI (Integrated Management of Childhood Illnesses)[32], syndromic management of sexually transmitted infections, safe motherhood initiative, treated bed nets, and TB treatment.

Census data from 2002 suggest considerable geographic variation in mortality rates. Regionally, infant and under-five mortality ranged from 41 and 58 deaths per 1,000 live births in Arusha, to 129 and 217 in Lindi. More disaggregated information about districts is provided in the next chapter. In summary, infant mortality ranged from 31 in Ngorongoro (Arusha region), to 148 deaths per 1,000 live births in Ruangwa (Lindi region). Compared to infants and under-fives in urban areas, those in the rural areas had higher mortality rates per 1,000 live births: for infants, 78 versus 99, and for under-fives, 123 versus 162. These urban/rural differences are confirmed by the 2004 demographic and health survey.

Surveillance data from Ifakara indicate that as expected, infants and under-fives of the poorest mothers had a higher probability of dying compared to those of mothers from the least poor quintiles. [33] The gap in infant mortality however, appears to be closing. Infant mortality in the poorest quintile showed a steady decline from 130 per 1,000 live births in1997, to 84 in 2003. In contrast, infant mortality in the least poor quintile seemed to fluctuate in the same time period, with an observed slight increase from 50 to 67 per 1,000 live births. The ratio of infant mortality in the lowest quintile to the highest quintile dropped from 2.6 in 1997 to 1.25 in 2003.[34] The respective ratio for Mainland Tanzania for the period 1996 to 1999 was 1.25 (TRCHS/DHS, 1999).

Malaria mortality and morbidity

Malaria is one of the most important causes of morbidity and mortality in infants and under-fives. The PRS indicator intended to reflect the burden of mortality due to malaria is based on information obtained from hospitals. Unfortunately, the Health Management Information System (HMIS) has not been able to provide it. Therefore, as in the 2003 PHDR, this section is based on population-based information obtained from demographic surveys and surveillance sites.

The 2004 TDHS data indicate that the percentage of under-fives reported to have had fever in the two weeks prior to the survey, a proxy indicator for malaria, declined from 35 per cent in 1999, to 23 per cent in 2004. Further, 58 per cent of under-fives with fever were given anti-malarial drugs, and there was little urban-rural difference (65 per cent versus 57 per cent).

The proportion of child deaths due to malaria/acute febrile illness, between 1993-1995 and 2000-2002, shows a slight decline in the three AMMP sentinel areas, ranging from 0.3 per cent in Morogoro to 7.0 per cent in Dar es Salaam (MoH/AMMP 1, 2004: 42). Ifakara data also suggest a decline in child deaths due to malaria or acute febrile illness: from 10.4 per

[31] In addition to improving health workers' performance to effectively deliver the interventions, along with small funding increases – US$1 per capita, simple user-friendly tools were introduced around 1997 to allow decentralized planners to incorporate burden of disease into their work in a manageable and practical way (de Savigny et al, 2004).

[32] Evidence from a study undertaken by Armstrong et al, 2004 suggests child mortality levels to be 13 per cent lower in the IMCI districts, than in comparison districts. IMCI was associated with 3.8 fewer deaths per 1,000 child years.

[33] IFAKARA DSS, 2005 unpublished

[34] Rufiji surveillance data also suggest a decline in under-five mortality rates between 1998 and 2000 for the better off as well as the poorest quintiles, though there are variations in improvement levels between the quintiles (Msechu and Mtenga 2005).

1,000 person years in 2000, to 3.7 per 1,000 person years in 2003.

Consistent use of bed nets, especially treated ones, is a key preventive measure in reducing malaria transmission. The proportion of households owning bed nets has increased from roughly 25 per cent nationally in 1999 (TRCHS 1999), to 46 per cent in 2004 (TDHS 2004/05). Even though, in comparison to rural households, roughly twice the proportion of urban households owned a bed net (74 per cent versus 36 per cent), there was little difference in the percentage of under-fives reported to have slept under a net (38 per cent versus 36 per cent). Regarding use of nets by pregnant women, according to the 2004/5 survey data, roughly 33 per cent had reportedly slept under a net, and 11 per cent under a treated net, the night before the survey.

Data from the National Malaria Control Program also suggest an increase in under fives sleeping under nets, and in particular those sleeping under treated nets. Bed net use increased from 46 per cent in 2001 to 53 per cent in 2003, and the use of treated nets increased from 15 to 26 per cent over the same time period (Joint Health Sector Review Meeting 2005).

The rollout of the Tanzania National Voucher Scheme (TNVS)[35] may further accelerate the use of treated nets in pregnant women and children under five. Effectively reaching out to all pregnant women, and especially the poorest, is a prerequisite to the success of the national voucher scheme.

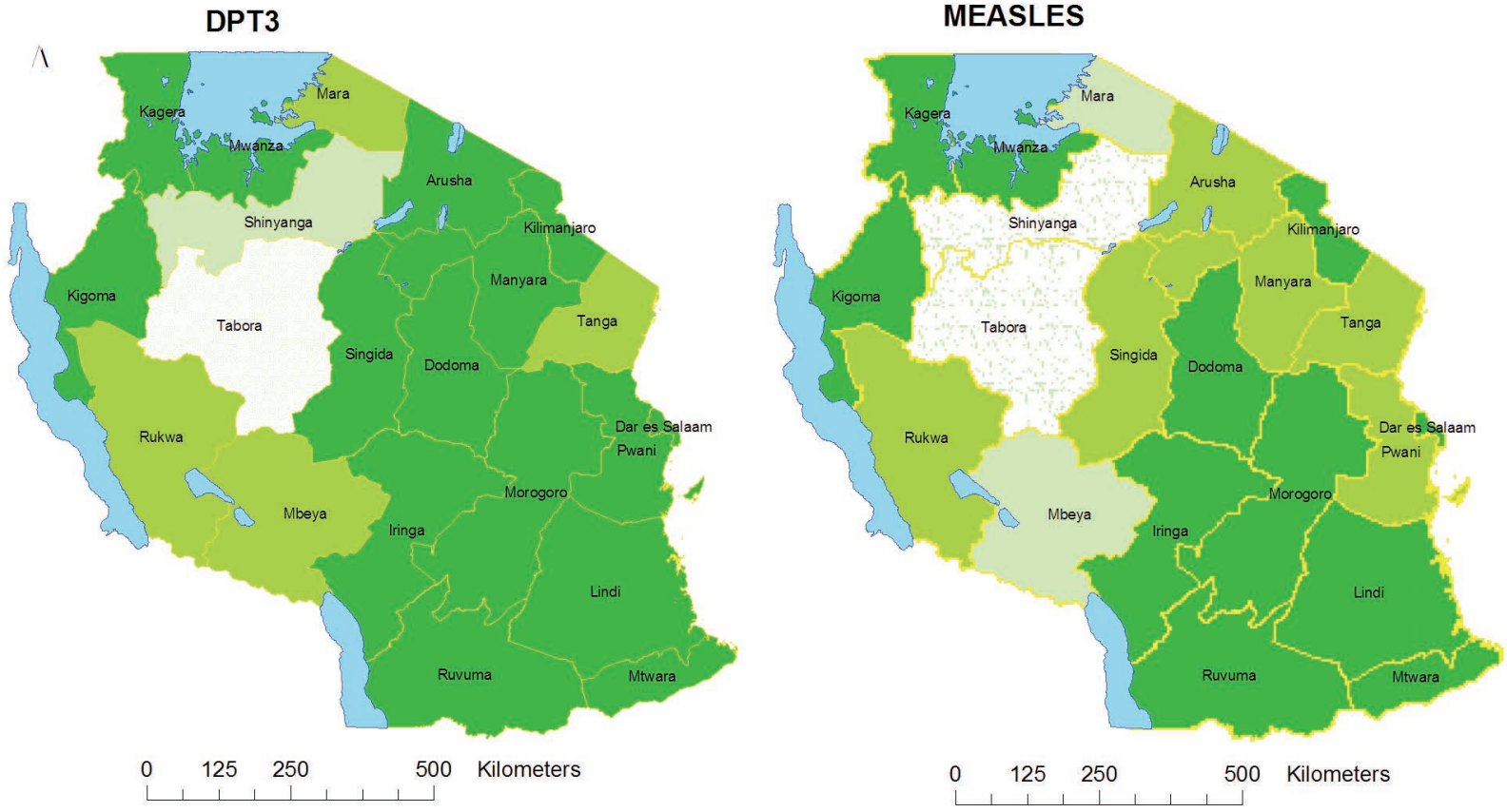
Child Immunisation

Tanzania continues to have high levels of child immunisation compared to other sub-Saharan countries. As shown in Figure 9, survey data indicate that the coverage of both DPT3 and measles vaccinations have returned to 1996 levels after a slight decline in 1999. The 2004 coverage rates are 80 per cent for measles and 86 per cent for DPT3, exceeding the 85 per cent DPT target that was set for 2003. In general, compared to the rural areas, coverage levels for both vaccinations is higher by about 10 percentage points in the urban areas. Available routine EPI data, on the other hand, show not only a slight continued improvement in the coverage of both DPT3 and measles vaccinations, but also at much higher levels. EPI's reported 2004 immunisation levels for both DPT3 and measles reached 94 per cent. Since EPI estimates are based on community assessments of the numbers of children, it is likely that the denominator is underestimated and therefore coverage rates overestimated.

Regional variations in DPT3 immunisation range from full coverage in the Eastern regions of Mtwara, Kilimanjaro and Morogoro, to less than 80 per cent in parts of western Tanzania, such as Rukwa, Tabora, Shinyanga and Mara. Map 1.1 shows the regional pattern of child immunisation. A somewhat similar pattern is observed when looking at measles, ranging from close to full coverage in Iringa and Kilimanjaro (above 95 per cent), to less than roughly 80 per cent in Mbeya, Tabora, Shinyanga and Mara. Generally, regions located in the Southeast tend to have better coverage of DPT3 and measles vaccination than those in the Northwest.

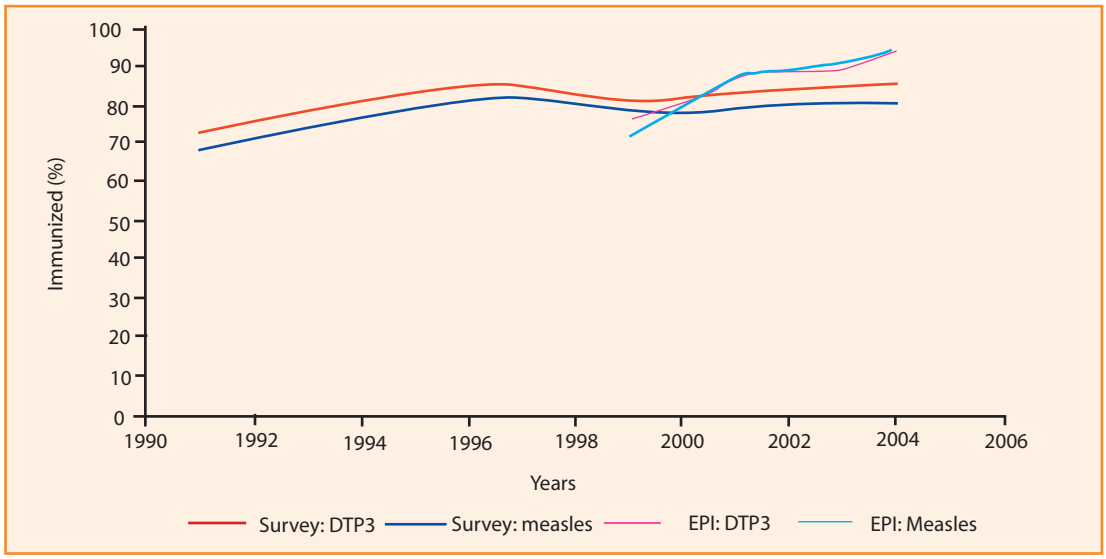
[35]The Scheme provides discount vouchers to all pregnant women attending antenatal clinics to purchase treated nets at a minimal cost. Recent figures from the Malaria Control Programme suggest that over 75 per cent of women who received a voucher used it to purchase an ITN (NATNETS Programme Tanzania, 2005).35

Map 1.1 Child Immunisation by Region,2004



SOURCE: Tanzania Demographic and Health Survey 2004-2005 Preliminary Report

Figure 9. Immunisation coverage, 1991-2004



Source: NBS, Macro 1992, 1996, 1999 and 2004/05 and Ministry of Health 2003-2005

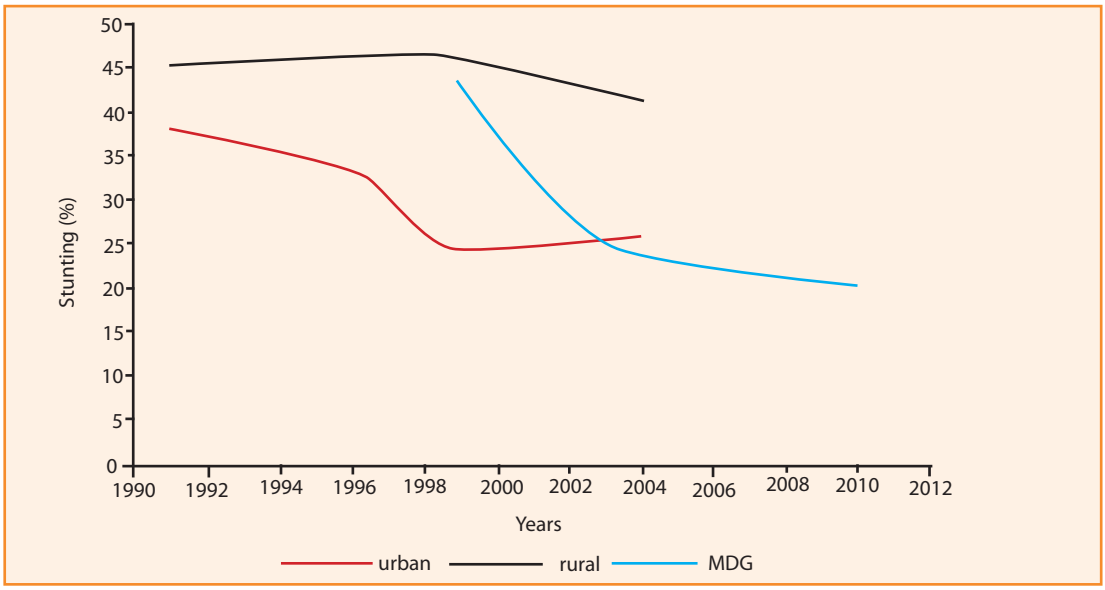
Child nutrition

Malnutrition continues to be a major cause of morbidity and mortality in under-fives in Tanzania. This is likely to be caused by inappropriate feeding practices and repeated incidences of childhood illnesses. Malnutrition starts with low birth weight, itself a manifestation of poor maternal health.

At the national level, under-five nutrition status did not change during the 1990s (DHS surveys). There is an improvement from 1999 to 2004, though this is much less substantial than the recent reductions in child mortality. The prevalence of stunting went down from 44 per cent in 1999 to 38 per cent in 2004. Wasting dropped from 5 per cent to 3 per cent during the same time period. Surveillance data from Rufiji and Ifakara also suggest a decrease in moderate and severe stunting in under-fives. From 1999 to 2002 the prevalence of stunting decreased from 42 to 32 in Ifakara, and from 44 to 34 in Rufiji.

It is the declining stunting rate in rural children which accounts for the recent improvements observed at the national level. Between 1999 and 2004, the prevalence of stunting in the urban areas increased slightly to 26 per cent. Rural rates on the other hand, declined from 48 per cent to 41 per cent in the same time period (see Figure 9). However, given the current still high rural rates, it is unlikely that Tanzania will reach the target of 20 per cent stunting set for 2010.

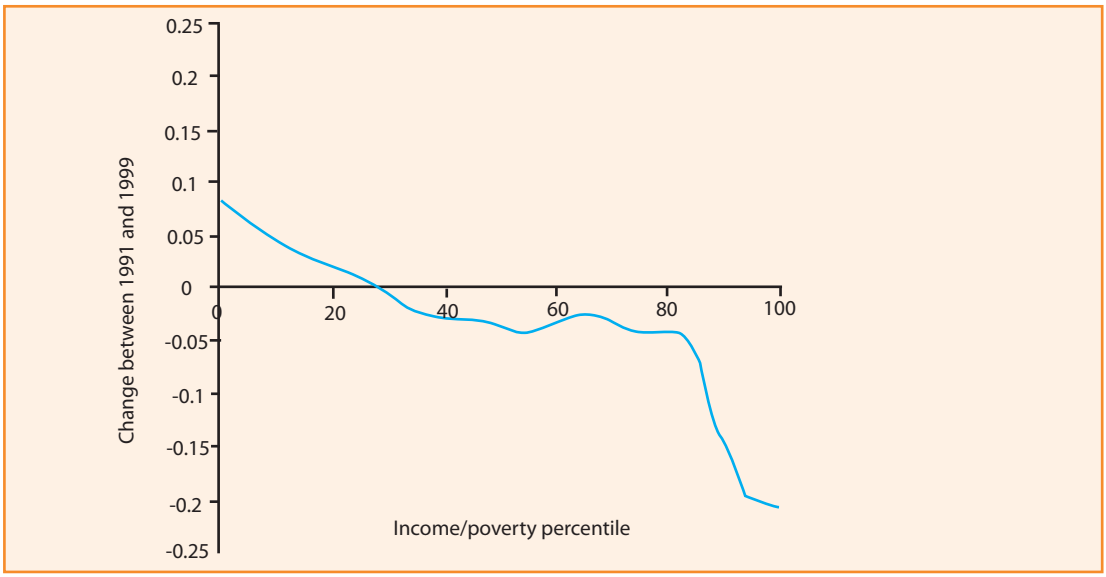
Figure 10. Prevalence of stunting in urban and rural areas, 1991-2004.



Source: DHS, 1991/92-2004

Findings of a recent study undertaken by REPOA[36] indicate a widening gap between the poorest and least poor between 1991/92 and 1999: an increase of roughly eight per cent in prevalence of stunting in children from the poorest households, and a large decrease of about 20 per cent in those from the least poor households (see Figure 11).

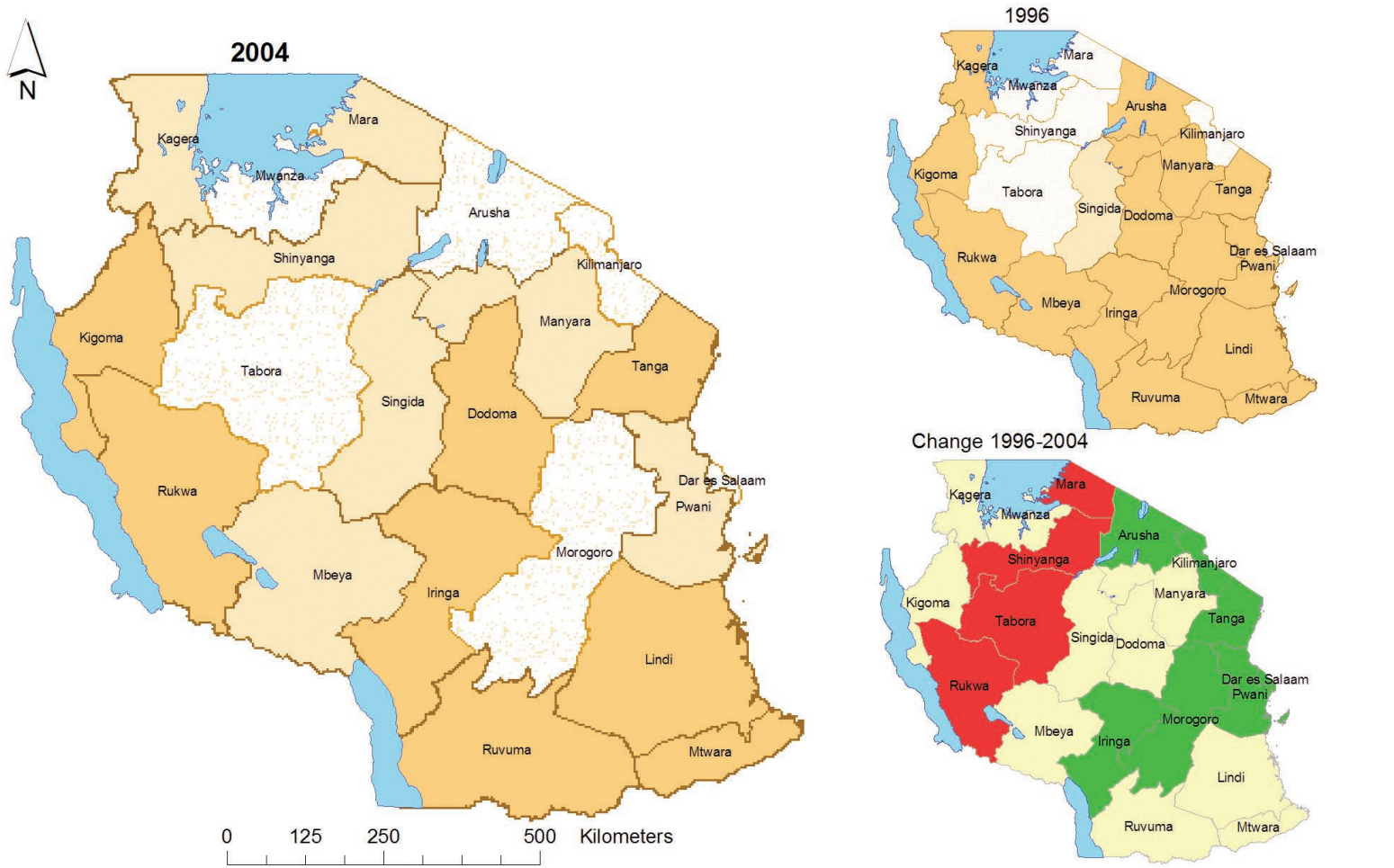
Figure 11. Proportion change in the prevalence of stunting by income/poverty percentile (concentration index growth curve), 1991-1999



Source: Lindeboom & Kilama, 2005

[36] The REPOA study analyses the DHS data-sets independently and pooled together

Map 1.2 Percentage of Children Stunted by Region, 2004 and 1996



SOURCE: Tanzania Demographic and Health Survey 1996 and Tanzania Demographic and Health Survey 2004-05 Preliminary report

Overall, children from roughly 30 per cent of the poorest households did not show any improvement in their nutritional status. Rather, the prevalence of stunting worsened in this group.

Children in most regions have a high prevalence of stunting, from 36 to 54 per cent. Map 1.2 shows the regional data for 2004 and the changes which have occurred since 1996.

Children in Dar es Salaam, Kilimanjaro, Arusha, Tabora and Mwanza have relatively better nutritional status, with prevalence rates of stunting ranging from 17 to 34 per cent. Map 1.2 also clearly shows that the percentage of under-fives who were stunted fell between 1996 and 2004 and major improvements can be observed in Iringa, Morogoro, Coast, Arusha and Kilimanjaro. Rates of stunting worsened in Mara, Shinyanga, Tabora and Rukwa, though stunting rates in Mara and Tabora still remain below the national average observed in the latest Demographic and Health Survey. Relating regional poverty estimates with the change in under-five stunting prevalence, it becomes clear that regions with lower rates of poverty showed higher rates of improvement in stunting, compared to poorer regions. (See also district based poverty maps in the next chapter.)

Child malnutrition is the result of inadequate feeding and care as well as childhood illness. More effective treatment and prevention of malaria is likely to result in improved nutritional status. At the same time, findings of a recent evaluation of a nutrition programme in Kagera stress the fundamental role of feeding interventions in reducing stunting in under-fives, in particular in the lowest income groups (Alderman et al, 2005).

HIV/AIDS

HIV/AIDS is considered to be one of the most impoverishing forces facing Tanzanians, mainly affecting individuals in the prime of their productive and childbearing years with consequent repercussions for their families (R&AWG 2004). Recent projections from ESRF (2003) show that by 2015, the economy will be 8.3 per cent smaller and the per capita GDP will be around 4 per cent lower as a result of HIV/AIDS.[37] The pandemic threatens to undermine the rights and well-being of Tanzanians in almost every aspect; in health and education, livelihood and food security, political and economic development.

Until 2004, HIV/AIDS prevalence estimates depended on blood donor data and on ANC (antenatal care) attendees in surveillance sites. These surveillance estimates are generated annually and therefore have the advantage of facilitating analyses of trends over time. The estimates, however, are not based on a national, geographically representative sample. Information is obtained from very specific sub-populations and is not representative of a cross-section of the Tanzanian population currently at risk. The 2003-04 Tanzania HIV/AIDS Indicator Survey (THIS) was the first attempt to produce reliable national and regional level estimates on the prevalence of HIV/AIDS in Tanzania (TACAIDS, NBS and Macro 2005).

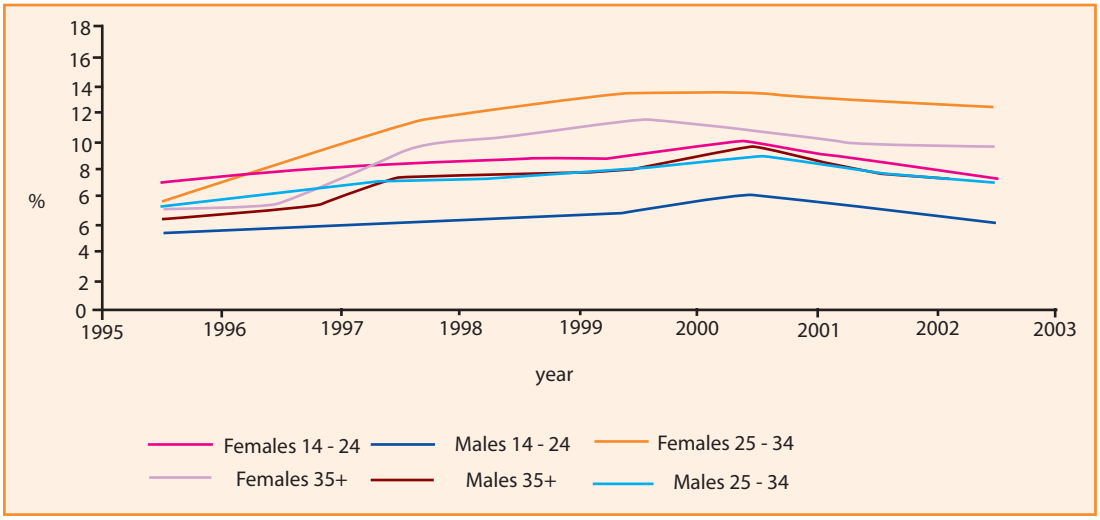
In contrast to earlier official national estimates [38], the recently released national survey data produce an estimate of the overall prevalence rate of 7 per cent, 7.7 per cent in females and 6.3 per cent in men. The new estimate implies that roughly 1,070,000 people [39] between

[37] The REPOA study analyses the DHS data-sets independently and pooled together
[38] Official national prevalence rate estimated at 12% at the first Joint Annual Review on HIV/AIDS in 2004.
[39] Rather than earlier estimates of 2+ million, current estimates are derived by applying national survey results to the national population of adults (updated from the 2002 census).

15-59 years are currently HIV positive: 610,000 women and 460,000 men. Data also indicate an average prevalence in pregnant women of 6.8 per cent which is lower than the 7.7 per cent estimated among all women. Surveillance data[40] from 2002 had reported a much higher prevalence rate of 9.6 per cent among ANC attendees (NACP No. 17, 2003: 11).

According to blood donor data, the percentage of the 14-24 year age group which is HIV positive has been on the decline since 2001, implying a decrease in new infections in both males and females (see Figure 12). The overall reported prevalence rate in 2003 was 8.8 per cent, 8.2 per cent for male blood donors, compared to 11.9 per cent in female blood donors (NACP No. 18, 2004:10).

Figure 12. Blood donor data: age and sex specific HIV prevalence, 1996-2003



Source: NACP Report No. 18, 2004

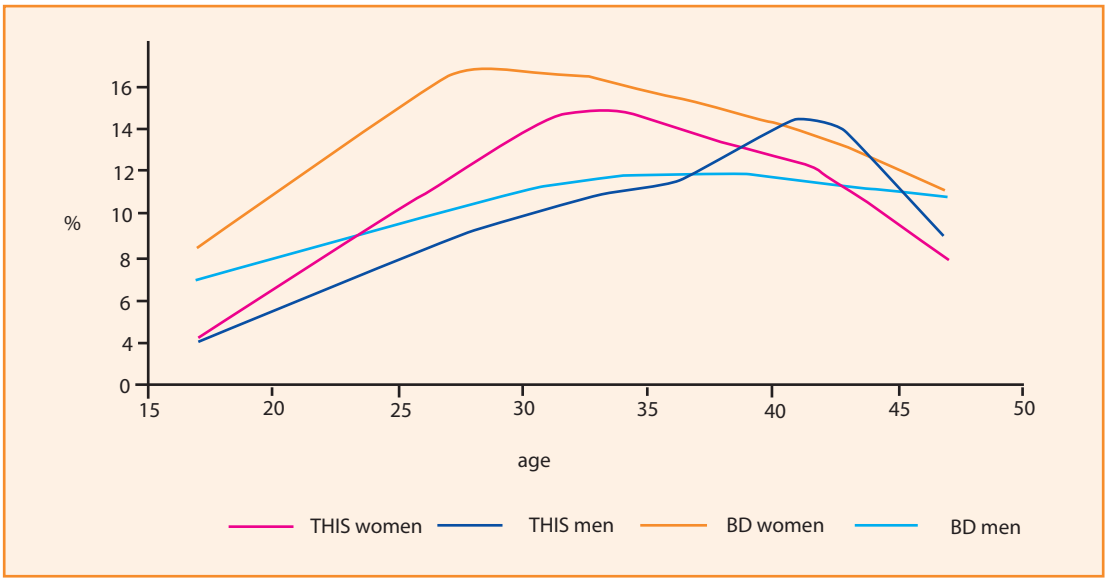
Women, in particular young women, are biologically and socially more vulnerable to infection. Women also tend to contract the infection earlier, and die younger, than men. As expected, survey data suggest that prevalence rates in women peak at an earlier age (13 per cent at 30-35 years) than in men (12 per cent at 40-45 years), though they peak much later than suggested by the female blood donor data (see Figure 13). [41]

These national averages conceal marked variations across geographical areas and across socio-economic groups. Survey data show substantial regional variation, ranging from an average prevalence of 2.0 per cent [42] in Manyara and Kigoma, to over 13 per cent in Iringa and Mbeya. Dar es Salaam has a prevalence rate of 10.9 per cent, higher than the national average of 7 per cent.

[40] Covers 24 antenatal clinics across 6 regions

[41] Blood donors, as mentioned earlier, are a select group and are likely to show a higher prevalence of HIV/AIDS when compared to the general population.

Figure 13. Age specific HIV prevalence rates by sex, 2003, 2004

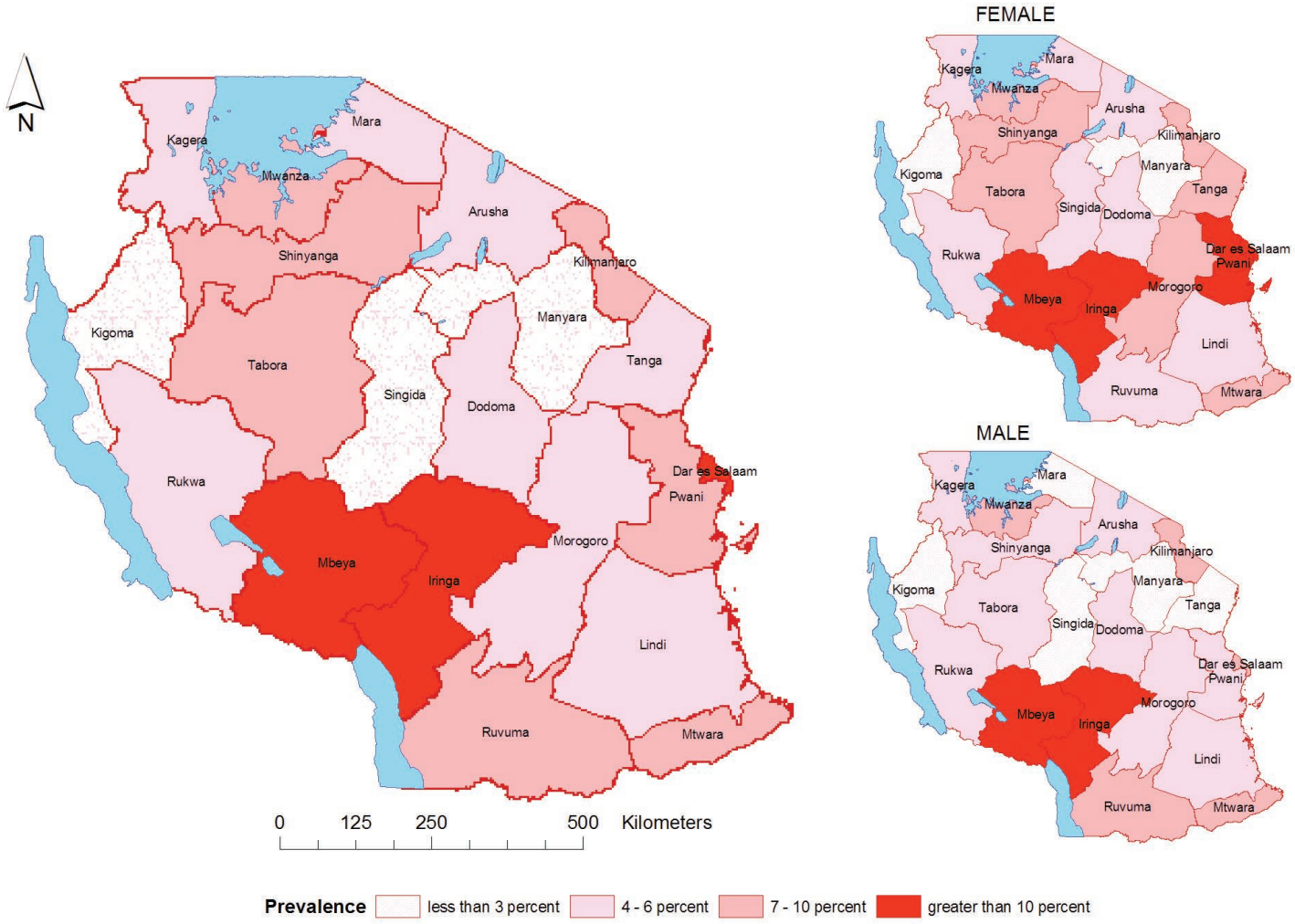


Source: NACP report No. 18, 2003 and TACAIDS, NBS and Macro 2005

The risk of being HIV positive is twice as high for residents of urban areas than for rural residents, and this is true for both men and women (see Figure 13). The overall urban infection rate is 12.0 per cent, compared to 5.8 per cent in the rural areas. Urban youths (15-24 years) – both female and male – are more likely to be infected than those in rural areas (5.5 per cent versus 2.5 per cent). [43] Data also suggest a positive relationship between HIV prevalence rates and wealth (3.4 per cent in the poorest quintile versus 10.5 per cent in the least poor quintile). Once again, similar trends are observed in both men and women. Of interest is the relatively higher HIV prevalence in men compared to women in the poorest quintile (4.1 per cent versus 2.8 per cent); and quite the opposite in the least poor quintile where women are more at risk than men (11.4 per cent versus 9.4 per cent). The difference between the poorest and the least poor may actually be even more pronounced than that estimated, given the higher non-response rate – about twice as high - in the least poor quintile, when compared to the poorest (18.4 per cent versus 9.8 per cent).

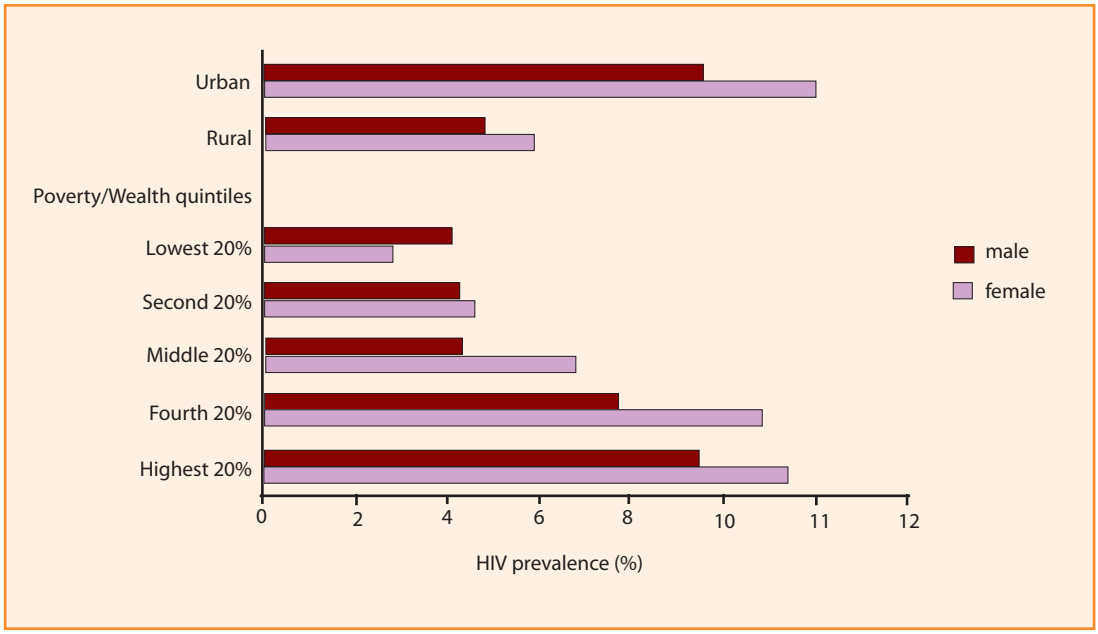
[42] 15-59 years, male and female
[43] TACAIDS, NBS and Macro 2005: 97.
[44] The odds-ratios were 1.33 and 1.098; statistically significant at 0.001.

Map 1.3 HIV Prevalence Rates for Adults Aged 15-49 Years, by Region 2003/04



SOURCE: Tanzania HIV/AIDS Indicator Survey 2003-04

Figure 14. HIV prevalence rates by residence and poverty/wealth status



Source: TACAIDS, NBS and Macro 2005

Further analysis reveals that in both rural and urban areas a reduction in poverty is associated with increasing HIV prevalence. In the rural areas, the probability of being HIV positive increases by 33 per cent as one moves from a lower to an upper quintile. The corresponding risk for an urban resident is 10 per cent. [44]

The overall increase in HIV prevalence in the past decade has also resulted in a continuing increase in the number of TB patients. This has occurred despite the fact that TB treatment completion rates improved from 76 per cent in 1998 to 80.7 per cent in 2002 (MoH, 2003-2005). More than 50 per cent of TB patients are HIV positive (Smithson 2005: 6).

Even if HIV prevalence has begun to decline, the impact will continue to increase because of the long incubation period between infection and death. The current burden of AIDS morbidity and mortality is likely to double over the next decade. It is imperative that HIV remains at the top of the policy agenda.

The poverty monitoring system does not identify specific indicators to assess knowledge of HIV/AIDS transmission. This section therefore proposes two indicators for which information is available from the national survey and which are also commonly covered by other behavioural surveys. One of the indicators is focused on mother to child transmission. The other is a composite measure of general knowledge regarding the transmission of HIV/AIDS.

National survey data suggest that most adults are informed about HIV and AIDS. At least two-thirds of the adults know the major facts about HIV transmission and prevention. Specific knowledge regarding HIV transmission or prevention, as indicated by responses to the individual knowledge areas, is widespread. But the composite measure suggests that collectively only about half of those interviewed had a deeper understanding of HIV. Nonetheless, when compared to the findings of the 1999 TRCHS, knowledge regarding transmission of HIV/AIDS appears to have improved significantly. Compared to men,

women's knowledge of condom use appears to have improved substantially in the last five years.

The one area where men and women are not well informed concerns the prevention of mother to child transmission. Data indicate that while between 70 per cent and 60 per cent of the interviewed men and women know that the virus can be transmitted to an infant through breastfeeding, less than 20 per cent are aware that this transmission can be stopped if both mother and baby take antiretroviral medication. This is not surprising since the prevention of mother to child programmes are still new in Tanzania.

Maternal health

Women's health status continues to be compromised by early and repeated pregnancies, and inadequate family planning and maternal health care services, especially in the rural areas. This has implications for both infant and maternal mortality and morbidity.

Data from the 2004/05 demographic and health survey show that pregnancy related mortality has not improved over the last two decades. The maternal mortality ratio for the period 1995 to 2004 was 578 per 100,000 live births, not significantly different from the 1987 to 1996 ratio of 529 per 100,000 live births. Surveillance of maternal mortality is being undertaken in some sites, but conclusions from the data so far are compromised by the small number of deaths in pregnant women and random fluctuations in both pregnancy related mortality and childbirth. The data which are available from surveillance in Ifakara suggest a substantial decline in the maternal mortality ratio, from 295 per 100,000 live births in 2000, to 160 in 2003.

Because of the difficulties in obtaining precise estimates of maternal mortality, a proxy indicator is monitored: assisted deliveries by health professionals. Nationally, between 1999 and 2004, there was a slight increase in the proportion of births assisted by health professionals, from 41 per cent in 1999 to 46 per cent in 2004. Estimates from earlier demographic and health surveys are not comparable to the most recent estimate based on 2004 survey data because of different definitions employed for 'skilled' attendance.[45]

Another proxy indicator for maternal mortality is the percentage of births taking place in a health facility. Survey data for the 1990s showed a steady decline from 53 per cent in 1991, to 44 per cent in 1999, and a slight improvement thereafter. By 2004, facility-based deliveries had reverted to 1996 levels of 47 per cent.

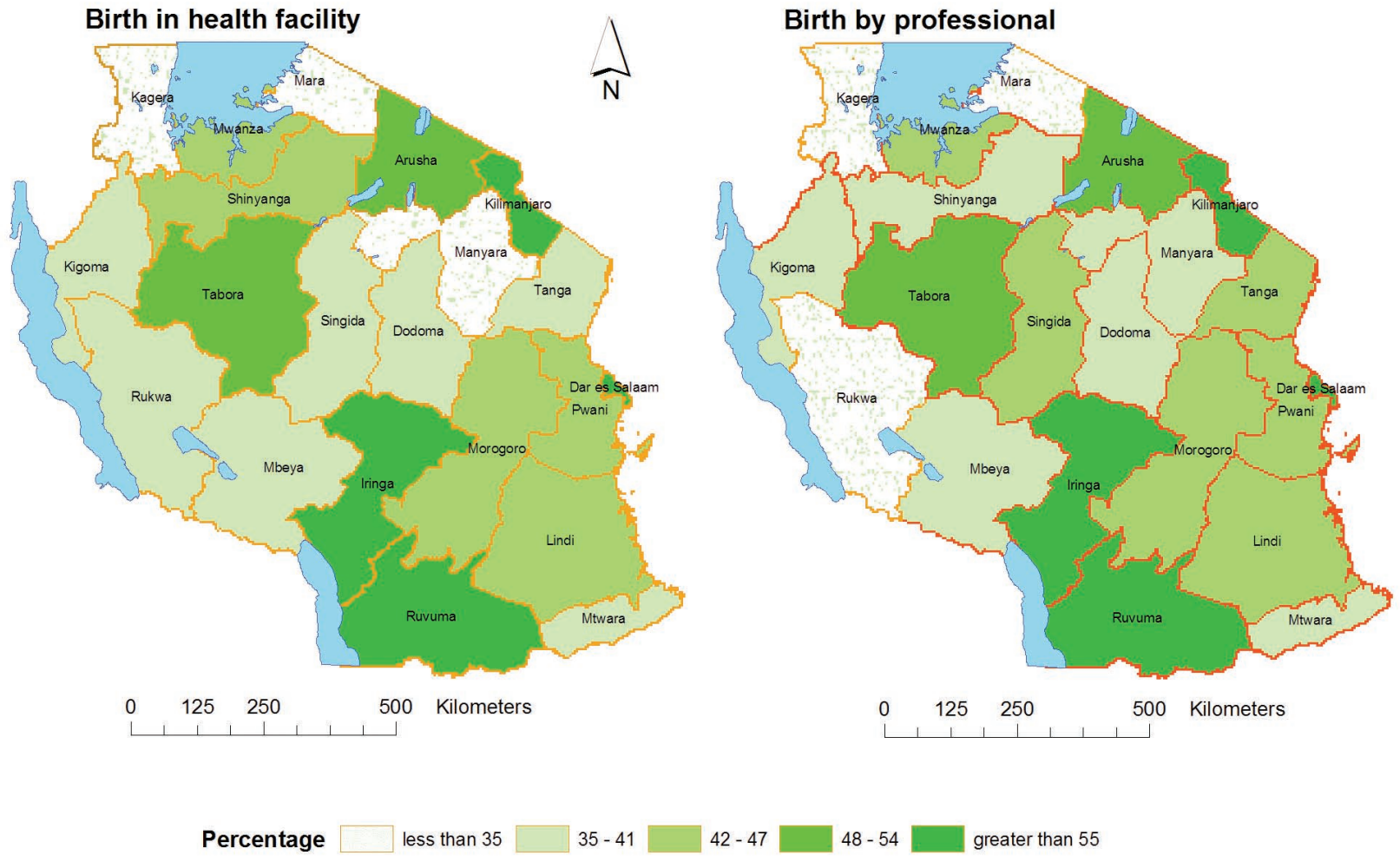
There is considerable urban/rural and regional variation in both these indicators. Urban women are twice as likely as rural women to have had a health provider in attendance during delivery, or to have delivered at a health facility (roughly 80 versus 39 per cent). Regionally, figures for both indicators ranged from about 30 per cent in Mara and Kagera to roughly 90 per cent in Dar es Salaam. In most regions, with the exception of Tabora, Arusha, Iringa, Ruvuma, Dar es Salaam and Kilimanjaro, less than 50 per cent of births take place at a health facility; or receive professional care. Furthermore, pregnant women in regions with relatively greater income poverty have less access to both health facilities and skilled attendants.[46] The data are shown in map 1.4 on the next page.

Effective access to quality health care, but especially to emergency obstetric care services, is a prerequisite to ensuring improved maternal health care.

[45] In the 2002 and 2003 P&HDR the concept of 'skilled' birth attendant was defined as a doctor and/or nurse/trained midwife. The preliminary 2004 TDHS defines a 'health professional' as Doctor/AMO, clinical officer, assistant clinical officer, nurse/midwife or MCH aide.

[46] r = -0.44, p-value = 0.045;r = -0.047, p-value = 0.032

Map 1.4 Percentage of Birth in Health Facility, Percentage Attended by a Professional, by Region, 2004



SOURCE: Tanzania Demographic and Health Survey 2004-2005 Preliminary Report

Access to quality health care

There remain many obstacles in accessing quality health care, including health care charges and other "unofficial" costs.[47] For example, there are long distances, inadequate and unaffordable transport systems, poor quality of care, poor governance and accountability mechanisms and poorly implemented exemption and waiver schemes meant to protect the most vulnerable and poor people (REPOA October 2005; RAWG 2005; Mamdani & Bangser 2004; RAWG 2004; REPOA 2003; SCF 2005; SDC 2003).

Exemptions, and waivers in particular, are not effective as a means of protecting vulnerable social groups and the very poor (IHRDC 2004, SCF 2004, SDC 2003). The absence of clear policy guidelines and the inherent difficulties entailed in defining who is poor and who is not, makes it very difficult to implement the waiver scheme. Also, communities are generally not adequately informed of exemptions and waivers, who qualify for them, and how to obtain them. Most important, facilities are generally discouraged from granting exemptions and waivers as they are not compensated for the resulting loss in revenue.

Several studies have shown that poor households with limited assets resort to a number of short-term survival strategies [48] to pay for health care, especially in emergencies and for chronic illnesses (Msechu and Mtenga 2005, REPOA 2004, Msuya et al. 2004, SCF 2003, SDC 2003, WDP 2004). This further impoverishes them and exacerbates the risks of long-term vulnerability.

The 2003 PSSS found that for 73 per cent of respondents, health care had become "less affordable" in the last 5 years (REPOA 2003). Cost of treatment was ranked as the most serious problem in the health sector, with 50 per cent stating it to be a "serious problem". When asked about personal experiences with corruption, 6 per cent reported having paid a bribe to a health worker in the previous 12 months - the second highest of any sector.

Proximity to primary health care facilities is good, especially in urban areas. Almost 100 per cent of the urban population and close to three-quarters of the rural population live within 5 kilometres of a health centre, or a dispensary (see Table 10). A comparison of HBS data from 1991/92 and 2000/01 suggests that, for Dar es Salaam based residents, the overall proximity to a health facility (hospitals/health centres/dispensaries) has remained almost the same, and has improved for those located in other urban areas. Whereas for the rural population it has slightly worsened, suggesting an increasing and/or a more scattered rural population. Access to essential referral care is perhaps the single most prominent barrier to health care for the poor; in addition to direct health care costs, those associated with transport and subsistence are prohibitive (ACCESS 2004).

Regarding quality of care, there have been improvements in the availability of drugs but some continuing deficiencies prevail.[49] The cost of drugs, in particular, still makes them unavailable to many poor people. The shortage of skilled providers continues to persist and is likely to be further aggravated in an attempt to meet the increased health care demands induced by HIV/AIDS. Altogether, many poor women in rural areas fail to access quality primary care when they need it most, and many more fail to obtain the necessary referral for more skilled care.

[47] For drugs and supplies, as well as unofficial payments

[48] Coping strategies include using their own savings, engaging in petty trade, borrowing money, taking a loan, selling critical assets, taking children out of school, reducing the number of meals taken in a day, etc.

[49] The situation of drug supplies has improved tremendously in facilities where the indent system - ordering health supplies according to demand - has been adopted, but most facilities still experience drug shortages especially towards the end of ordering quarters. Overall, most rural dispensaries are characterised by having inadequately trained staff, experiencing frequent drug stock outs, being poorly equipped, providing short and inadequate patient consultations, poor prescribing practices and long waiting times (Msechu & Mtenga, 2005).

There appears to be an absolute shortage of resources at the primary health facility level, which in turn impacts negatively on the quality of care delivered (RAWG 2004). From 2001/02 to 2004/05, the total per capita expenditure, and that at the local government level, doubled: from roughly TShs 4,200 to TShs 8,700, and from about TShs 1,400 to about TShs 2,400 (see Table 11).[50] But in real terms this increase would be substantially less. In addition, it is not clear how much of the released amount was actually made available at the primary facility level.

There have been two national public expenditure tracking studies[51] covering the health sector: the 1999 and the 2001 studies covering three and five districts, respectively. The 1999 study found that only 12 per cent of the funds reached the intended beneficiaries. The 2001 study found that less then half the funds reached the intended beneficiaries.

Table 11. Total and per capita actual health expenditure in Tanzania, Fiscal Years 2000 to 2004

	2001/02		2002/03		2003/04		2004/05	
	TShs billion	TShs per capita	TShs billion	TShs per capita	TShs billion	TShs per capita	TShs billion	TShs per capita
Local Government	47.73	1,400	59.18	1,700	66.09	1,900	87.28	2,400
Total	141.05	4,200	176.36	5,100	220.10	6,300	312.81	8,700

Source: MoF Public Expenditure Review, 2005 and authors' calculations using NBS, Census 2002

Note: To obtain population estimates for the non-census years, an annual growth rate of 2.5 per cent was applied. Figures for 2004/05 are budgeted numbers and not actual expenditure.

All in all, adequate management and information systems have not been put in place to ensure appropriate collection and utilisation of fees. Also, communities do not have access to relevant information - about budgets, incomes, expenditures, use of medical supplies, etc. - and are generally not involved in the planning and financial management of health services. Further, reliable mechanisms for raising concerns and for channelling these to the district level for action are not in place. Essentially, communities are not able to ensure the effective use of available resources.

Interestingly, the most recent Afrobarometer results show a marked improvement in the respondents' assessment of the Government's performance in the health sector. In 2001, 50 per cent of respondents thought the Government was performing well, while in 2003 this had gone up to 70 per cent, and remains at that level according to preliminary results for 2005. According to the Auditor General's Report, the Audits of the Ministry of Health have improved since the late 1990s (TGNB 2005). Whereas it received an adverse opinion in Fiscal Years 1999 and 2000, it received a qualified opinion from Fiscal Year 2001 to Fiscal Year 2003. Also there has been a significant decrease in the amount of questioned expenditures, from 46 per cent in Fiscal Year 1999 to 4 per cent in Fiscal Year 2002, although it went up again to 5 per cent in Fiscal Year 2003, slightly above the national average of 4 per cent.

[50] These figures relate to the health expenditure, and exclude off-budget support and incomes from cost sharing.

[51] REPOA and ESRF 2001. "Pro Poor Expenditure Tracking," draft report submitted to the PER Working Group, March 2001, Dar es Salaam; and Price Waterhouse Coopers 1999. "Tanzania Public Expenditure Review: Health and Education Financial Tracking Study," commissioned by the Government of Tanzania and DfID, March 1999, Dar es Salaam.

HUMAN RESOURCES IN THE HEALTH SECTOR

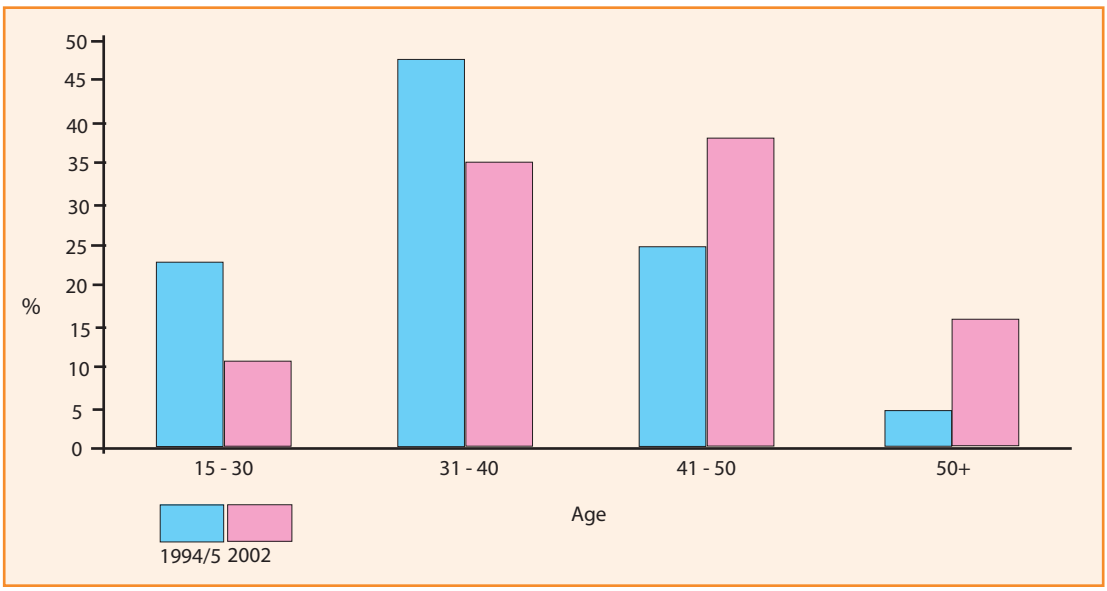
Human resources are the single most important input in the health sector. The most pressing problems facing the health system are a lack of health personnel, sufficiently trained and appropriately deployed, and poor health worker performance (Mliga, Mwakilasa & Mwakalukwa, 2005).

The total number of active health workers in 2001/02 was estimated at 54,200, with unskilled workers forming the largest group (31 per cent), followed by the professional group of nurses and midwives (24 per cent) (Kurowski et al, 2003: 24 [52]). Between 1994/5 and 2001/02, the number of active health workers per 100,000 population decreased by 35 per cent: from the observed 249.4 to an estimated 162.1 per 100,000 population. Shortage of health staff is even more acute when differentiated by cadres, with significant deficits among skilled health professionals.

The estimated ratios of currently active professionals per 100,000 population are 38.9 for nurses, 2.5 for physicians and 25.3 for medical cadres (i.e. medical officers, assistant medical officers and clinical officers).

The decline in human resource followed a freeze in civil service employment adopted by the Government in1993 [53]; it is also responsible for the ageing cohort that will need to be replaced within the very near future (see Figure 15). Roughly 50 per cent of all budgeted

Figure 15. Age composition of health sector employees, 1994/5 – 2002



Source: Kurowski et al, 2003

Deployment of available health workers is highly imbalanced (Kurowski et al, 2003). Overall, 65 per cent of the 54,200 health workers in 2002 were located in the public sector, 22 per cent in private not-for-profit and 14 per cent in private-for-profit. Roughly 84 per

[52] Study based on a survey sample of 23 districts. Corresponding absolute numbers are roughly 67,600 and 54,200; estimates are based on a sample of the 2001/02 human resource census data; per capita figures are calculated using NBS, Census 1988 and 2002, using the 1988 census and an exponential annual growth rate of 2.7%, n=7.

[53] The employment freeze was lifted in 1998 for priority sectors, including health.

cent of the health workers, mainly constituting low skilled cadres, were employed in the rural areas. The16 per cent who are employed in urban areas represent a disproportionate share of high skilled cadres. Even after corrections for infrastructure [54], regional variation in staff per population remains significant, and the disparities are even greater at the district level. The number of nursing staff per 10,000 population for example, varied between 1.6 in Mkuranga and 16.2 in Ilala. These disparities are also confirmed by findings of a recent facility-based survey of the current status of human resource quality, availability and distribution in six districts of Northern Tanzania (covering 129 facilities) (Olsen OE, Ndeki S, Norheim OF, 2005).

The barriers to improving the human resource situation are many and imposing, in particular for highly skilled workers in the public sector who are overburdened, poorly paid and working under conditions that are demoralizing (Kurowski et al., 2003; Mliga, Mwakilasa & Mwakalukwa, 2005).

Poor health worker motivation and performance is commonly manifested in many of the documented issues faced by patients: in lack of courtesy to patients, illegitimate charging for drugs and equipment, high levels of absenteeism, "dual practice", and poor task performance such as failure to conduct proper patient examinations. These problems among health staff not only negatively affect quality of care, but also reduce the utilisation of health services and ultimately impact negatively on health outcomes. According to Kurowski et al (2003), staff productivity was around 57.5 per cent [55]. Through improved staff management and optimised staffing levels, the potential exists to achieve a productivity gain of 30 per cent (for example, by addressing breaks, waits for patients, social contacts, unexplained absences).

Existing constraints in staffing are likely to be further aggravated by the HIV epidemic's impact on increased mortality and morbidity in the work force; and because of increasing demands placed on the health sector for additional care of those infected, and the rolling out of the national treatment plan. Unless many of the aforementioned issues are addressed, there is the real possibility both of failing adequately to respond to the HIV/AIDS epidemic, and of hampering effective delivery of essential health care.

Conclusions and Recommendations

Summary of progress

Recent data indicate substantial reductions in infant and under-five mortality and more modestly reduced rates of child malnutrition, though the prevalence of stunting in children, 38%, is still very high. Life expectancy at birth, now estimated from the 2002 population census at 51, is little changed compared to the estimate from the 1988 census. Maternal mortality is unchanged and continues to be very high, now estimated to be 578 (per 100,000 live births).

More effective prevention and treatment of malaria are likely to be important contributors to improved health, especially to the reduction in infant and under-five mortality. Immunisation rates have been sustained at a high level.

Newly available information which is nationally representative indicates an HIV prevalence rate in adults of 6.8 per cent. This implies that about 1 million adults in Tanzania are HIV positive.

[54] 55% of the active workforce is employed in hospitals, 13% in health centres and 32% in dispensaries.

[55] Based on time and motion studies in 10 public facilities in the Rufiji district and Kinondoni and Ilala Municipalities; defined as the time health workers spent on patient care, outreach activities, administrative tasks, in meetings, in training activities, on cleaning, preparatory and maintenance activities, and research.

There remain substantial urban-rural, regional and socio-economic differences. Rural poor children are more likely than their urban counterparts to die, and when they survive are more likely to be malnourished.

Evidence of changing disparities over time is mixed. In less poor regions/districts and less poor households, rates of stunting in children improved to a greater extent than in poorer areas, but overall, rural children experienced a reduction in rates of stunting, while urban children did not, between 1996-2004. Analysis of infant mortality in the 1990s suggests a widening gap between the poorest and less poor. This may be evidence of greater inequities in outcomes. However, more recent health measures might help redress this.

Policy and operational issues identified

The lack of qualified human resources for health care is a major limiting factor in implementing health policies and health reforms within the country. One of the major challenges is securing the availability and effective use of qualified human resources. Strategies need to be put in place to increase effective capacity and performance, primarily in the public sector. The TEHIP experience is useful here. Training and innovative management tools (for building district planning capacity and improving the performance of health workers) towards improved productivity were key to its success.[56]

The continuing high rate of child malnutrition, especially in young children, remains a concern and needs attention, with special focus on very young children and mothers, especially adolescent mothers. Strategies for improved feeding practices for young children need to be explored.

High rates of maternal mortality need to be reduced. Emergency obstetric care needs to be improved, and access to antenatal care and delivery facilitated, including improved referral services, especially for poor and rural women.

Recommendations for indicators and monitoring systems

More analytic work is needed with the data sets now available from the census and the demographic and health survey to explore socio-economic differences in health outcomes. This analytic work can be complemented by greater systematic use of panel studies and information from surveillance sites.

Focused facility based surveys can be useful in monitoring the quality of care provided.

The monitoring system does not adequately attend to the needs of adolescents. In the absence of adequate information on adolescent fertility and reproductive and sexual behaviour, it is not possible to assess the effectiveness of programmes that aim to promote gender equity, safe reproduction and the retention of girls in primary and secondary education.

Further analysis is needed of future financing strategies towards improved health care delivery and their equity implications.

More systematic use of tracking surveys would be helpful to assess the flow of resources to primary health care facilities and to better understand the use of these resources and their impact on the quality of health services. The tracking surveys need to include information not only about financing for "other charges," but also for supplies of drugs and other medical supplies.

[56] The MoH is working towards activating the Zonal Training Centre system, with national scaling up of the TEHIP Tools and IMCI.

C. VULNERABLE CHILDREN

The Poverty Reduction Strategy and MKUKUTA have recognized the problems of groups of people who are particularly vulnerable and who therefore need special attention. There are data from the population census which shed some light on the conditions of specific groups who might be considered to be most at risk, and they are presented here.

The general perception of vulnerable groups, including vulnerable children, is that they live under disadvantaged conditions and that they are therefore more likely to be poor. Except for the Labour Force Survey which explicitly sought information on working children,[57] specific vulnerable groups go largely undetected in most surveys. The small size of these groups makes them statistically invisible, especially in small surveys. Poverty mapping techniques[58] and analysis of the 2002 population census data has made it possible to assess in greater detail some specific aspects of vulnerability. Estimates of income poverty and indicators of vulnerability are possible at district level, allowing for a geographic focus. In addition, it is possible to attribute poverty based on information from the household budget survey to individual characteristics as reported in the population census.

Since MKUKUTA puts special emphasis on the protection of vulnerable children, and particularly the increasing numbers of those who have been orphaned, analysis with poverty mapping techniques has been undertaken to look into aspects of vulnerability among:

- children with a disability
- children who have lost at least one parent (single or double orphans)
- children living in child-headed households
- children living in households with adults aged 60 and above (i.e. without 'productive' adults)[59]

A study on poverty among people with disabilities (Lindeboom 2005) also looked into the educational attainment of children from households headed by a person with a disability.

Additional work could be undertaken for similar analyses of other groups which can be identified from the census information, such as the elderly, and it is expected that this will be done in the near future.

Children with a disability

There is a clear link between the prevalence of disability among children and district poverty levels. The disabled tend to live in poorer areas. Also at the household/individual level there appears to be a relation between poverty and child disability. The application of poverty mapping techniques for small socio-economic groups suggests that children from households with disabled children have higher probabilities of being poor than those from households without disabled children.

Children with disabilities have relatively low primary school attendance, and there is a marked difference in years of schooling between disabled and non-disabled children.

[57] See Poverty and Human Development Report 2003 and Chapter 3, Spatial Analysis, below.
[58] The methodology is summarised in the following chapter, Spatial Analysis, and in more detail in Kilama and Lindeboom, et al., Where are the Poor in Tanzania, forthcoming.
[59] Study on Vulnerable Children (UNICEF, 2005 under revision)

Thus, at the age of 17, children with disabilities have missed 4 years of primary education compared to 1.7 years among children without disabilities.

Orphanhood

The relationship between orphanhood and poverty mirrors the association between poverty and HIV/AIDS prevalence at district level. Orphanhood, in particular maternal orphanhood, is more prevalent in better-off districts which also have higher population densities.

At the individual level the relationship between orphanhood and poverty is more intuitive, though it is not a strong one. Slightly more children from households with orphans are estimated to be living below the poverty line compared to children from households without orphans (42 per cent compared with 37 per cent). Living conditions, indicated by the availability of household assets, access to clean water and housing characteristics, do not seem to differ between households with orphans and those without orphans.

Though differences are small, census data also suggest that a slightly larger proportion of orphaned children is working, compared to non-orphaned children, and these differences are more pronounced in urban than in rural areas. Differences in years of primary schooling between orphaned children and others are also small. At the age of 17, orphaned and non-orphaned children lack, on average, 2 and 1.7 years of primary education, respectively.

Children from child-headed households

Geographically, child-headed households are more common in urban than in rural areas, and in better-off districts.

At an individual level, children from child-headed households are more likely to be working than children from adult-headed households. Roughly 16 per cent of 10 year olds from child-headed households were working (paid, unpaid or self employed), compared to 10 per cent of children of the same age from adult-headed households, and a larger percentage of urban children than rural children were working.

There are very small differences in years of schooling between children from child-headed households compared to those from adult-headed households, and this shows up only among rural children, where there is a 0.3 year gap in years of primary education among 17 year-olds; 2.3 years missed for those from child-headed households and 2 years missed for children aged 17 from adult-headed households.

Children living with the elderly

The elderly and older children play an increasing role in caring for people living with HIV/AIDS and orphaned children. Households consisting of only elderly persons and children (without adults in the productive age-groups) are more prevalent in rural areas (3.4 per cent versus 0.7 per cent in Dar es Salaam and 1.7 per cent in other urban areas). In the district-level analysis, overall, such households do not appear to be disproportionately poorer than others. In rural areas, living conditions of children from households with elderly persons and children are comparable with those of children from households with adults in the productive age-groups. In urban areas, however, these children seem to be worse off in terms of possession of household assets, energy use, use of improved drinking water sources and quality of housing.

Neither years of schooling nor working status seems to be influenced by the absence of productive adults in the household. The differences in lack of years of primary education and the proportion of children working are small and not statistically significant.

Children from households headed by a disabled person

The disability of the head of a household is likely to be an important impoverishing force for the household as a whole and, given the general belief that poverty is inter-generational, it is fair to assume that children will also be impoverished.

According to Lindeboom (2005), within urban areas there were substantial differences in household and housing characteristics between households headed by a person with a disability and other households. Urban households headed by a disabled person were worse off in terms of household assets and quality of housing. These differences were also observed in rural areas but were less pronounced.

The number of years of schooling of children in households headed by a person with a disability are slightly fewer than those of children in other households; again differences being more pronounced in urban compared to rural areas.

Small and statistically insignificant differences were found in the proportion of children working in households headed by a person with a disability compared with children in other households.

What makes children vulnerable?

Given the limited set of indicators provided by the 2002 Housing and Population Census, it is not possible to assess all aspects of children's vulnerability. Results from two studies, one on vulnerable children, the other on disability, suggest that household conditions have a limited impact on years of schooling and working status. These impacts are felt more within urban than rural environments.

It should be noted that this conclusion is the result of an initial analysis of the quantitative information available from national data sets. This analysis needs to be complemented by more qualitative, sociological analyses and more specific follow-up in smaller areas of the country where the indications are that children, households and communities are disproportionately more vulnerable.

A category of children that is significantly deprived of opportunities is children living with a disability. They tend to live in poorer areas. Further, their educational performance lags far behind that of physically able children. Census data suggest that the number of disabled children is relatively small, though it is likely that the number is under-reported. Their specific educational needs merit priority attention.

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.

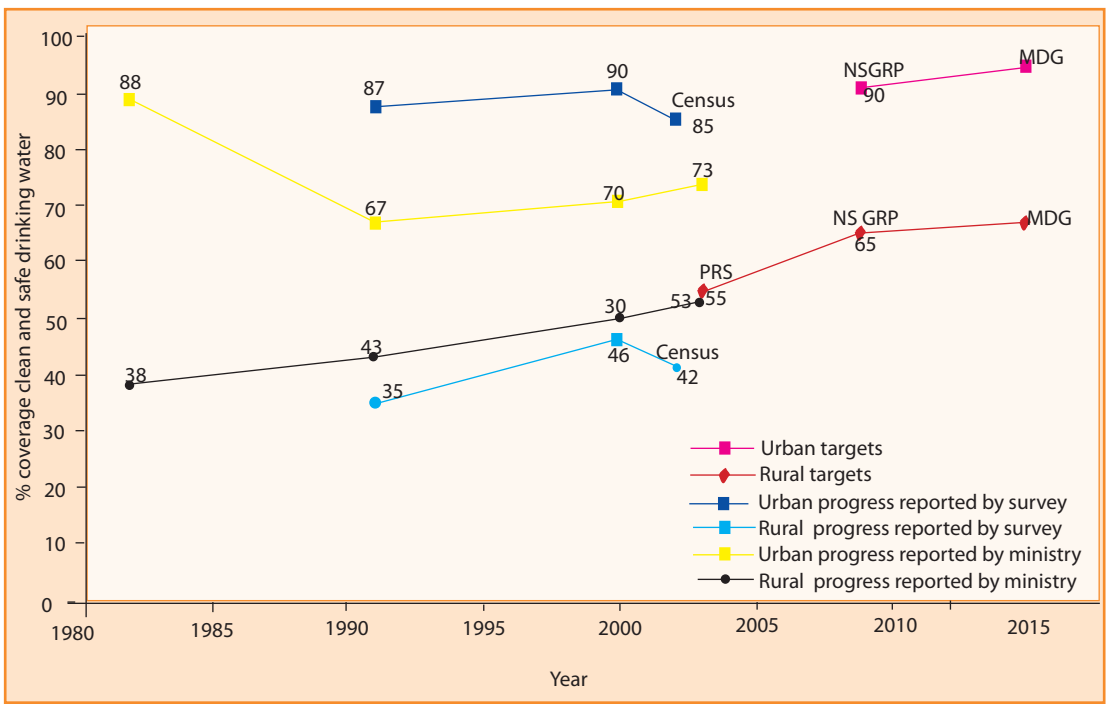
Access to clean and safe water

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



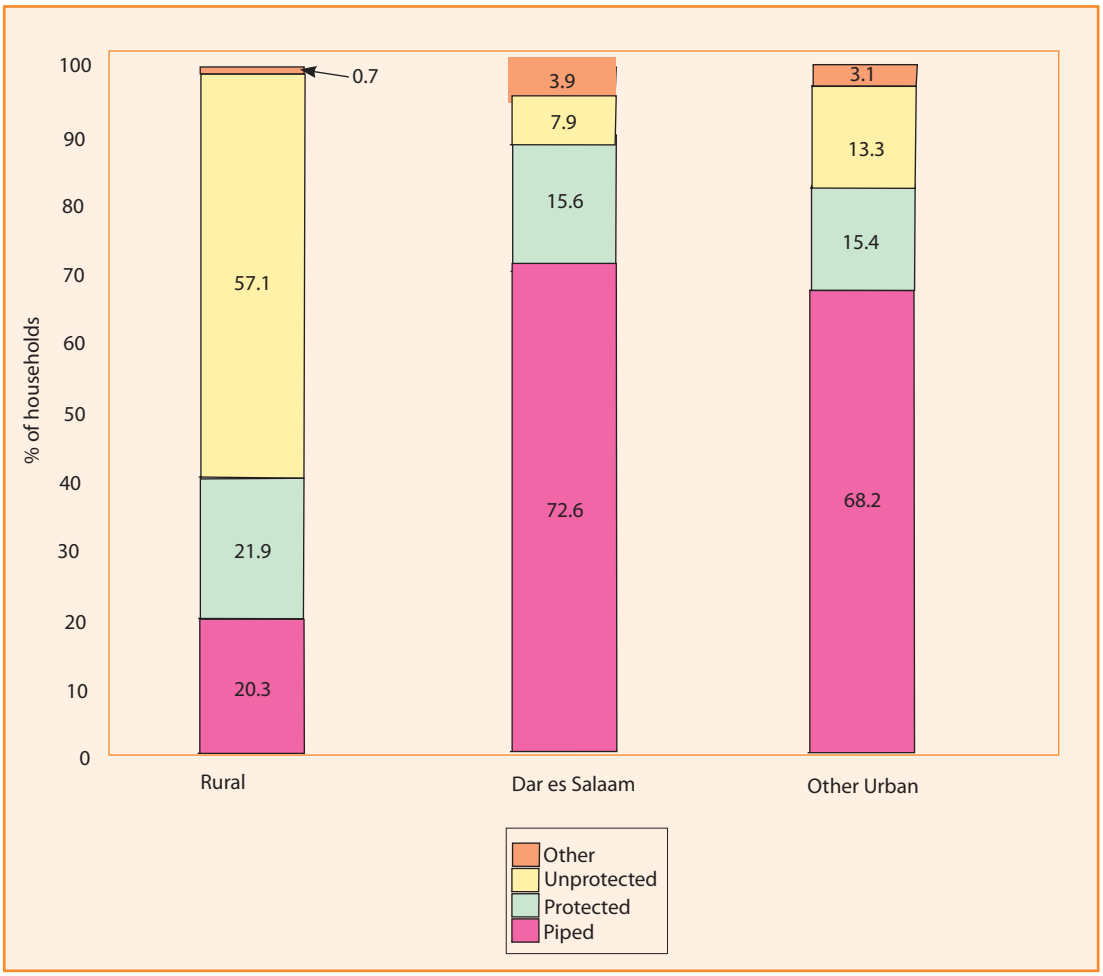
Source: Population Census 2002

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



Source: Census 2002

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.

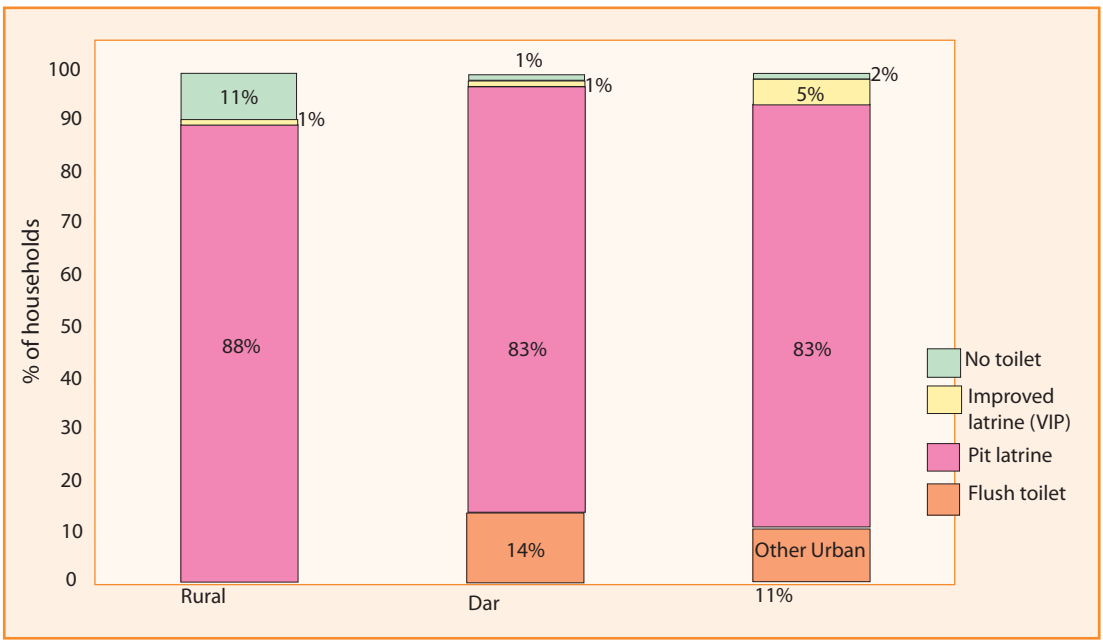
Households living in slums without adequate basic essential utilities will be a challenging indicator to report. First, there will need to be agreement on what a 'slum' is. A less pejorative term would be unplanned areas. Second, the definition of adequate utilities needs to be agreed. These definitions 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.

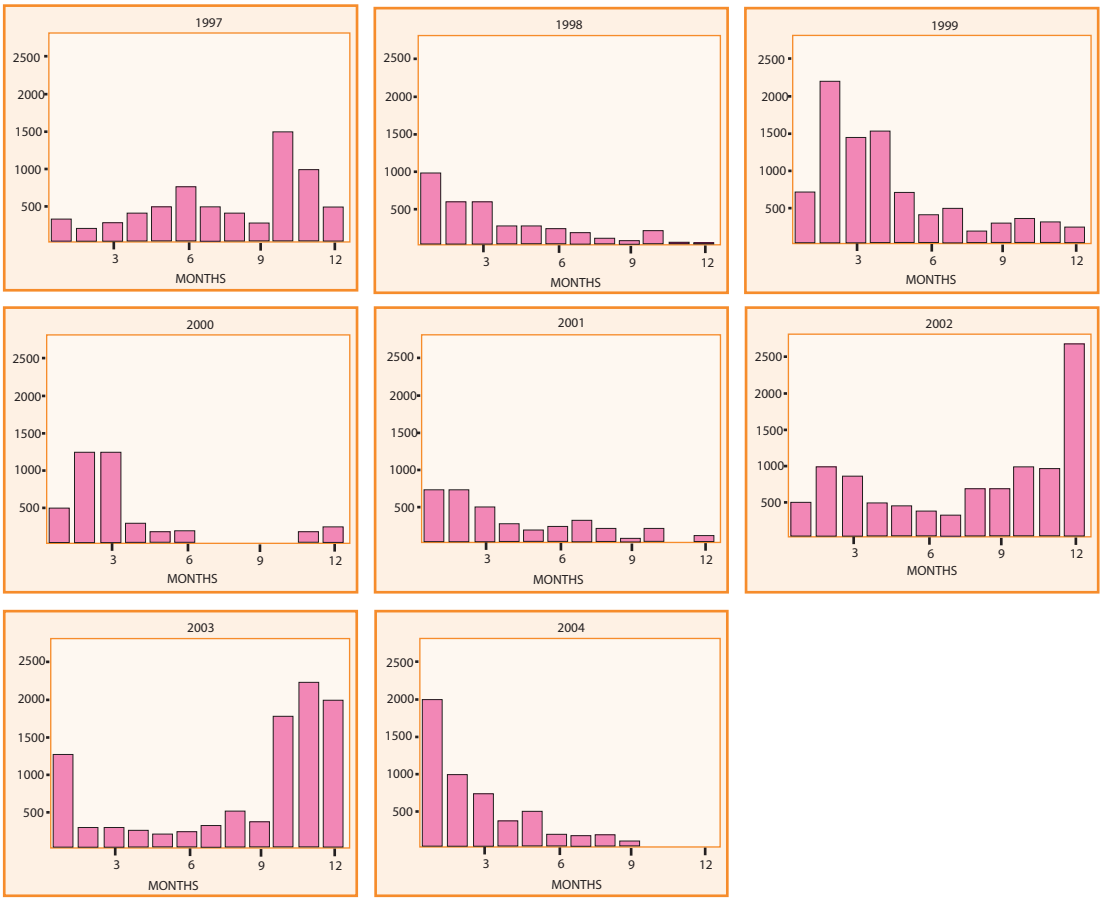
[66] Though many still depend on their transhumant livelihoods and so would see little point in building permanent toilet facilities, increasing numbers of families are building permanent bases around new health, education and water supply infrastructure.

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.

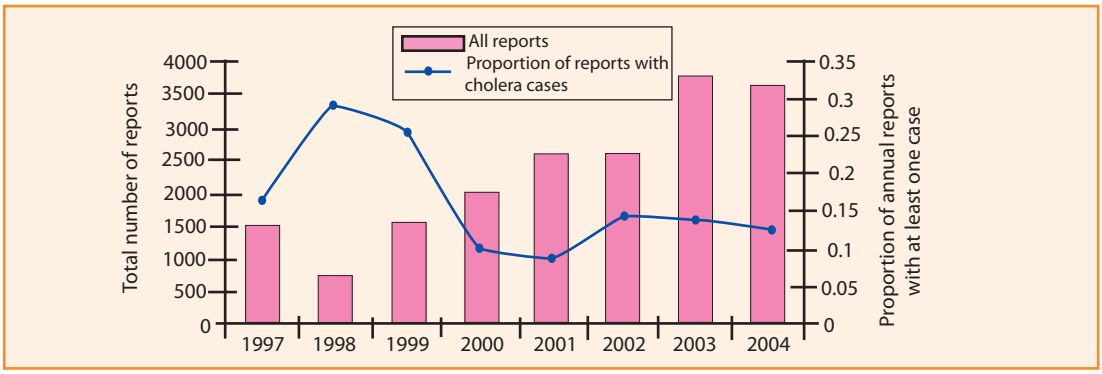
In some regions like Dar es Salaam, cholera can be considered endemic. Cholera transmission shows a seasonal pattern, generally with a larger proportion of cholera cases being reported during the rainy seasons October to December and March to May (see Figure 18). Over the past three years, 2002-04, reports 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.

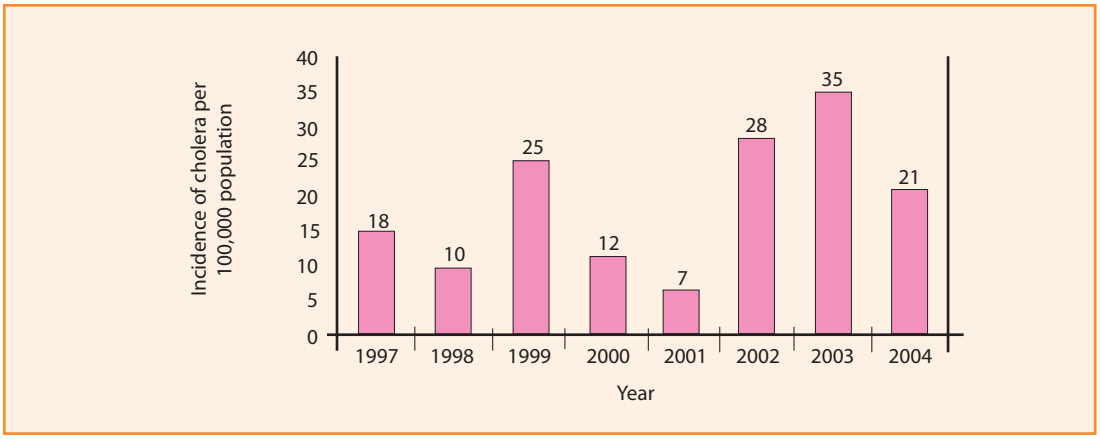
The MKUKUTA operational target for cholera is to reduce cholera 'outbreaks' by half by 2010. Monitoring progress against this indicator would require a clear definition of what an outbreak is and how it may be counted. This is especially challenging in areas of Tanzania where cholera has become endemic 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.