

## Mortality Decline Continues

### Results from Health & Demographic Sentinel Surveillance (HDSS) 2000-2011

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#### Headlines

- Child survival continued to improve throughout the period 2000-2011 and is on-track to meet the MDG target in 2015
- 2011 under-five mortality rate was 67 – 68 per 1,000 live births, roughly half the level found in 2000. However, neonatal deaths declined only marginally
- Mortality in older age groups also fell, particularly in the 15-49 year age range
- Life expectancy has risen by 7–9 years since 2000 to reach 66 years for females, 63 years for males
- Total fertility rate fell by 1 birth per woman in Rufiji but showed no change in Ifakara
- Population increase (2006-2011) excluding net migration was 2.3% in Rufiji and 2.7% in Ifakara.
- The last decade marked a period of dramatic demographic change with profound implications for future population age-structure

#### Introduction

New national demographic statistics are expected soon from the 2012 National Population and Housing

Census and from the new 2011 HIV and Malaria Indicator Survey. Until these figures are released, recent demographic trends for the country as a whole are unknown. The HDSS results provide a timely and important insight on recent trends.

Estimates presented here come from two district health and demographic surveillance sites in Rufiji (Coast Region) and Ifakara (Morogoro Region). The population under surveillance is 97,000 in Rufiji and 128,000 in Ifakara (rural segment only). Data is collected by trained enumerators, who visit every household three times per year. 3-5% of households are re-visited to check on data quality. Results presented here deal with basic demographic indicators only. A fuller report (under preparation) will provide more detailed information, including cause-specific mortality.

#### Child Mortality

Infant and under-five mortality trends are shown in figure 1. Both sites indicate a declining trend across the period as a whole.

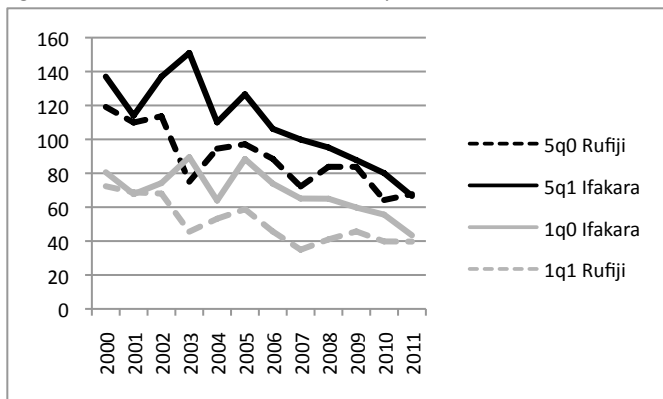
#### Under-five mortality

From baseline (2000) to endpoint (2011), under-five mortality fell by 51% in Ifakara and 43% in Rufiji to 67 and 68 deaths per 1,000 live births respectively. It is interesting to note that these values correspond with the 2011 estimate (68/1,000 live births) that the UN inter-agency group for mortality estimation provided, using extrapolation of annual mortality estimates from recent surveys. This, in turn, is substantially lower than the 81/1000 (representing the period 2005-09) measured by the Tanzania DHS 2010.

## Infant mortality

Infant mortality measures the probability of death before first birthday and is expressed as deaths per 1,000 live births. The respective values in 2011 for Ifakara and Rufiji were 43 and 40 respectively. Again, these are substantially lower than the 51/1000 estimated for the period 2005-09 in the 2010 Tanzania Demographic and Health Survey.

Figure 1: Infant and under-five mortality, 2000-2011



## Neonatal mortality

Because of the smaller numbers involved, annual neonatal mortality results show greater volatility. Comparing the mean neonatal mortality rate over two six-year periods (2000-05 and 2006-11), it is clear that there has been only marginal change.

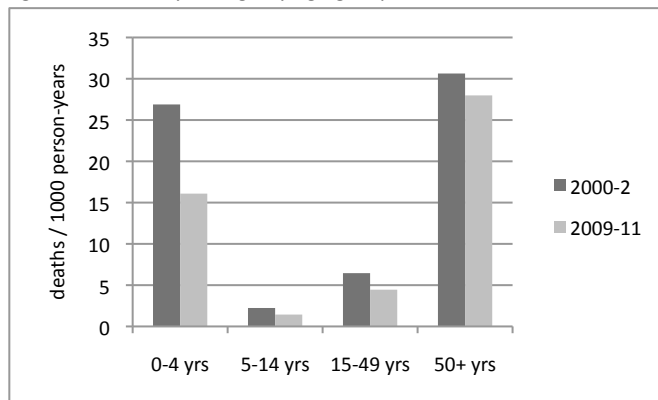
Table 1: Neonatal mortality, 2000-02 vs 2009-11

	2000-05	2006-11
Rufiji	23.5	19.7
Ifakara	31.1	29.9

## Mortality in other age-groups

Mortality reduction in Tanzania has not been restricted to under-fives. Figure 2 shows mortality change in four age brackets (0-4 years, 5-14 years, 15-49 years and 50+ years), expressed as deaths per 1,000 person years. Data from the two surveillance sites were pooled together, using the 2000-02 period as “baseline” and 2009-11 as “endpoint”. The relative mortality decline in the four age groups was 40%, 36%, 31% and 9% respectively.

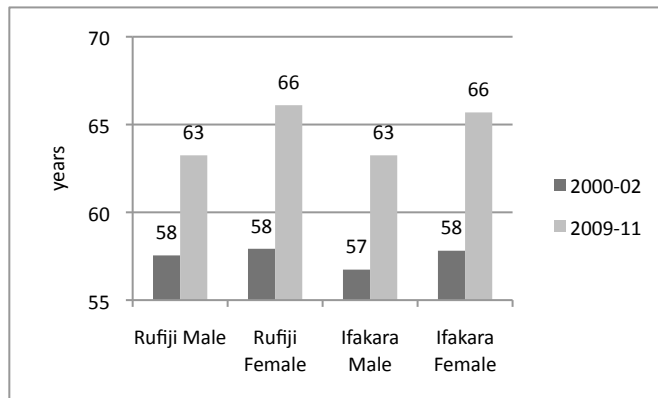
Figure 2: Mortality change by age group



## Life Expectancy

These major changes in mortality have resulted in a rapid increase in life expectancy at birth. Figure 3 presents male and female life expectancy for both sites, using 2000-02 as baseline and 2009-11 as endpoint. Male life expectancy rose by 5-6 years, to reach 63, while female life expectancy rose by 8 years from 58 to 66 years.

Figure 3: Life expectancy at birth

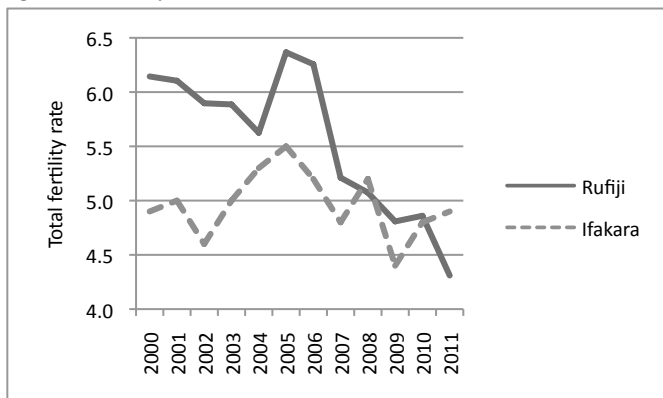


## Fertility and Population Growth

### Fertility

Total fertility rate (representing the number of children born to a woman during her lifetime) declined in Rufiji but showed no clear trend in Ifakara (Figure 4). In Rufiji, the fertility change is most marked among women aged 15-29 years (data not shown). The 2011 values for both sites are lower than the 2010 TDHS estimate of 5.4.

Figure 4: Fertility trends



### Population growth

The difference between crude birth rate and crude death rate yields the “rate of natural increase” of the population (excluding net migration). In the case of Ifakara, the decline in deaths has outpaced the decline in births – resulting in a modest rise in the rate of natural population growth. In Rufiji, both birth rate and death rate declined, resulting in a modest reduction in the rate of population increase, particularly over the latter five years (Figure 5).

Figure 5: Rate of population increase



### Discussion

Tanzania is undergoing an unprecedented decline in mortality. This is evident in the major reduction of both infant and mortality rates. It is encouraging to note that there has also been a mortality decline among older age groups, notably among adults in their

most productive years. By contrast, the risk of death in the first month of life shows very little change.

If the mortality trends in Rufiji and Ifakara are repeated country-wide and extrapolated forwards, Tanzania is set to achieve an under-five mortality rate of ~50 per 1,000 live births in 2015, close to the MDG/Mkukuta target of 48 per 1,000 live births. If this is to be achieved, Tanzania must intensify child health interventions and make inroads to avert neonatal deaths.

This dramatic mortality decline will result in accelerated population growth unless the birth rate also falls. There are signs that fertility decline has already begun in urban areas but the picture is less clear for rural Tanzania.

Nonetheless, the “inertia” of demographic change means that Tanzania will experience significant changes in the age-structure of its population. An unprecedented rate of increase in the school-age population can be anticipated over the coming decade. When these children reach reproductive age, population growth will tend to increase even if fertility starts to decline. Increased survival of adults will lead to a rapidly-growing aged population, with implications for the rising importance of chronic disease and accompanying demands on the health system.

### Acknowledgements

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[http://www.childinfo.org/files/Child\\_Mortality\\_Report\\_2012.pdf](http://www.childinfo.org/files/Child_Mortality_Report_2012.pdf)

