Population Aging in Sub-Saharan Africa: Demographic Dimensions 2006

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By Victoria A. Velkoff and Paul R. Kowal

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U.S. Department of Commerce Carlos M. Gutierrez, Secretary

> David A. Sampson, Deputy Secretary

Economics and Statistics Administration Cynthia A. Glassman, Under Secretary for Economic Affairs

> U.S. CENSUS BUREAU Charles Louis Kincannon, Director

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Economics and Statistics Administration

Cynthia A. Glassman, Under Secretary for Economic Affairs



U.S. CENSUS BUREAU Charles Louis Kincannon, Director

Preston Jay Waite, Deputy Director and Chief Operating Officer

Howard Hogan, Associate Director for Demographic Programs

Enrique J. Lamas, Chief, Population Division

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Population Aging in Sub-Saharan Africa: Demographic Dimensions 2006

INTRODUCTION

Population aging will become an increasingly important demographic dynamic affecting families and societies throughout the world in the coming decades. In 2006, 64 percent of the worldwide population aged 60 and older resided in developing countries, and this proportion is projected to increase to nearly 73 percent by 2030.1 Yet, the limited understanding of the demographics of aging in most developing countries stands in stark contrast to the comparatively well-documented course and implications of aging in developed countries. Sub-Saharan Africa is no exception to this characterization and, in fact, may be the region with the least well understood aging trends.

A combination of factors limits our understanding of the situation of older people in Sub-Saharan Africa. The main factor is that demographic data in general, and for this population in particular, are scarce in most Sub-Saharan African countries. Older people in Sub-Saharan Africa constitute a small proportion of the population and their proportions are projected to grow fairly slowly relative to other areas in the world.² In addition, other more pressing political, demographic, and health issues have confronted the subcontinent over the past two decades, and the systems to collect data essential for accurate demographic estimates and projections are largely lacking. For instance, fewer than ten countries in Sub-Saharan Africa have vital registration systems that produce usable data, and only two systems (Mauritius and Seychelles) cover at least 80 percent of the population. Resources available for addressing demographic changes and health problems in Africa have focused on issues of more immediate concern to people who are not yet old: infant, child, and maternal health; nutrition; and HIV/AIDS. However, the consequences of recent social and political upheavals—HIV/AIDS, poverty, and violent conflictshave affected many African societies and put older people into new roles with larger responsibilities in families and communities (Dayton and Ainsworth, 2002; Greener, 2004; Haacker, 2004; UNAIDS/WHO, 2006).

Although the older population makes up a small proportion of the population in most Sub-Saharan African countries, the absolute number of older people is growing. In 2006, 35 million people were aged 60 and older in Sub-Saharan Africa, and this number is projected to increase to over 69 million by 2030. In fact, the sheer number of older people is growing more rapidly in Sub-Saharan Africa than in the developed world. This increase in the number of older people will occur despite the excess mortality due to HIV/AIDS that many Sub-Saharan African countries are currently experiencing.

This report focuses primarily on the demographic aspects of aging in Sub-Saharan African countries, with a special section examining the impact of HIV/AIDS on population aging. Older people in Africa are a particularly vulnerable social group, and they have been made more vulnerable because of the HIV/AIDS pandemic that is affecting many of these countries (Dayton and Ainsworth, 2002; UNAIDS/WHO, 2006).

This report examines the populations aged 50 and over, 60 and over, and 80 and over. The cultural definition of "old" differs greatly between and within countries. Attaching a chronological age to "old" often serves practical or official purposes, and looking at these three age groupings will help to compare and contrast the older populations (Sokolovsky, 1997).

¹ The "developed" and "developing" country categories used in this report correspond directly to the "more developed" and "less developed" classification employed by the United Nations. Developed countries comprise all nations in Europe (including the following nations that formerly were part of the Soviet Union: Belarus, Estonia, Latvia, Lithuania, Moldova, Russia, and Ukraine) and Northern America, plus Japan, Australia, and New Zealand. The remaining nations of the world are classified as developing countries.

² For the purposes of this report, Sub-Saharan Africa includes 50 countries. The report focuses on 42 countries that had total populations of at least 1 million in 2006. The countries not included in the report's tables and figures are Cape Verde, Comoros, Djibouti, Equatorial Guinea, Mayotte, Saint Helena, Sao Tome and Principe, and Seychelles. Data for the 42 focus countries can be found in Appendix A. Mauritius, although it has a population of over 1 million, is also excluded from the report tables and figures, as it is a demographic outlier in many ways. The data for Mauritius are included in the detailed tables in Appendix A.

Data Quality Issues

The demographic data in this report are presented using the conventional practice of showing percentages, total fertility rates, and life expectancies to the first decimal place. This is done for ease of comparison to other data. However, it does not denote that these data are precise to that decimal place. The data in this report should be interpreted with care.

Most of the data in this report are based on population estimates and projections prepared by the U.S. Census Bureau.³ The Census Bureau produces population estimates and projections for every country with a population of more than 5,000 in the world, utilizing available demographic data from censuses, vital registrations, demographic health surveys, and other sources. Published data are adjusted where appropriate and assumptions are made regarding future trends in fertility, mortality, and migration. Unforeseen events can rapidly modify the demographic environment. As with any projection data, uncertainties about the levels and directions of future fertility, mortality, and net immigration levels mean that the actual future population is never identical to the projected population.

Population estimates and projections for many Sub-Saharan African countries are based on limited data. Few Sub-Saharan African countries have data available from a recent census, and several countries have postponed their 2000 round census to 2006 or later (Velkoff and Kowal, 2006). For the countries that do have recent census data, data quality has been uneven. Very few countries in Sub-Saharan Africa have functioning vital statistics systems that produce usable data on fertility and mortality (Mathers, et al., 2005; Timaeus and Jasseh, 2004). Because of the lack of vital statistics, data from demographic and health surveys are used to produce estimates of fertility and infant and child mortality (Cohen, 1993; Hill, 2003). These estimates of infant and child mortality are then typically matched

to model life tables to produce adult mortality estimates (Hill, 2003; Velkoff and Kowal, 2006).

The Census Bureau has incorporated estimates of HIV/AIDS-related mortality in population projections for 54 countries worldwide that are affected by the epidemic; 36 of these are Sub-Saharan African countries. To obtain estimates of HIV/AIDS-related mortality, the Census Bureau incorporates estimates of HIV prevalence through 2010 from the Estimation and Projection Package—an epidemiological model used by the World Health Organization (WHO)/the Joint United Nations Programme on AIDS (UNAIDS). Assumptions from the WHO/UNAIDS Epidemiological Reference Group about age/sex distribution, sex ratios of new infections, mother-to-child transmission rates, and disease progression are also incorporated into the estimates (Epstein and Heaton, 2005). The model also includes the impact of antiretroviral therapy on survival of AIDS patients. The HIV prevalence rates used in the population estimates and projections are based on data from the beginning of the epidemic and typically include the most recent data available for a country (see Table A-6 for the 2005 adult prevalence rates included in the projections used in this report). These data on adult HIV prevalence estimates come from sentinel surveillance data pertaining to pregnant women visiting antenatal clinics and, in selected countries, data from populationbased surveys that obtain information on HIV prevalence. The uncertainty around these estimates is often large. The incorporation of new data on HIV prevalence into a population projection can have a substantial effect on the results of that projection. The HIV prevalence rates are used in conjunction with the Census Bureau's cohort component Rural-Urban Projections program, which is used to conduct population estimates and projections to produce "With HIV/AIDS-related mortality" and "Without HIV/AIDS-related mortality" scenarios. The "With HIV/AIDS" scenario shows what has happened and what is projected to happen in a country as a result of HIV/AIDS-related mortality and its demographic consequences. The "Without HIV/AIDS" scenario shows a hypothetical series of what the Census Bureau's modeling work indicates would have happened if the country had not been affected by an HIV/AIDS epidemic (Epstein, 2004; Epstein and Heaton, 2005).

³ Many of the data included in this report are from the Census Bureau's International Data Base (IDB). The data from the IDB were accessed in June 2006. The statistics provided represent only a small portion of the total IDB data. The IDB is maintained and updated by the Census Bureau's International Programs Center (IPC) and is funded in part by the Behavioral and Social Research Program of the U.S. National Institute on Aging. IDB contents are readily available from the Census Bureau's Web site; the direct access address is <www.census.gov/ipc/www/idb>.



While the older population is frequently defined as those aged 60 and over or 65 and over, when examining aging in Sub-Saharan Africa those age cutoffs may not be appropriate. In 2006, over fourfifths of the Sub-Saharan countries had a life expectancy at birth of 55 years or less. In seven countries, life expectancy at birth was 40 years or less. Life expectancy at age 50 in many Sub-Saharan countries is akin to life expectancy at age 60 or 65 in the United States and Europe. Because of the low life expectancies, a younger cutoff for entry into the ranks of old age may be more suitable when studying aging in Africa. Examining those aged 50 and over will assist in understanding future population aging in Africa. This examination may reveal important demographic

differences that have direct bearing on social policy now and in the future. For example, making 50 the age cutoff for "old" more than doubles the size of the older population in Sub-Saharan Africa. The rapid growth of the older population is particularly relevant to public policy, as individual needs and social responsibilities change considerably with increased age.

This report is designed to provide a systematic and quantitative comparison of older populations in Sub-Saharan Africa. Accurate information is the first step in better understanding the effects of population aging within and across national boundaries and is essential to developing appropriate policies and programs for the older populations.

DEMOGRAPHIC DIMENSIONS

Global Context of Aging

Population aging is in many ways a success story, as people are living longer and healthier than ever before (Kinsella and Phillips, 2005).⁴ However, the growth of the older population also presents challenges to policymakers, families, businesses, and health care providers, among others, to meet the needs of aging individuals. Many countries of the world are aging at an unprecedented rate. The numbers of older people and the pace of aging vary widely both by region and within regions. Typically, more developed countries have higher proportions of their populations in older age groups than do developing countries (Figure 1). For example, nearly 20 percent of Europe's population was aged 60 and over in 2006. In contrast, less than 5 percent of Sub-Saharan Africa's population was aged 60 and over. In other developing regions, those aged 60 and over make up between 7 percent and 10 percent of the population. In all regions of the world, the proportion 60 and over is projected to increase in the future. By 2030, 28 percent of Europeans are projected to be aged 60 and over. In Asia. Latin America, and the Caribbean, the

⁴ Mortality has decreased and life expectancy at birth has increased in most, but not all, countries of the world. Exceptions include several Commonwealth of Independent States countries and many countries in Sub-Saharan Africa that have been highly affected by the HIV/AIDS pandemic (He, Sengupta, Velkoff, and DeBarros, 2005).

Historically, falling mortality rates initially lead to younger populations, but as mortality reaches relatively low levels, further declines contribute to population aging (Lee, 1994). See the section on "Dynamics of Population Aging" on page 13.

proportions aged 60 and over are projected to nearly double in less than 25 years. Again, Sub-Saharan Africa stands in contrast to the other regions of the world with the proportion aged 60 and over projected to grow relatively slightly, from 4.7 percent in 2006 to 5.6 percent in 2030.

"No Older People" in Africa?

The small increase in the proportion aged 60 and over in Sub-Saharan Africa masks a large increase in the number of people in this age group. The number of people aged 60 and over in Sub-Saharan Africa will nearly double from over 35 million in 2006 to over 69 million in 2030 (Table 1). Between 2030 and 2050, the number of older people in Sub-Saharan Africa is projected to double again to over 139 million. The number

Table 1. Number of Older People by Age and Region of the World: 2006, 2015, 2030, and 2050

(In thousands)

Region and year	Total, all ages	50 years and over	60 years and over	80 years and over
World 2006	6,525,521	1,271,311	683,334	90,014
2015	7,225,878 8,290,288 9,401,505	1,620,873 2,310,781 3,146,862	895,032 1,402,673 2,087,597	126,465 214,680 466,094
Europe 2006	805,534 809,295 798,606 757,294	260,381 294,134 333,022 345,725	157,997 180,995 225,570 254,079	27,849 35,720 46,971 72,020
North America				
2006 2015 2030 2050	331,672 358,378 403,073 461,639	99,813 123,017 147,653 173,570	56,739 73,553 102,554 122,026	12,200 13,963 21,937 37,659
Oceania 2006 2015 2030 2050	33,129 36,450 41,139 44,761	8,449 10,423 13,694 16,962	4,831 6,266 8,857 11,468	907 1,112 1,795 2,959
Asia 2006 2015 2030 2050	3,682,827 4,062,994 4,591,905 5,012,685	685,587 904,160 1,360,854 1,866,459	353,102 486,001 816,632 1,254,954	37,435 58,763 113,031 279,491
Latin America/Caribbean				
2006	561,246 620,603 703,993 764,855	96,173 130,641 200,070 284,094	50,752 69,366 117,676 186,795	6,550 9,469 17,365 39,627
Near East/North Africa				
2006	358,323 416,978 507,550 605,780	47,884 67,005 115,045 188,407	24,497 33,796 62,179 119,004	2,549 3,896 7,252 19,833
Sub-Saharan Africa 2006	752,790 921,181 1,244,021 1,754,492	73,025 91,492 140,443 271,643	35,415 45,056 69,205 139,270	2,524 3,542 6,330 14,506



of older people is growing more rapidly in Sub-Saharan Africa than in the developed world and will continue to do so in the future (Figure 2). The average annual growth rate of the population aged 60 and over in Sub-Saharan Africa is over 2 percent and will increase over the next 45 years to nearly 4 percent. In contrast, the average annual growth rate of this population in developed countries is less than 2 percent and is projected to decline to less than 1 percent over the next several decades. The near doubling of the number of people aged 60 and over in Sub-Saharan Africa over the next guarter century is expected to take place despite the excess mortality that will occur from HIV/AIDS.

Effect of Redefining Old Age

As mentioned earlier, using age 60 as the demarcation into old age may not be appropriate for the countries of Sub-Saharan Africa, as over 80 percent of these countries have life expectancies at birth below 55 years of age. If age 50 is used as the cutoff for older age rather than age 60, the number of people in the older ages more than doubles (Table 1) and the proportions older increase as well (Figure 3). In 2006, there were over 73 million people aged 50 and over in Sub-Saharan Africa, and this number is expected to nearly double by 2030, growing to 140.4 million. In terms of proportion of the population, those aged 50 and over made up nearly 10 percent of the population of Sub-Saharan Africa in 2006, and by 2030, those aged 50 and over are projected to account for 11 percent of the population.

Countries With at Least 1 Million People Aged 60 and Over

In 2006, eight countries in Sub-Saharan Africa had over 1 million people aged 60 and over (Figure 4). Nigeria had by far the largest older population of these Sub-Saharan countries, with 6.6 million people aged 60 and over in 2006, and it ranks among the top 20 countries in the world in the size of this population. The next-largest older populations were in South Africa and Ethiopia, which had older populations of over 3 million each.



Figure 4. **Population Aged 60 and Over for Sub-Saharan African Countries With at Least 1 Million People in That Age Group: 2006** (In millions)





The size of the older populations in some Sub-Saharan African countries is similar to the size in more developed countries. For instance, Nigeria's older population is roughly the same size as that of Poland.

By 2030, the list of Sub-Saharan countries with at least 1 million people aged 60 and over is projected to grow to 16 (Figure 5). Again, Nigeria is predicted to have the largest older population, with over 12 million people aged 60 and over in 2030. Ethiopia and Congo (Kinshasa) are projected to rank second and third, with around 6.6 million and 6.1 million people aged 60 and over, respectively.

Countries With at Least 1 Million People Aged 50 and Over

If age 50 is used as the definition of the older population, 20 countries in Sub-Saharan Africa had older populations of over 1 million people (Figure 6). Again, Nigeria had the largest older population in Sub-Saharan Africa, with 13.7 million people aged 50 and over in 2006. South Africa and Ethiopia each had approximately 7 million people aged 50 and over.

Figure 6. **Population Aged 50 and Over for Sub-Saharan African Countries With at Least 1 Million People in That Age Group: 2006** (In millions)





By 2030, over half of the countries in Sub-Saharan Africa are projected to have at least 1 million people aged 50 and over (Figure 7). Nigeria is projected to have over 25 million people in this age group by 2030. Ethiopia is projected to have 13.4 million, Congo (Kinshasa) is projected to have 12.7 million, and Sudan is projected to have around 8.3 million.

Proportion of the Population Aged 60 and Over in Sub-Saharan Africa

Although the proportion aged 60 and over is just under 5 percent for Sub-Saharan Africa as a whole, a number of countries in the region have higher proportions in this age group (Figure 8 and Table A-1). Nearly 8 percent of South Africa's population was aged 60 and over in 2006, making it the oldest country in Sub-Saharan Africa.⁵ Lesotho had 7.0 percent of its population aged 60 and over in 2006, and 6 percent of the Central African Republic's population was in this age group. At the other end of the spectrum are countries such as Benin, Burkina Faso, Burundi, Kenya, Mauritania, Rwanda, Somalia, Uganda, and Zambia, where the older population accounted for 4 percent or less of the total population.

⁵ Several of the smaller countries of Sub-Saharan Africa excluded from the analysis for this report have higher proportions aged 60 and over, as does Mauritius.

Figure 8. Percent Aged 60 and Over for Selected Sub-Saharan African Countries: 2006 South Africa Lesotho Central African Republic Fritroa





By 2030, over 12 percent of the population of South Africa is projected to be aged 60 and over (Figure 9 and Table A-1). In Ghana, nearly 9 percent of the population is projected to be 60 and over. While the proportion aged 60 and over in many Sub-Saharan African countries is projected to increase, most countries in the region are projected to remain fairly young, with less than 6 percent aged 60 and over. Overall, the proportion aged 60 and over is projected to remain fairly stable in many Sub-Saharan African countries. For instance, 3.9 percent of Burkina Faso's population in 2006 was aged 60 and over, and this proportion is projected to be roughly the same in 2030. In other countries, the proportion is projected to decrease slightly. In Uganda, the percentage is projected to decrease from 3.3 percent in 2006 to 3.1 percent in 2030. Similar trends are found in the Central African Republic, Malawi, Mali, Sierra Leone, Swaziland, and Zambia.

Projected Growth in the Number Aged 60 and Over

In contrast with these relatively stable proportions aged 60 and over, the absolute number of people in this age group is projected to increase over the next few decades in most Sub-Saharan African countries. For instance, the decrease in the proportion aged 60 and over in Uganda between 2006 and 2030 masks an increase over the same time period of over 1 million in the absolute number of people in this age group. An exception to this projected trend in the number of older people can be found in Swaziland. The number of older people is projected to decline in Swaziland between 2006 and 2030. Other countries severely affected by the HIV/AIDS epidemic (e.g., Lesotho, Zambia, Zimbabwe, and the Central African Republic) are expected to experience small increases in the number of older people between 2006 and 2030. Conversely, the number of older people in some countries is projected to more than double by 2030 (e.g., Madagascar, Kenya, Rwanda, Ghana, Senegal, Congo [Kinshasa], Uganda, Cameroon, and Burkina Faso).

Composition of Older Age Groups

In many countries in the world, the oldest old (those aged 80 and over) are the fastest-growing segment of the older population. This is true for a majority of Sub-Saharan African countries as well. In Sub-Saharan Africa, around 2.5 million people were aged 80 and over in 2006, and this number is projected to more than double to

Figure 10. Percent Change in the Population Aged 60 and Over in Selected Sub-Saharan African Countries: 2006 and 2030 Madagascar 157 155 Kenya 154 Rwanda Ghana 142 135 Senegal 133 Congo (Kinshasa) Uganda 114 105 Cameroon 101 Burkina Faso 98 Ethiopia 94 Tanzania 88 Cote d'Ivoire



Source: U.S. Census Bureau, International Data Base, 2007.

6.3 million by 2030 (Table 1). Despite the rapid growth in the number of people aged 80 and over, the oldest-old population accounted for, and is projected to account for, less than 1 percent of the total population of Sub-Saharan Africa in the years 2006 and 2030.

While the oldest old account for a very small proportion of the total

population, they accounted for 7.1 percent of the 2006 population aged 60 and over in Sub-Saharan Africa. By 2030, the proportion will increase to 9.1 percent. In the world's more developed regions, the oldest old will account for nearly 23 percent of the 60-andover population in 2030 and nearly 13 percent in countries in the less developed regions. The growth of the older population, especially the oldest old, is important to public policy planners because this group is typically the most vulnerable and most often in need of care.

Median Age Is Low in Most of Sub-Saharan Africa

Another measure of population aging is the median age of the population, the age that divides the population into numerically equal parts of younger and older people. For instance, in Uganda in 2006, the median age was 15 years, indicating that half of the population was younger than age 15 and half the population was older than age 15. Uganda had the youngest median age of all the countries of the world.

In 2006, the majority of countries in Sub-Saharan Africa had median ages of less than 20 years, indicating that these countries had very young populations (Table A-4). Obviously, having half of the population under the age of 20 has implications for resource allocation within a country. Three Sub-Saharan African countries had median ages over 20—Botswana, Lesotho, and South Africa. South Africa had the oldest median age in Sub-Saharan Africa at just over 24 years. Lesotho had the secondoldest median age at 20.9, and Botswana had a median age of 20.6 years. In contrast to the majority of Sub-Saharan African countries, many developing countries in Asia and Latin America have median ages over 30. The median age in the United States is just over 36 years, which makes it one of the youngest developed countries. Japan and several European countries have median ages over 40 years.

By 2030, the median age is projected to increase for all Sub-Saharan countries. Even with a projected increase. 16 countries will still have median ages less than 20 years in 2030, reflecting fertility levels that are projected to remain relatively high. At the other end of the spectrum, South Africa is projected to have a median age of over 30 years in 2030, and Namibia's median age is projected to be over 27. The median ages in Botswana, Ghana, Kenya, and Lesotho are projected to be over 25 years. The shifting age structures of these countries may impact how social programs are targeted.

DYNAMICS OF POPULATION AGING

The factors affecting population aging illustrate why Sub-Saharan Africa is so young relative to other regions and why the proportion in the older ages will increase only slightly. The process of population aging is determined mainly by fertility (birth) rates and secondarily by mortality (death) rates, and to a lesser extent by migration. Populations with high fertility tend to have low proportions of older people and vice versa. The term "demographic transition" refers to a gradual process whereby a country moves from high rates of fertility and mortality to low rates (Kirk, 1996; Lee, 2003; Notestein, 1945). In general, this transition is characterized initially by declines in infant and childhood mortality due to reductions in infectious and parasitic diseases. The resulting improvement in life expectancy at birth occurs while fertility tends to remain high, thereby producing large birth cohorts and an expanding proportion of children relative to adults (Kirk, 1996; Vallin, 2002). Other things being equal, this initial decline in mortality generates a younger population age structure. However, as fertility rates fall and mortality rates at older ages improve, populations begin to age.

Declining Fertility

Historically, declines in fertility have been the main factor that influenced population aging. Declines in fertility rates result in declines in the size of successive birth cohorts and a corresponding increase in the relative proportion of the population that is older. Developed countries experienced a decrease in total fertility rates beginning in the early 1900s, which has led, in many countries, to current fertility levels that are below the population replacement rate of 2.1 live births per woman (Coale and Watkins, 1986). The persistent and extremely low fertility levels seen in most developed countries contribute to the current and projected high proportion of older people in these countries.

Declines in fertility rates in many developing countries have occurred more recently and were more rapid, with many developing countries achieving major reductions in fertility rates over a few decades. For example, overall fertility levels in Asia and Latin America dropped by about 50 percent between 1965 and 1995 (from around six children per woman to three). Total fertility rates in many developing countries (e.g., several countries in Asia [including China], several Latin American and Caribbean countries, and some countries of the Near East) are now below the replacement level. The quick reductions in fertility rates and continued low fertility levels have affected the speed of population aging in these countries.

While fertility levels in most developed and several developing countries are at or below replacement fertility (2.1 births per woman), many of the countries of Sub-Saharan Africa still have fairly high levels of fertility. Sub-Saharan African countries account for eight of the highest fertility rates in the world. In 2006, Niger and Mali had the highest total fertility rates, over 7 children per woman (Figure 11 and Table A-5). Seven Sub-Saharan countries had total fertility rates of 4 or under (Botswana, Ghana, Lesotho, Namibia, South Africa, Swaziland, and Zimbabwe), and the rate in one country was close to replacement level—South Africa had a total fertility rate of 2.2.

The historically high levels of fertility in many Sub-Saharan countries help explain the very low proportion of people at older ages in these countries. Conversely, Sub-Saharan African countries with relatively low levels of fertility are the countries with higher proportions of people aged 60 and over.

Increasing Longevity

The second demographic force behind population aging is increasing longevity. In many countries, life expectancy at birth has increased and people are living longer, contributing to the aging of the population (National Research Council, 2001).⁶ Several developed countries have life expectancies at birth around 80 years. Some



developing countries have life expectancies at birth over 70 years (e.g., Chile and China). While the typical trend observed in life expectancy over much of the twentieth century was upward, this trend was not found for all countries. In Russia and many countries in the Commonwealth of Independent States and Eastern Europe, life expectancy at birth decreased in the late twentieth

century. Many Sub-Saharan African countries are also not following the historical trend of increased longevity leading to population aging; rather, these countries are experiencing a decrease in life expectancy at birth (i.e., mortality is getting worse). Because the impact of HIV/AIDS has been so large in many of these Sub-Saharan countries, it will significantly affect how these populations age.

⁶ Typically, increases in longevity initially come from reductions in infant and child mortality (Vallin, 2002). When infant and child mortality rates reach low levels, further increases in life expectancy are a result of reductions in mortality rates at older ages (Kinsella and Velkoff, 2001; Kirk, 1996).



Life Expectancy

In 2006, life expectancy at birth in Sub-Saharan countries ranged from a high of 61.8 years in Madagascar to a low of 32.6 years in Swaziland (Figure 12 and Table A-5). In 25 Sub-Saharan African countries, life expectancy at birth was below 50 years, and seven countries had life expectancies at birth of 40 years or less (Angola, Liberia, Lesotho, Sierra Leone, Swaziland, Zambia, and Zimbabwe). These low levels found in Sub-Saharan African countries are related to many factors, such as poor access to health care, low living standards, civil unrest, and violent conflict; but in most countries, the main reason is the HIV/AIDS pandemic.

The trend in life expectancy at birth in Zimbabwe is a good illustration of the devastation of HIV/AIDS on populations in Africa. In Zimbabwe, male life expectancy at birth fell from 61.6 years in 1986 to just 40.4 years in 2006, a decrease of 21 years. The loss for women is even larger: life expectancy at birth dropped by more than 27 years over the same time period. Botswana also experienced large decreases in life expectancy at birth, a drop of 9 years for men and 18 years for women. The HIV/AIDS pandemic has had, and will continue to have, an enormous impact on mortality in Africa. Figures 13 and 14 show trends in life expectancy by sex for Botswana and three other countries-Kenya, Swaziland, and Zimbabwe—all of which have been affected by the HIV/AIDS pandemic. Life expectancy at birth was generally increasing in all four countries for both men and women during the early 1980s. Beginning in the late 1980s and early 1990s, the trajectory of life expectancy at birth dramatically turned downward, mainly related to the increased mortality due to HIV/AIDS. Similar trends in life expectancy are found in other Sub-Saharan African countries that have populations affected by HIV/AIDS.





Table 2.Life Expectancy at Birth, With and Without AIDS Mortality Incorporated in the Estimate,by Sex for Selected Sub-Saharan African Countries: 2006

(Countries with a difference of 5 or more years in life expectancy for at least one sex)

Country		Male		Female			
Country	With AIDS	Without AIDS	Difference	With AIDS	Without AIDS	Difference	
Botswana	52.0	74.3	-22.3	50.4	78.8	-28.4	
Burkina Faso	47.3	51.7	-4.4	50.4	56.0	-5.6	
Burundi	50.1	57.1	-7.0	51.6	60.5	-9.0	
Cameroon	51.7	57.2	-5.5	53.0	60.3	-7.2	
Central African Republic	43.5	57.0	-13.5	43.6	61.2	-17.6	
Congo (Brazzaville)	51.6	57.6	-6.0	54.0	61.8	-7.8	
Cote d'Ivoire	46.2	52.4	-6.2	51.5	60.8	-9.3	
Eritrea	57.4	61.3	-3.9	60.7	66.0	-5.3	
Ethiopia	47.9	52.1	-4.2	50.2	55.8	-5.5	
Gabon	53.2	62.6	-9.4	55.8	67.8	-12.0	
Guinea Bissau	45.1	48.9	-3.8	48.7	53.9	-5.2	
Kenya.	54.3	62.7	-8.5	54.2	64.8	-10.7	
Lesotho	40.4	63.1	-22.7	39.1	68.6	29.5	
	38.0	41.7	-3.7	41.3	46.6	5.3	
	42.8	56.4	-13.5	41.9	59.5	17.6	
	41.2	53.6	-12.5	40.4	55.4	15.0	
Namibia	44.5	68.5	-24.0	42.3	72.9	-30.6	
	46.5	51.7	-5.2	47.7	54.9	-7.2	
	47.2	51.4	-4.2	49.3	54.9	-5.6	
	43.2	63.8	-20.6	42.2	70.9	-28.7	
Swaziland	32.1	71.0	-38.9	33.2	76.2	-43.1	
Tanzania	48.5	55.5	-7.0	50.9	59.9	-9.0	
Togo	55.4	61.2	-5.8	59.5	67.1	-7.6	
Uganda	50.2	57.7	-7.5	51.9	61.5	-9.6	
Zambia	38.0	51.4	-13.3	38.2	54.8	-16.6	
Zimbabwe	40.4	69.5	-29.1	38.2	73.8	-35.7	

Source: U.S. Census Bureau, International Programs Center, 2007.

Life Expectancy With and Without HIV/AIDS

Another way to illustrate the impact of HIV/AIDS on life expectancy at birth is to calculate life expectancies with and without HIV/AIDS-related mortality. The life expectancy without HIV/AIDS-related mortality is a hypothetical estimate of what the life expectancy would be if the country had not experienced an HIV/AIDS epidemic. Taking the example of Botswana, in 2006, life expectancy at birth for men was 22.3 years lower than it would have been without mortality due to HIV/AIDS (Table 2).⁷ HIV/AIDSrelated mortality has had an even larger impact on female life expectancy. Life expectancy at birth for women in Botswana in 2006 was estimated to be 50.4 years, 28.4 years lower than without HIV/AIDS-related mortality. The net impact of HIV/AIDS on life expectancy at birth in Namibia, Lesotho, South Africa, Swaziland, and Zimbabwe is also large, with net differences of over 20 years in male life expectancy and 25 years in female life expectancy. Life expectancies at birth in these five countries are over 25 years lower for women than they would have been if HIV/AIDS was not present.

⁷ For information on HIV prevalence rates by country, see Table A-6, which presents the estimates of HIV prevalence for adults aged 15 to 49 in 2005 for Sub-Saharan African countries.

MEASURING THE EFFECT OF HIV/AIDS

Impact of HIV/AIDS in Population Pyramids

For countries affected severely by the HIV/AIDS pandemic, the impact of HIV/AIDS is clearly seen in the age and sex structure of the population. Examining the age and sex structures of Botswana and Zimbabwe over time shows the magnitude of the impact of HIV/AIDS. Figures 15 through 18 show the age and sex structure of the populations of Botswana and Zimbabwe for 2006 and 2030. These pyramids show the population estimates and projections with HIV/AIDS-related mortality and what the population structures would have looked like without HIV/AIDS-related mortality.

In Botswana in 2006, the population is smaller than it would have been without HIV/AIDS mortality (Figure 15), but the age structure still has the classic shape of a young population—wider at the bottom and narrower at the top. By 2030, the effect of HIV/AIDS on Botswana's population age and sex structure is projected to be more pronounced (Figure 16). The pyramid has lost the classic young population shape and resembles a chimney. The projected population in 2030 is much smaller in every age group than it would have been

if there was not mortality due to HIV/AIDS. In 2006, the total population of Botswana was about 251.000 smaller than it would have been if HIV/AIDS had not affected the population. By 2030, the total population is projected to be smaller by just over 1 million people. The population aged 60 and over is also smaller because of the impact of HIV/AIDS on mortality. Projections indicate that in 2030, if HIV/AIDS did not exist, about 239,000 people would be aged 60 and over in Botswana; when HIV/AIDS mortality is incorporated into the projection, this age group is expected to have around 133,000 people.



Figure 16.

Population by Age and Sex in Botswana With and Without HIV/AIDS-Related Mortality: 2030

Projection without HIV/AIDS-related mortality Projection with HIV/AIDS-related mortality





Population by Age and Sex in Zimbabwe With and Without HIV/AIDS-Related Mortality: 2030



The age and sex structures for Zimbabwe also show the impact of HIV/AIDS mortality, but the impact is not quite as severe as in Botswana. In 2006, Zimbabwe's population was somewhat smaller than it would have been if there was no HIV/AIDS-related mortality (Figure 17). By 2030, the impact of HIV/AIDS can clearly be seen in the age and sex structure of the population (Figure 18). Like Botswana, both the total population and the older population in Zimbabwe are expected to be larger in 2030 than in 2006, despite the impact of HIV/AIDS. In 2006, there were 618,000 people aged 60 and over, and this number is projected to grow to 783,000 by 2030.

Figure 19. Number of People Aged 60 and Over With and Without HIV/AIDS-Related Mortality in Selected Sub-Saharan African Countries: 2006 (In thousands)



Impact of HIV/AIDS on the Size of the Older Population

HIV/AIDS-related mortality affects not only the age structure of populations but also the size of the older population in several Sub-Saharan African countries. Figure 19 presents the number of people aged 60 and over for selected countries in 2006, showing estimates that incorporate HIV/AIDS-related mortality and those that do not. The latter is a hypothetical estimate of what the older population would be if the country had not experienced an HIV/AIDS epidemic.

In 2006, the older population was somewhat smaller than it would have been if the countries shown had not been affected by an HIV/AIDS epidemic. For example, in 2006, Tanzania had about 1.7 million people aged 60 and over. If Tanzania had never experienced an HIV/AIDS epidemic, the population aged 60 and over would have been over 1.8 million. The population in Tanzania is estimated to have around 134,000 fewer older people in 2006 than it would have had in the absence of HIV/AIDS.

By 2030, the projected impact of HIV/AIDS on the size of the older population is much more pronounced. In South Africa, the older population is projected to number around 4.8 million people in 2030. If South Africa had never experienced an HIV/AIDS epidemic, the future older population would be much larger—just over 8.8 million, a difference of about 4 million people. The large impact of HIV/AIDS on the size of the older population is evident in the data for other countries as well.

CONCLUSION

The impact of HIV/AIDS on mortality rates in Sub-Saharan Africa has reshaped the population structure and age distribution in most countries. Approximately 2 million people died of HIV/AIDS in 2005 in Sub-Saharan Africa, and the number of people infected with HIV is still increasing (UNAIDS/WHO, 2006). The impact of HIV/AIDS dramatically affects how countries in Sub-Saharan Africa will age over the next several decades. Despite the devastating impact of HIV/AIDS and the fact that it has the voungest population of any region of the world, Sub-Saharan Africa is experiencing population aging. The proportions of people aged 60 and over are currently low and are projected to increase only modestly in many Sub-Saharan countries. However, most countries in the region can expect the *absolute* number of older people to grow over the next several decades, in many instances more than



doubling in size. These growing numbers of older people will age in countries that are ill equipped to deal with the challenges that aging populations pose. Many Sub-Saharan African countries lack social security systems and the infrastructure needed to help assist increasing numbers of older people. Additionally, most countries in the region have very limited resources and may be unlikely and unable, given competing demands, to use these to address the needs of older people.

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APPENDIX A: DETAILED TABLES

Table A-1. Older Population by Selected Age Group for Sub-Saharan African Countries: 1990, 2006, 2015, and 2030

Country/region	Total	Population 50 and o		Population 60 and		Population 80 and	
and year	Total – population	Number	Percent	Number	Percent	Number	Percent
SUB-SAHARAN AFRICA 1990	505,203 752,790 921,181	48,537 73,025 91,492	9.6 9.7 9.9	23,040 35,415 45,056	4.6 4.7 4.9	1,575 2,524 3,542	0.3 0.3 0.4
2030	1,244,021 8,297 11,993 14,443 18,960	140,443 865 1,128 1,360 1,871	11.3 10.4 9.4 9.9 9.9	69,205 349 541 603 867	5.6 4.2 4.5 4.2 4.6	6,330 14 22 33 47	0.5 0.2 0.2 0.2 0.2
Benin 1990 2006 2015 2030	4,676 7,863 9,821 12,893	401 655 883 1,598	8.6 8.3 9.0 12.4	198 307 413 727	4.2 3.9 4.2 5.6	23 20 27 57	0.5 0.3 0.3 0.4
Botswana 1990. 2006. 2015. 2030.	1,263 1,788 2,007 2,215	128 186 234 307	10.2 10.4 11.6 13.9	70 98 123 169	5.6 5.5 6.1 7.6	10 14 20 31	0.8 0.8 1.0 1.4
Burkina Faso 1990 2006 2015 2030	8,336 13,903 18,141 27,384	788 1,081 1,373 2,500	9.5 7.8 7.6 9.1	379 547 662 1,100	4.6 3.9 3.7 4.0	23 33 47 79	0.3 0.2 0.3 0.3
Burundi 1990 2006 2015 2030	5,505 8,090 10,724 15,637	506 685 922 1,442	9.2 8.5 8.6 9.2	260 312 444 713	4.7 3.9 4.1 4.6	27 28 39 64	0.5 0.3 0.4 0.4
Cameroon 1990 2006 2015 2030	11,884 17,658 21,387 27,531	1,127 1,807 2,324 3,582	9.5 10.2 10.9 13.0	538 881 1,161 1,809	4.5 5.0 5.4 6.6	36 64 93 179	0.3 0.4 0.4 0.6
Central African Republic 1990. 2006. 2015. 2030.	3,084 4,303 4,896 5,732	381 454 497 632	12.3 10.5 10.1 11.0	186 260 264 335	6.0 6.0 5.4 5.8	7 24 33 41	0.2 0.6 0.7 0.7
Chad 1990 2006 2015 2030	5,841 9,649 11,631 15,114	573 905 1,106 1,542	9.8 9.4 9.5 10.2	270 440 544 792	4.6 4.6 4.7 5.2	13 29 39 66	0.2 0.3 0.3 0.4
Congo (Brazzaville) 1990 2006 2015 2030	2,265 3,702 4,754 6,892	236 317 412 689	10.4 8.6 8.7 10.0	118 161 196 338	5.2 4.3 4.1 4.9	6 13 17 27	0.3 0.3 0.4 0.4

Country/region and year	Total –	Population 50 and o		Population 60 and		Population 80 and	
and year	population	Number	Percent	Number	Percent	Number	Percent
Congo (Kinshasa) 1990. 2006. 2015. 2030.	39,048 63,605 85,145 130,704	3,535 5,402 7,225 12,693	9.1 8.5 8.5 9.7	1,650 2,605 3,519 6,063	4.2 4.1 4.1 4.6	95 177 272 547	0.2 0.3 0.3 0.4
Cote d'Ivoire 1990 2006 2015 2030	11,981 17,655 20,885 26,079	1,030 1,806 2,087 3,268	8.6 10.2 10.0 12.5	427 821 1,119 1,545	3.6 4.7 5.4 5.9	23 43 70 155	0.2 0.2 0.3 0.6
Eritrea 1990 2006 2015 2030	2,996 4,787 5,927 7,875	320 513 627 1,014	10.7 10.7 10.6 12.9	162 268 346 495	5.4 5.6 5.8 6.3	18 23 32 64	0.6 0.5 0.5 0.8
Ethiopia 1990 2006 2015 2030	48,197 74,778 90,544 115,985	4,573 7,077 8,941 13,424	9.5 9.5 9.9 11.6	2,156 3,302 4,275 6,555	4.5 4.4 4.7 5.7	124 220 300 540	0.3 0.3 0.3 0.5
Gabon 1990 2006 2015 2030	937 1,425 1,703 2,262	121 156 190 236	12.9 11.0 11.1 10.4	65 83 95 135	6.9 5.9 5.6 6.0	5 8 11 15	0.5 0.6 0.7
Gambia, The 1990. 2006. 2015. 2030.	949 1,642 2,080 2,912	87 159 214 345	9.1 9.7 10.3 11.9	42 73 102 172	4.5 4.5 4.9 5.9	5 5 7 14	0.5 0.3 0.3 0.5
Ghana 1990. 2006. 2015. 2030.	15,414 22,479 26,475 32,398	1,538 2,305 3,230 5,513	10.0 10.3 12.2 17.0	758 1,177 1,505 2,854	4.9 5.2 5.7 8.8	54 102 148 249	0.3 0.5 0.6 0.8
Guinea 1990 2006 2015 2030	6,279 9,690 12,242 17,919	656 985 1,234 1,800	10.4 10.2 10.1 10.0	314 484 610 911	5.0 5.0 5.0 5.1	20 33 48 82	0.3 0.3 0.4 0.5
Guinea-Bissau 1990 2006 2015 2030	996 1,443 1,726 2,231	99 153 187 282	9.9 10.6 10.8 12.7	47 70 94 136	4.7 4.9 5.4 6.1	4 4 6 12	0.4 0.3 0.3 0.5
Kenya 1990 2006 2015 2030	23,354 35,891 44,753 54,150	1,834 3,044 4,268 7,679	7.9 8.5 9.5 14.2	915 1,449 2,025 3,692	3.9 4.0 4.5 6.8	85 126 180 353	0.4 0.3 0.4 0.7

Country/region and year	Total –	Population 50 and o		Population 60 and		Population 80 and	
	population	Number	Percent	Number	Percent	Number	Percent
Lesotho 1990. 2006. 2015. 2030.	1,721 2,122 2,142 2,085	217 273 292 288	12.6 12.9 13.6 13.8	119 148 159 176	6.9 7.0 7.4 8.4	12 20 24 29	0.7 0.9 1.1 1.4
Liberia 1990. 2006. 2015. 2030.	2,117 3,044 3,923 5,206	200 304 385 507	9.5 10.0 9.8 9.7	89 140 186 248	4.2 4.6 4.8 4.8	6 7 10 18	0.3 0.2 0.3 0.3
Madagascar 1990 2006 2015 2030	11,633 18,872 24,651 36,797	1,181 1,798 2,518 4,422	10.2 9.5 10.2 12.0	620 881 1,205 2,262	5.3 4.7 4.9 6.1	41 82 115 208	0.4 0.4 0.5 0.6
Malawi 1990 2006 2015 2030	9,536 13,284 16,418 22,182	849 1,157 1,339 1,773	8.9 8.7 8.2 8.0	387 563 692 877	4.1 4.2 4.2 4.0	18 35 51 91	0.2 0.3 0.3 0.4
Mali 1990 2006 2015 2030	8,085 11,681 15,055 23,693	848 1,037 1,137 1,868	10.5 8.9 7.6 7.9	415 568 623 815	5.1 4.9 4.1 3.4	24 34 45 76	0.3 0.3 0.3 0.3
Mauritania 1990. 2006. 2015. 2030.	1,984 3,177 4,091 5,942	184 261 356 611	9.3 8.2 8.7 10.3	85 116 152 278	4.3 3.6 3.7 4.7	3 4 6 13	0.2 0.1 0.2 0.2
Mauritius 1990. 2006. 2015. 2030.	1,074 1,241 1,328 1,433	158 259 362 494	14.7 20.9 27.3 34.5	87 121 182 313	8.1 9.7 13.7 21.9	7 14 18 38	0.6 1.1 1.4 2.7
Mozambique 1990. 2006. 2015. 2030.	12,667 20,530 24,166 31,340	1,153 2,009 2,333 2,785	9.1 9.8 9.7 8.9	493 931 1,146 1,459	3.9 4.5 4.7 4.7	21 51 77 136	0.2 0.3 0.3 0.4
Namibia 1990 2006 2015 2030	1,471 2,044 2,092 2,018	148 230 255 287	10.0 11.2 12.2 14.2	74 116 138 165	5.0 5.7 6.6 8.2	9 10 14 25	0.6 0.5 0.7 1.3
Niger 1990. 2006. 2015. 2030.	7,945 12,525 16,152 23,586	713 1,112 1,420 2,164	9.0 8.9 8.8 9.2	310 511 654 1,014	3.9 4.1 4.1 4.3	11 21 31 55	0.1 0.2 0.2 0.2

Country/region	Tatal	Population 50 and o		Population 60 and		Population aged 80 and over		
and year	Total – population	Number	Percent	Number	Percent	Number	Percent	
Nigeria 1990. 2006. 2015. 2030.	88,510 131,860 163,346 231,000	8,832 13,695 16,894 25,352	10.0 10.4 10.3 11.0	4,091 6,600 8,385 12,283	4.6 5.0 5.1 5.3	187 363 515 954	0.2 0.3 0.3 0.4	
Rwanda 1990 2006 2015 2030	6,982 9,638 12,332 17,488	604 804 1,116 2,002	8.7 8.3 9.1 11.4	309 360 505 914	4.4 3.7 4.1 5.2	19 30 39 65	0.3 0.3 0.3 0.4	
Senegal 1990 2006 2015 2030	7,846 12,191 15,207 20,515	707 1,203 1,624 2,753	9.0 9.9 10.7 13.4	331 577 790 1,357	4.2 4.7 5.2 6.6	20 40 60 121	0.3 0.3 0.4 0.6	
Sierra Leone 1990 2006 2015 2030	4,221 6,005 7,367 10,094	472 614 676 981	11.2 10.2 9.2 9.7	214 309 355 466	5.1 5.1 4.8 4.6	17 18 24 37	0.4 0.3 0.3 0.4	
Somalia 1990 2006 2015 2030	6,675 8,863 11,389 16,863	641 710 1,076 1,869	9.6 8.0 9.5 11.1	336 353 424 925	5.0 4.0 3.7 5.5	33 28 34 50	0.5 0.3 0.3 0.3	
South Africa 1990 2006 2015 2030	38,391 44,188 42,261 38,414	4,677 6,964 7,594 7,646	12.2 15.8 18.0 19.9	2,307 3,512 4,120 4,764	6.0 7.9 9.7 12.4	238 366 478 739	0.6 0.8 1.1 1.9	
Sudan 1990 2006 2015 2030	26,050 38,574 46,813 63,060	2,225 3,569 4,660 8,284	8.5 9.3 10.0 13.1	979 1,593 2,163 3,862	3.8 4.1 4.6 6.1	74 68 98 258	0.3 0.2 0.2 0.4	
Swaziland 1990 2006 2015 2030	885 1,136 1,090 953	77 113 101 69	8.7 10.0 9.2 7.3	36 60 60 49	4.1 5.3 5.5 5.1	3 6 8 11	0.3 0.5 0.7 1.1	
Tanzania 1990. 2006. 2015. 2030.	25,214 38,569 46,123 56,530	2,373 3,433 4,294 7,010	9.4 8.9 9.3 12.4	1,166 1,690 2,175 3,284	4.6 4.4 4.7 5.8	107 125 179 329	0.4 0.3 0.4 0.6	
Togo 1990 2006 2015 2030	3,505 5,549 7,061 10,025	279 497 690 1,200	8.0 9.0 9.8 12.0	133 236 335 599	3.8 4.2 4.8 6.0	15 16 24 56	0.4 0.3 0.3 0.6	

(In thousands)

Country/region and year	Total	Populatio 50 and		Populati 60 and			ion aged d over
	population	Number	Percent	Number	Percent	Number	Percent
Uganda							
1990	17,456	1,420	8.1	680	3.9	40	0.2
2006	29,207	1,892	6.5	970	3.3	80	0.3
2015	39,941	2,568	6.4	1,188	3.0	115	0.3
2030	67,286	4,461	6.6	2,078	3.1	186	0.3
Zambia							
1990	7,978	665	8.3	314	3.9	24	0.3
2006	11,288	821	7.3	415	3.7	31	0.3
2015	13,017	884	6.8	447	3.4	38	0.3
2030	15,647	1,180	7.5	524	3.3	51	0.3
Zimbabwe							
1990	10,153	907	8.9	454	4.5	43	0.4
2006	12,237	1,173	9.6	618	5.1	73	0.6
2015	12,772	1,244	9.7	689	5.4	93	0.7
2030	12,842	1,433	11.2	783	6.1	133	1.0

Country/region and year	All ages	0 to 19	20 to 49	50 to 59	60 to 69	70 to 79	80 and over
SUB-SAHARAN AFRICA							
1990	505,203	281,061	175,606	25,497	14,951	6,514	1,575
	· · ·		,				
2006	752,790	406,769	272,996	37,609	22,600	10,291	2,524
2015	921,181	481,263	348,425	46,436	28,295	13,219	3,542
2030	1,244,021	596,131	507,446	71,238	42,169	20,707	6,330
Angola							
1990	8,297	4,358	3,073	516	253	82	14
2006	11,993	6,524	4,340	588	367	151	22
2015	14,443	7,754	5,330	756	395	175	33
2030	18,960	9,466	7,623	1,004	598	223	47
	-,	-,	,	,		-	
Benin							
1990	4,676	2,779	1,496	203	118	57	23
2006	7,863	4,358	2,850	348	206	81	20
2015	9,821	5,113	3,826	469	266	120	27
2030	12,893	5,569	5,725	871	468	202	57
Botswana							
1990	1,263	710	424	58	39	22	10
2006	1,263	871	424 731	58 88	39 52	22 31	10
		-	912		52 66	37	20
2015	2,007	862	-	111		-	-
2030	2,215	834	1,073	139	82	56	31
Burkina Faso							
1990	8,336	4,909	2,638	409	251	105	23
2006	13,903	8,019	4,803	533	351	163	33
2015	18,141	10,265	6,503	711	412	203	47
2030	27,384	14,651	10,233	1,401	725	296	79
		,		.,	•		
Burundi							
1990	5,505	3,127	1,873	246	150	83	27
2006	8,090	4,654	2,752	373	187	98	28
2015	10,724	6,051	3,751	478	287	119	39
2030	15,637	8,192	6,003	728	417	232	64
Cameroon							
1990	11,884	6,635	4,123	589	348	155	26
	· · · ·	· · ·	,			155 258	36 64
2006	17,658	9,323 10,698	6,528 8,365	927	559 723		93
2015	21,387 27,531	12,052	0,305 11,897	1,162 1,773	1,072	345 559	179
2030	27,001	12,052	11,097	1,775	1,072	559	179
Central African Republic							
1990	3,084	1,656	1,046	194	130	50	7
2006	4,303	2,312	1,537	194	148	87	24
2015	4,896	2,481	1,918	232	142	89	33
2030	5,732	2,558	2,541	298	194	100	41
Chad						l !	
1990	5,841	3,306	1,963	303	181	75	13
2006	9,649	5,621	3,123	465	284	127	29
2015	11,631	6,487	4,038	562	344	161	39
2030	15,114	7,273	6,299	750	487	238	66
Congo (Brazzaville)							
	0.065	1 050	774	110	77	9F	6
1990	2,265	1,258	1 262	118	77 96	35	6
2006	3,702 4,754	2,123	1,263	156		52	13
2015		2,660	1,681	216 350	120 212	59 99	17 27
2000	6,892	3,488	2,716	330	212	99	21
Congo (Kinshasa)							
1990	39,048	22,392	13,120	1,885	1,099	456	95
2006	63,605	37,088	21,115	2,797	1,679	749	177
2015	85,145	48,580	29,340	3,707	2,213	1,033	272
2030	130,704	68,035	49,976	6,630	3,784	1,732	547
	,		_ ,	.,	-,	,	

Country/region and year	All ages	0 to 19	20 to 49	50 to 59	60 to 69	70 to 79	80 and over
Cote d'Ivoire							
1990	11,981	6,734	4,217	604	298	105	23
2006	17,655	9,156	6,693	985	560	218	43
2015	20,885	10,395	8,402	968	733	316	70
2030	26,079	11,599	11,212	1,723	934	456	155
Eritrea							
1990	2.996	1,740	936	158	99	45	18
2006	4,787	2,626	1,649	245	169	76	23
2015	5,927	3,016	2,285	281	204	111	32
2030	7,875	3,413	3,447	519	275	157	64
Ethiopia							
1990	48,197	26,697	16,927	2,418	1,433	599	124
2006	74,778	40,998	26,703	3,775	2,149	934	220
2015	90,544	47,115	34,488	4,665	2,773	1,203	300
2030	115,985	52,099	50,462	6,869	4,056	1,958	540
Gabon							
1990	937	485	332	57	40	20	5
2006	1,425	757	512	73	48	27	8
2015	1,703	902	611	95	54	30	11
2030	2,262	1,162	864	101	78	41	15
Gambia, The							_
1990	949	533	330	44	25	12	5
2006	1,642 2,080	901	581 764	86	48 67	20 29	5 7
2015	2,080	1,101 1,383	1,184	112 174	105	29 52	14
	2,912	1,000	1,104	174	105	52	14
Ghana 1990	15,414	8,521	5,355	779	482	223	54
2006	22,479	11,285	8,889	1,128	702	373	102
2015	26,475	11,973	11,272	1,725	893	464	148
2030.	32,398	12,076	14,810	2,658	1,773	833	249
Guinea							
1990	6,279	3,407	2,216	342	206	88	20
2006	9,690	5,318	3,387	501	309	141	33
2015	12,242	6,681	4,327	625	381	181	48
2030	17,919	9,512	6,607	889	557	273	82
Guinea-Bissau							
1990	996	549	348	52	28	14	4
2006	1,443	751	539	83	46	20	4
2015	1,726	867	672	93	62	26	6
2030	2,231	1,016	932	147	80	43	12
Kenya							
1990	23,354	13,898	7,623	919	562	269	85
2006	35,891	19,117	13,729	1,596	885	438	126
2015	44,753	22,803	17,681	2,243	1,266	579	180
2030	54,150	20,326	26,144	3,988	2,224	1,114	353
Lesotho		_				l	
1990	1,721	892	612	98	71	36	12
2006	2,122	1,020	829	125	77	51	20
2015	2,142	940 817	910 981	133	87 86	48 61	24 29
2030	2,085	817	981	112	86	61	29
Liberia	0.447					00	-
1990	2,117	1,144 1,647	773 1,093	111	60 96	23	6 7
2006			1 1193	165		37	/
2015	3,044						
2015	3,923 5,206	2,141	1,397 2,067	198 259	124 156	52 74	, 10 18

Country/region and year	All ages	0 to 19	20 to 49	50 to 59	60 to 69	70 to 79	80 and over
Madagascar 1990 2006 2015 2030	11,633	6,487	3,964	561	396	183	41
	18,872	10,366	6,707	918	515	285	82
	24,651	13,075	9,058	1,313	751	339	115
	36,797	18,030	14,345	2,160	1,385	668	208
Malawi 1990 2006 2015 2030	9,536 13,284 16,418 22,182	5,425 7,661 9,249 11,624	3,262 4,466 5,830 8,785	462 594 647 896	264 364 433 499	104 163 208 287	18 35 51 91
Mali 1990. 2006. 2015. 2030.	8,085	4,749	2,487	433	269	122	24
	11,681	6,888	3,756	468	371	164	34
	15,055	8,910	5,008	513	368	211	45
	23,693	13,556	8,269	1,053	507	232	76
Mauritania 1990. 2006. 2015. 2030.	1,984	1,110	691	99	59	23	3
	3,177	1,792	1,124	145	79	33	4
	4,091	2,236	1,499	204	104	41	6
	5,942	2,941	2,390	333	190	76	13
Mauritius 1990. 2006. 2015. 2030.	1,074	419	496	71	55	25	7
	1,241	397	584	138	68	39	14
	1,328	378	588	180	116	48	18
	1,433	357	582	181	166	109	38
Mozambique 1990	12,667	6,824	4,689	660	346	126	21
	20,530	11,404	7,117	1,077	621	259	51
	24,166	13,277	8,557	1,187	737	332	77
	31,340	16,372	12,184	1,326	860	463	136
Namibia 1990	1,471	821	503	74	43	22	9
	2,044	1,024	790	114	71	34	10
	2,092	927	910	117	81	43	14
	2,018	704	1,027	123	83	56	25
Niger 1990 2006 2015 2030	7,945 12,525 16,152 23,586	4,486 7,191 9,243 12,611	2,746 4,221 5,488 8,811	403 602 766 1,150	221 354 443 677	78 136 181 282	11 21 31 55
Nigeria 1990 2006 2015 2030	88,510 131,860 163,346 231,000	48,529 69,693 85,448 117,094	31,149 48,472 61,004 88,554	4,741 7,095 8,508 13,068	2,783 4,377 5,412 7,676	1,120 1,860 2,459 3,653	187 363 515 954
Rwanda 1990. 2006. 2015. 2030.	6,982	4,020	2,357	296	197	93	19
	9,638	5,166	3,668	444	214	117	30
	12,332	6,457	4,758	611	335	130	39
	17,488	8,400	7,086	1,088	566	283	65
Senegal 1990. 2006. 2015. 2030.	7,846	4,456	2,683	376	218	94	20
	12,191	6,467	4,521	626	370	167	40
	15,207	7,711	5,871	835	499	231	60
	20,515	9,056	8,706	1,396	832	404	121

(In thousands)

Country/region and year	All ages	0 to 19	20 to 49	50 to 59	60 to 69	70 to 79	80 and over
Sierra Leone							
1990	4,221	2,271	1,479	257	137	60	17
2006	6,005	3,328	2,063	305	204	88	18
2015	7,367	4,044	2,647	321	221	111	24
2030	10,094	5,198	3,916	515	303	125	37
Somalia							
1990	6,675	3,715	2,319	306	196	107	33
2006	8,863	4,891	3,263	357	218	107	28
2015	11,389	6,243	4,069	652	264	126	34
2030	16,863	8,696	6,299	944	632	243	50
South Africa							
1990	38,391	18,325	15,389	2,370	1,417	652	238
2006	44,188	18,213	19,010	3,452	2,092	1,054	366
2015	42,261	15,148	19,519	3,474	2,404	1,237	478
2030	38,414	12,168	18,600	2,882	2,346	1,679	739
Sudan							
1990	26,050	14,683	9,142	1,245	605	301	74
2006	38,574	20,552	14,453	1,976	1,133	392	68
2015	46,813	23,074	19,080	2,497	1,467	598	98
2030	63,060	27,742	27,035	4,422	2,585	1,019	258
Swaziland							
1990	885	508	300	41	23	10	3
2006	1,136	614	409	54	35	19	6
2015	1,090	552	438	41	32	19	8
2030	953	440	444	20	20	19	11
Tanzania							
1990	25,214	14,527	8,315	1,207	707	352	107
2006	38,569	21,496	13,639	1,743	1,063	502	125
2015	46,123	23,671	18,157	2,119	1,346	650	179
2030	56,530	23,185	26,335	3,727	1,939	1,015	329
Тодо							
1990	3,505	2,069	1,156	146	81	37	15
2006	5,549	2,997	2,055	261	153	67	16
2015	7,061	3,616	2,755	355	212	99	24
2030	10,025	4,797	4,028	601	364	179	56
Uganda							
1990	17,456	10,371	5,665	739	453	187	40
2006	29,207	18,059	9,255	922	585	304	80
2015	39,941	24,306	13,068	1,380	705	368	115
2030	67,286	39,980	22,845	2,382	1,300	593	186
Zambia							
1990	7,978	4,735	2,578	351	197	93	24
2006	11,288	6,560	3,907	406	258	127	31
2015	13,017	7,202	4,931	437	271	138	38
2030	15,647	7,898	6,569	656	315	158	51
Zimbabwe							
1990	10,153	5,819	3,427	453	272	139	43
2006	12,237	6,163	4,901	555	350	195	73
2015	12,772	6,025	5,504	554	379	217	93
2030	12,842	5,276	6,133	650	371	279	133

Table A-3a.Average Annual Growth Rate by Selected Age Group for Sub-Saharan African Countries:2006-2015 and 2015-2030

2		2006–2015		2015–2030			
Country/region	All ages	50 and over	60 and over	All ages	50 and over	60 and over	
Sub-Saharan Africa	2.2	2.5	2.7	2.0	2.9	2.9	
Angola	2.1	2.1	1.2	1.8	2.1	2.4	
Benin	2.5	3.3	3.3	1.8	4.0	3.8	
Botswana	1.3	2.5	2.6	0.7	1.8	2.1	
Burkina Faso	3.0	2.7	2.1	2.7	4.0	3.4	
Burundi	3.1	3.3	3.9	2.5	3.0	3.2	
Cameroon	2.1	2.8	3.1	1.7	2.9	3.0	
	1.4	1.0	0.2	1.1	1.6	1.6	
Chad	2.1	2.2	2.3	1.7	2.2	2.5	
	2.8	2.9	2.2	2.5	3.4	3.6	
	3.2	3.2	3.3	2.9	3.8	3.6	
	1.9	1.6	3.4	1.5	3.0	2.1	
	2.4	2.2	2.9	1.9	3.2	2.4	
	2.1	2.6	2.9	1.7	2.7	2.8	
	2.0	2.1	1.4	1.9	1.4	2.3	
Gambia, The	2.6	3.3	3.7	2.2	3.2	3.5	
Ghana	1.8	3.8	2.7	1.3	3.6	4.3	
Guinea	2.6	2.5	2.6	2.5	2.5	2.7	
Guinea-Bissau	2.0	2.3	3.2	1.7	2.7	2.5	
Kenya	2.5	3.8	3.7	1.3	3.9	4.0	
Lesotho	0.1	0.8	0.8	-0.2	-0.1	0.7	
Liberia	2.8	2.6	3.2	1.9	1.8	1.9	
Madagascar	3.0	3.7	3.5	2.7	3.8	4.2	
	2.4	1.6	2.3	2.0	1.9	1.6	
	2.8	1.0	1.0	3.0	3.3	1.8	
	2.8	3.4	3.0	2.5	3.6	4.0	
	0.8	3.7	4.6	0.5	2.1	3.6	
	1.8	1.7	2.3	1.7	1.2	1.6	
	0.3	1.1	1.9	-0.2	0.8	1.2	
Niger	2.8	2.7	2.8	2.5	2.8	2.9	
	2.4	2.3	2.7	2.3	2.7	2.5	
	2.7	3.6	3.8	2.3	3.9	3.9	
	2.5	3.3	3.5	2.0	3.5	3.6	
	2.3	1.1	1.5	2.1	2.5	1.8	
	2.8	4.6	2.1	2.6	3.7	5.2	
	-0.5	1.0	1.8	-0.6	0.0	1.0	
Sudan	2.2	3.0	3.4	2.0	3.8	3.9	
Swaziland	-0.5	-1.3	0.0	-0.9	-2.5	-1.3	
Tanzania	2.0	2.5	2.8	1.4	3.3	2.7	
Togo	2.7	3.7	3.9	2.3	3.7	3.9	
Uganda	3.5	3.4	2.3	3.5	3.7	3.7	
Zambia.	1.6	0.8	0.8	1.2	1.9	1.1	
Zimbabwe	0.5	0.6	1.2	0.0	0.9	0.9	

Table A-3b. Percent Change by Selected Age Group for Sub-Saharan African Countries: 2006–2015 and 2015–2030

2006–2015			2015–2030			
Country/region —	All ages	50 and over	60 and over	All ages	50 and over	60 and over
Sub-Saharan Africa	22.4	25.3	27.2	35.0	53.5	53.6
Angola	20.4	20.5	11.6	31.3	37.6	43.8
Benin	24.9	34.8	34.6	31.3	81.0	76.0
Botswana	12.3	25.7	26.3	10.3	31.5	36.9
Burkina Faso	30.5	27.0	21.0	50.9	82.2	66.1
Burundi	32.6	34.6	42.1	45.8	56.4	60.6
Cameroon	21.1	28.6	31.9	28.7	54.1	55.8
Central African Republic	13.8	9.4	1.8	17.1	27.3	26.6
Chad	20.5	22.2	23.5	29.9	39.4	45.6
Congo (Brazzaville)	28.4	30.1	22.0	45.0	67.1	72.5
Congo (Kinshasa)	33.9	33.8	35.1	53.5	75.7	72.3
Cote d'Ivoire	18.3	15.6	36.3	24.9	56.6	38.1
Eritrea	23.8	22.3	29.3	32.9	61.7	43.0
Ethiopia	21.1	26.3	29.5	28.1	50.2	53.3
Gabon	19.5	21.3	13.5	32.8	24.1	42.0
Gambia, The	26.7	34.6	39.9	40.0	61.5	67.8
Ghana	17.8	40.1	27.8	22.4	70.7	89.6
Guinea	26.3	25.3	26.1	46.4	45.8	49.4
Guinea-Bissau	19.6	22.5	33.6	29.2	50.9	44.6
Kenya	24.7	40.2	39.8	21.0	79.9	82.3
Lesotho	0.9	7.0	7.5	-2.6	-1.5	10.4
Liberia	28.9	26.5	33.6	32.7	31.8	33.1
Madagascar	30.6	40.0	36.8	49.3	75.7	87.7
Malawi	23.6	15.8	23.1	35.1	32.4	26.7
Mali	28.9	9.6	9.7	57.4	64.4	30.8
Mauritania	28.8	36.2	31.3	45.2	71.8	83.1
Mauritius	7.1	39.8	50.9	7.9	36.4	71.6
Mozambique	17.7	16.1	23.0	29.7	19.4	27.3
Namibia	2.3	10.8	19.0	-3.5	12.9	19.3
Niger	29.0	27.6	28.1	46.0	52.4	54.9
Nigeria	23.9	23.4	27.1	41.4	50.1	46.5
Rwanda	27.9	38.8	40.3	41.8	79.4	80.8
Senegal	24.7	35.1	36.9	34.9	69.5	71.9
Sierra Leone	22.7	10.1	14.8	37.0	44.9	31.2
Somalia	28.5	51.7	20.3	48.1	73.6	118.1
South Africa	-4.4	9.0	17.3	-9.1	0.7	15.6
Sudan	21.4	30.6	35.8	34.7	77.8	78.5
Swaziland	-4.1	-11.3	-0.1	-12.6	-31.3	-17.8
Tanzania	19.6	25.1	28.7	22.6	63.3	51.0
Тодо	27.3	39.0	42.3	42.0	73.8	78.6
Uganda	36.8	35.7	22.5	68.5	73.7	74.9
Zambia	15.3	7.6	7.6	20.2	33.5	17.1
Zimbabwe	4.4	6.0	11.5	0.6	15.3	13.6

Table A-4. Median Age for Sub-Saharan African Countries: 2006, 2015, and 2030

Country/region	2006	2015	2030
Sub-Saharan Africa	18.2	19.0	21.1
Angola	17.9	18.4	20.0
Benin	17.6	19.1	23.4
Botswana	20.6	23.2	26.4
Burkina Faso	16.5	17.0	18.4
Burundi	16.6	17.1	18.9
Cameroon	18.8	20.0	23.2
Central African Republic	18.4	19.7	22.6
Chad	16.2	17.5	21.0
Congo (Brazzaville)	16.6	17.4	19.7
Congo (Kinshasa)	16.1	16.8	19.1
	19.2	20.1	22.8
Eritrea	17.8 17.8	19.6 19.1	23.5
Ethiopia	17.8	18.6	22.5 19.4
Gabon	10.0	10.0	19.4
Gambia, The	17.7	18.6	21.3
Ghana	19.9	22.4	27.0
Guinea	17.7	17.9	18.6
Guinea-Bissau	19.0	19.9	22.3
Kenya	18.5	19.5	25.4
	20.9	22.7	25.4
Liberia	18.1	18.0	19.7
Madagascar	17.7	18.6	20.5
Malawi	16.6	17.3	19.0
Mali	15.9	15.8	16.8
Mauritania	17.0	17.9	20.3
Mauritius	30.8	34.2	38.6
	17.4	18.0	19.0
Namibia	20.0	22.4	27.3
Niger	16.5	16.6	18.5
Nigeria	18.7	18.9	19.7
Rwanda	18.5	18.9	21.0
Senegal	18.6	19.7	23.0
Sierra Leone	17.4	17.8	19.3
Somalia	17.6	17.7	19.3
South Africa	24.1	26.4	30.3
Sudan	18.5	20.4	23.3
Swaziland	18.5	19.8	21.5
	17.5	19.4	24.3
	18.3	19.4	21.1
Uganda	14.9	15.2	15.8
Zambia	16.7 19.9	17.8 21.3	19.8 24.0
	19.9	21.3	24.0

Table A-5. **Total Fertility Rate and Life Expectancy at Birth by Sex for Sub-Saharan African Countries: 2006**

Country/region	Total	Life expectancy at birth			
Country/region	fertility rate	Both sexes	Male	Female	
Sub-Saharan Africa	5.3	49.4	48.4	50.3	
Angola	6.4	37.3	36.5	38.2	
Benin	5.2	53.0	51.9	54.2	
Botswana	2.8	51.2	52.0	50.4	
Burkina Faso	6.5	48.9	47.3	50.4	
Burundi.	6.6	50.8	50.1	51.6	
Cameroon	4.6	52.3	51.7	53.0	
Central African Republic	4.4	43.5	43.5	43.6	
Chad	5.7	47.0	46.0	48.1	
Congo (Brazzaville)	6.1	52.8	51.6	54.0	
Congo (Kinshasa)	6.5	56.8	54.6	59.1	
Cote d'Ivoire	4.5	48.8	46.2	51.5	
Eritrea.	5.1	59.0	57.4	60.7	
Ethiopia	5.2	49.0	47.9	50.2	
Gabon	4.7	54.5	53.2	55.8	
Gambia, The	5.3	54.1	52.3	56.0	
Ghana	4.0	58.8	58.0	59.5	
Guinea	5.8	49.5	48.3	50.7	
Guinea-Bissau	4.9	46.9	45.1	48.7	
Kenya	4.9	54.2	54.3	54.2	
Lesotho	3.3	39.8	40.4	39.0	
Liberia	6.0	39.6	38.0	41.3	
Madagascar	5.3	61.8	59.9	63.7	
Malawi	5.8	42.4	42.8	41.9	
Mali	7.4	49.1	47.2	51.0	
Mauritania	5.9	53.1	50.9	55.4	
Mauritius	2.0	72.6	68.7	76.7	
Mozambique	5.4	40.8	41.2	40.4	
Namibia	3.1	43.4	44.5	42.3	
Niger.	7.5	43.8	43.8	43.7	
Nigeria	5.5	47.1	46.5	47.7	
Rwanda	5.4	48.2	47.2	49.3	
Senegal	5.1	56.3	55.0	57.7	
Sierra Leone	6.1	40.2	38.0	42.5	
Somalia	6.8	48.5	46.7	50.3	
South Africa.	2.2	42.7	43.2	42.2	
Sudan.	4.8	47.9	47.1	48.8	
Swaziland	3.5	32.6	32.1	33.2	
Tanzania	4.9	49.7	48.5	50.9	
Togo	5.0	57.4	55.4	59.5	
Uganda	6.9	51.0	50.1	51.9	
Zambia	5.4	38.1	38.0	38.1	
Zimbabwe	3.1	39.3	40.4	38.2	

Table A-6. Adult (Ages 15 to 49) HIV Prevalence Rates for Sub-Saharan African Countries: 2005

Country	Prevalence rate estimate (percent)
Sub-Saharan Africa	6.1
Angola	3.7 1.8 23.1 4.3 5.9 5.4 13.4
Chad	3.5
Congo (Brazzaville)	4.7
Congo (Kinshasa)	2.9
Cote d'Ivoire	7.0
Eritrea	2.6
Ethiopia	4.7
Gabon	9.2
Gambia, The	1.1
Ghana	2.3
Guinea	3.6
Guinea Bissau	4.2
Kenya	6.1
Lesotho	23.2
Liberia	6.4
Madagascar	0.5
Malawi	14.0
Mali	1.7
Mauritania	0.7
Mauritius	0.6
Mozambique	16.1
Namibia	20.8
Niger	1.4 5.3 3.0 0.9 4.2 0.9 20.5
Sudan	1.6
Swaziland	38.5
Tanzania	6.4
Togo	4.1
Uganda	7.0
Zambia	16.9
Zimbabwe	24.6

Sources: UNAIDS/WHO, 2006 and U.S. Census Bureau, International Programs Center, 2007.

