

# GLOBAL POPULATION COMPOSITION



*The age-sex composition of a society's population has significant implications for the current and future development of that society. As we saw in the previous section, the age-sex structure can cause a population to grow even when the levels of fertility and mortality suggest equilibrium or even decline. In addition, the age-sex composition of a population has its own direct implications for public policy.*

*This section on **Global Population Composition** begins with a description of the current age-sex composition of populations around the globe. We then discuss the mechanics behind population structure, look at current levels and trends, and finally, look toward the future of population composition around the globe.*



## THE COMPOSITION OF GLOBAL POPULATION

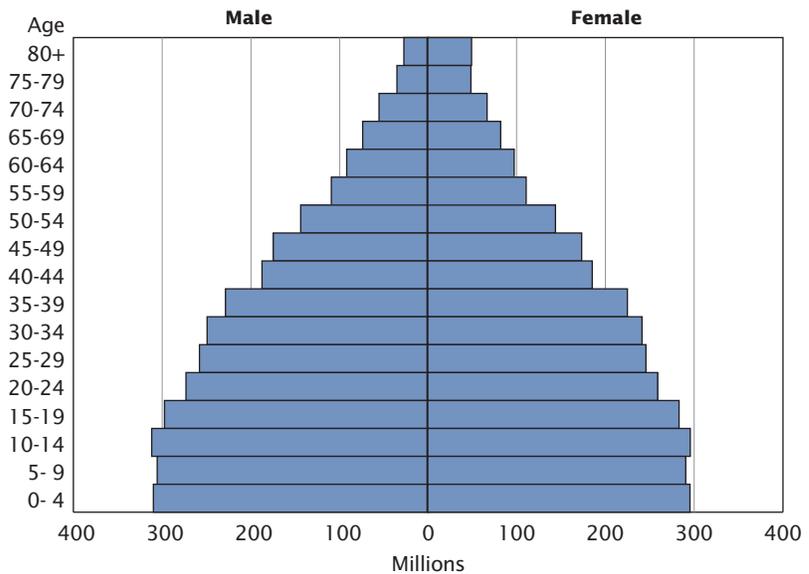
### A Global View of Population Composition in 2002 Hid Some Striking Regional Differences

The age-sex composition of the globe's population in 2002 is depicted in Figure 18. This pyramid illustrates the following characteristics:

- The number of men and women on the globe was approximately equal.
- Men outnumbered women up through the 50-54 age group, after which women outnumbered men.
- The largest age group for both males and females was ages 10-14, followed closely by ages 0-4, and then ages 5-9.
- Each successively older age group beginning with ages 15-19 was progressively smaller.

As the pyramids in Figure 19 illustrate, however, population age-sex structure varied across major world regions. First, although men outnumbered women in all of Asia, the Near East, and North Africa, women outnumbered men in the developed world, Eastern Europe and the NIS, and Latin America and the Caribbean. In addition, although women typically outnumbered men in the older age groups, the exact age at which this transition occurred varied widely across regions, from a low in Latin

Figure 18.  
**Age-Sex Structure of Global Population: 2002**  
**The globe's population in 2002 was relatively young.**



Source: U.S. Census Bureau, International Programs Center, International Data Base.

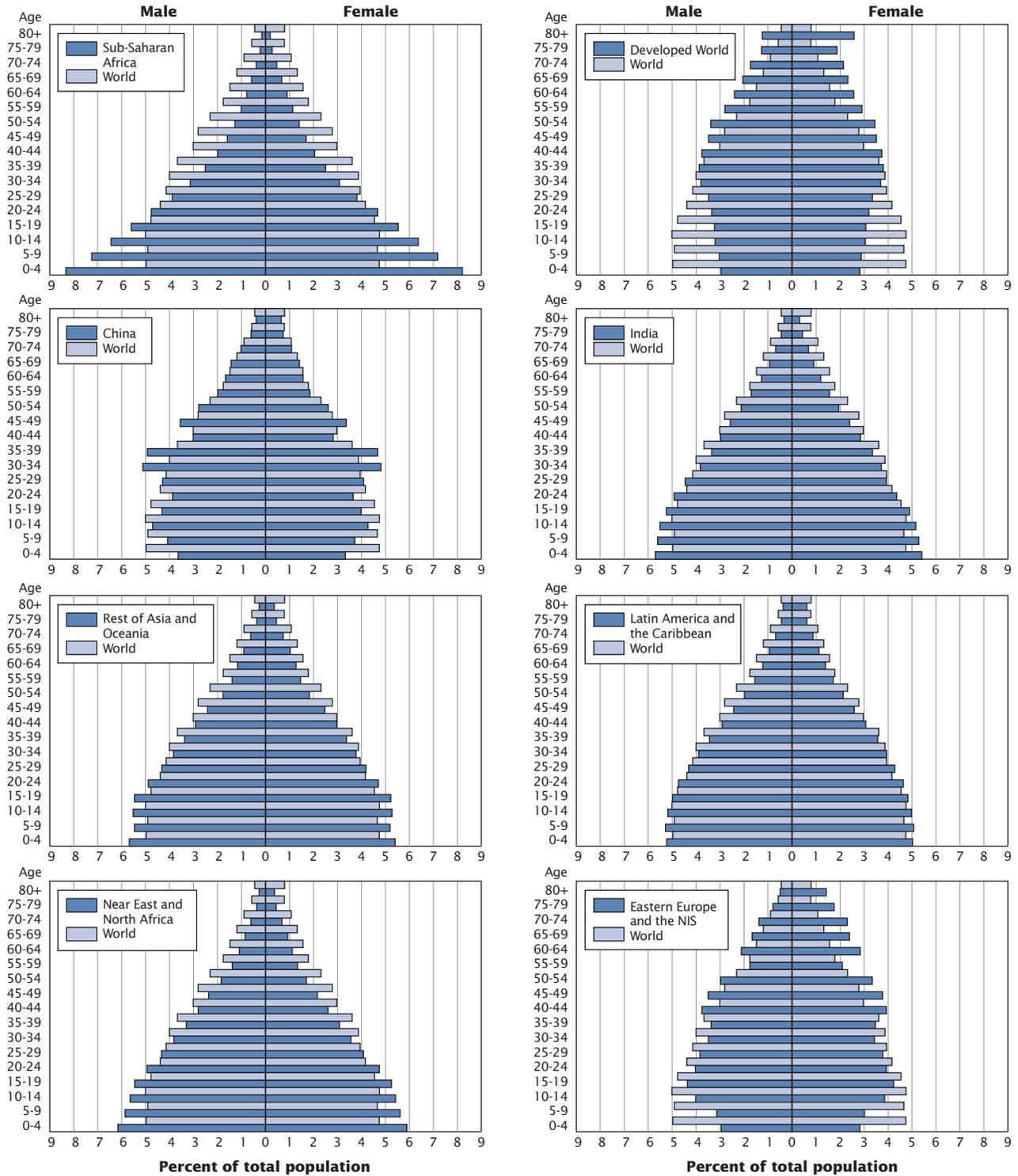
America and the Caribbean (the 30-34 year-old age group) to the extreme in India, where women never outnumbered men.

In terms of the age structure of populations, regions comprising less developed countries tended to have the highest percentages of their populations under age 15. In Sub-Saharan Africa, the Near East and North Africa, and for Asia and the Pacific excluding China and India, the largest proportion of the

population was 0 through 4 years old. In contrast, in more developed world regions and China, older ages composed the largest population groups. Finally, whereas the populations of less developed regions decreased in size progressively as age increased, the patterns in the developed world, Eastern Europe and the NIS, and China were more irregular and much larger proportions of population were ages 65 and higher.

Figure 19.

**Population Pyramids by Region and Selected Countries: 2002**  
**The age-sex compositions of Sub-Saharan Africa and the developed world reflected the remarkable variation across the globe.**



Source: U.S. Census Bureau, International Programs Center, International Data Base.

# THE MECHANICS OF AGE-SEX COMPOSITION

## The Age-Sex Composition of a Population Is Determined by the Age- and Sex-Specific Patterns of Fertility, Mortality, and Migration

In one sense, the mechanics that determine the age-sex composition

of a population are the same as those that drive change in the size of a population: fertility, mortality, and migration. In the case of age-sex composition, however, not only the level of each component but also the age- and sex-specific

patterns that make up those levels are important.

### Demographic Transition Theory and the Age-Sex Composition of Populations

Demographers who study historical trends in age-sex composition have identified a general progression of changes in fertility, mortality, and population composition through which populations have typically passed in the modern era. These ideas are articulated in the study *Demographic Transition Theory* (Davis, 1945). Although this theory has been criticized as being too general to encompass the variety of national experiences, it still is a useful tool from which to begin to explain the very broad changes that have occurred and that are expected to occur in the age-sex composition of populations around the globe.

Demographic Transition Theory begins with the observation that, at one time, most currently developed societies had very high levels of both fertility and mortality and a corresponding low rate of growth (stage 1). As a result, populations were quite young and stayed relatively small. A pyramid of such a population would have a narrow triangular shape with very few people at the older ages.

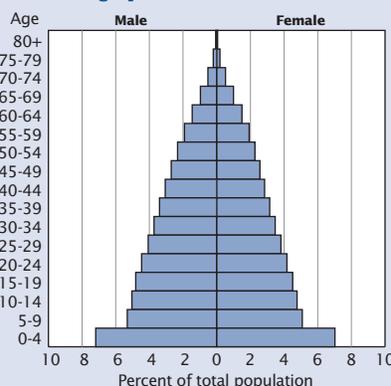
According to the theory, the second stage of the demographic transition consists of a substantial drop in levels of mortality, especially among the very young. Since fertility levels stay high, the result is a rapid increase in population, especially at

the younger ages. A pyramid of a population at this stage would be triangular in shape with a wide base due to large cohorts of people at the youngest ages and progressively smaller cohorts at each successive age group.

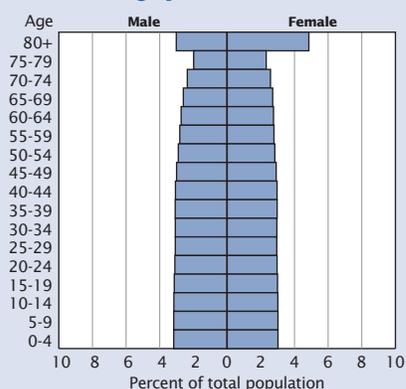
The next change that begins to affect populations is a decline in the level of fertility (stage 3), which causes a slowing of the rate at

which the population grows and a more even distribution of the population across age groups. A pyramid of a population at the end of this stage would be more rectangular in shape. At this time, however, the population in the older age groups would be increasingly dominant.

Population at Stage 1 of the Demographic Transition



Population at the End of Stage 3 of the Demographic Transition



Demographic Transition Theory does not offer a complete explanation of what determines the age-sex composition of populations. The most glaring omission is the effect of migration on population structure. In addition, it is not sensitive to potentially important local conditions that can affect the age- and sex-specific mortality or fertility levels of a population. Nevertheless, Demographic Transition Theory provides a useful basis from which to begin describing the age-sex composition of populations across the globe.

## A Population's Demographic History Leaves Marks on Its Age-Sex Composition

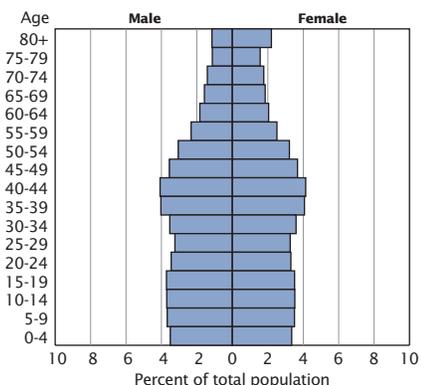
In the following sections, examples are given of the ways that the three components of change can influence the age-sex composition of a population. When considering these examples, it may be helpful to compare the hypothetical composition to a population that is distributed equally across all age-sex groups, whose pyramid would be perfectly rectangular. Alternatively, one may compare the composition to one of the classical structures as put forth in Demographic Transition Theory. (See textbox on preceding page.)

### Fertility and Age-Sex Composition

An interesting biological fact is that, on average, between 103 and 107 boys are born for every 100 girls. Although populations may deviate slightly from these proportions, long-run trends show that they tend to maintain these averages. As a result, males outnumber females at the bottom of most population pyramids.

In terms of the age-structure of populations, a decrease in the overall level of fertility will reduce the size of the younger cohorts of a population relative to the size of the older cohorts (all else constant). Changes in age-specific fertility rates can also have interesting effects. Baby booms, or uncharacteristically large age cohorts within a population, are created when large proportions of the women in a population have

**Bulge in a population pyramid due to a baby boom (United States, 2000)**



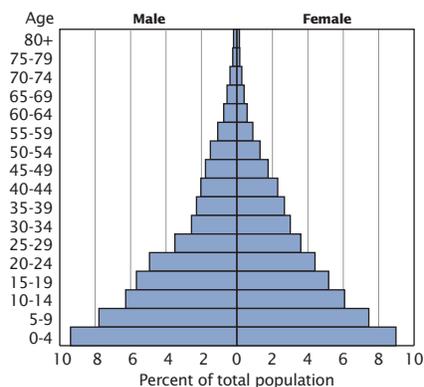
children in the same years, typically due to some critical event (e.g., the end of a war). The shape of the population pyramid of the United States in 2000 (above), especially at ages 35-54, reflects, in part, the effects of the post-World War II baby boom.

### Mortality and Age-Sex Composition

Another interesting phenomenon is that males tend to die at higher rates at all ages than do females. For this reason, the advantage in numbers that males typically have at birth tends to erode and eventually be lost at higher ages.

Most changes in mortality experienced by a population typically affect people in certain age-sex groups more than others. For example, a reduction in deaths from infectious and parasitic diseases typically affects younger people the most. Conversely, a reduction in deaths from chronic and degenerative diseases tends to affect older people more than the young.

**An unusual absence of adult males in a population (Sudan, 1990)**

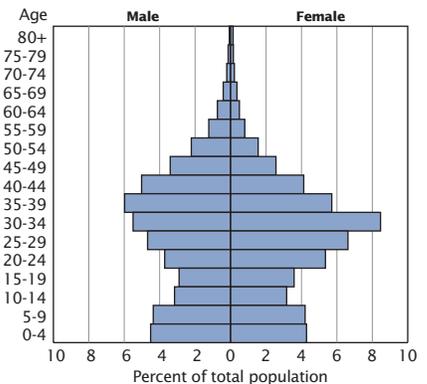


In more extreme cases, the effects of mortality are less regular. For example, the mortality from war tends to have its strongest effect on the young male population. The pyramid of Sudan in 1990 (above) may have been caused by such mortality. Likewise, the AIDS pandemic is already having marked effects on some young-adult populations (see the section on AIDS later in this volume).

## Migration and Age-Sex Composition

As with population growth, the effect that migration will have on the eventual age-sex composition of a population is difficult to predict. Nevertheless, several patterns of age- and sex-specific migration have been observed.

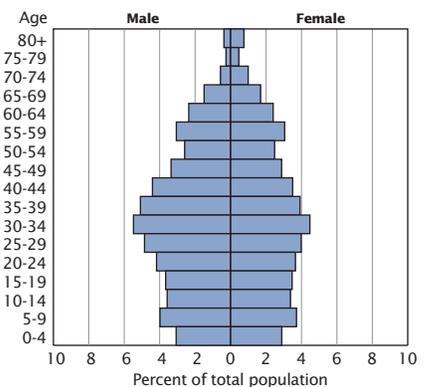
**Pyramid of a labor migration-receiving territory (Northern Mariana Islands, 2000)**



First, quite often people who migrate are looking for employment. In this case, the great majority of movers will be young adults. The pyramid of the Northern Mariana Islands (above) shows the effect that a massive influx of labor migrants can have.

The effect of massive refugee movements on the age-sex composition of a population is somewhat less predictable. Refugees can be of all ages and of both sexes. The pyramid of the population of Bosnia and Herzegovina during the conflict in 1995 (below) strongly indicates the outflow of women and children from the country.

**Pyramid reflecting serious effects of migration (Bosnia and Herzegovina, 1995)**



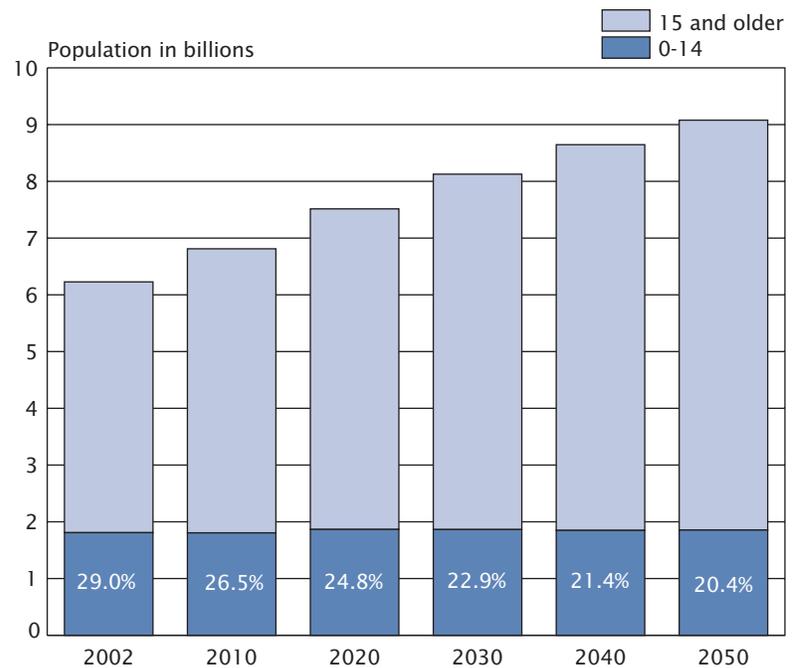
## CHILDREN AROUND THE GLOBE

### Three Out of Every Ten People on the Earth in 2002 Were Under the Age of 15

In 2002, the globe held approximately 1.8 billion people under the age of 15 (Figure 20). This was just under 30 percent of the total population.

Over the next 50 years, the total number of children on the globe is not projected to increase substantially. As a result, their percentage of the total global population is expected to fall to approximately 25 percent by 2020 and to 20 percent by 2050 (Figure 20). This trend is primarily due to the substantial decline in fertility rates across the globe and the attendant aging of the population.

Figure 20.  
**Global Population 0-14 Years of Age Compared to Total Global Population: 2002-2050**  
**The percent of children across the globe is projected to decline by one-third over the next five decades.**



Source: U.S. Census Bureau, International Programs Center, International Data Base.

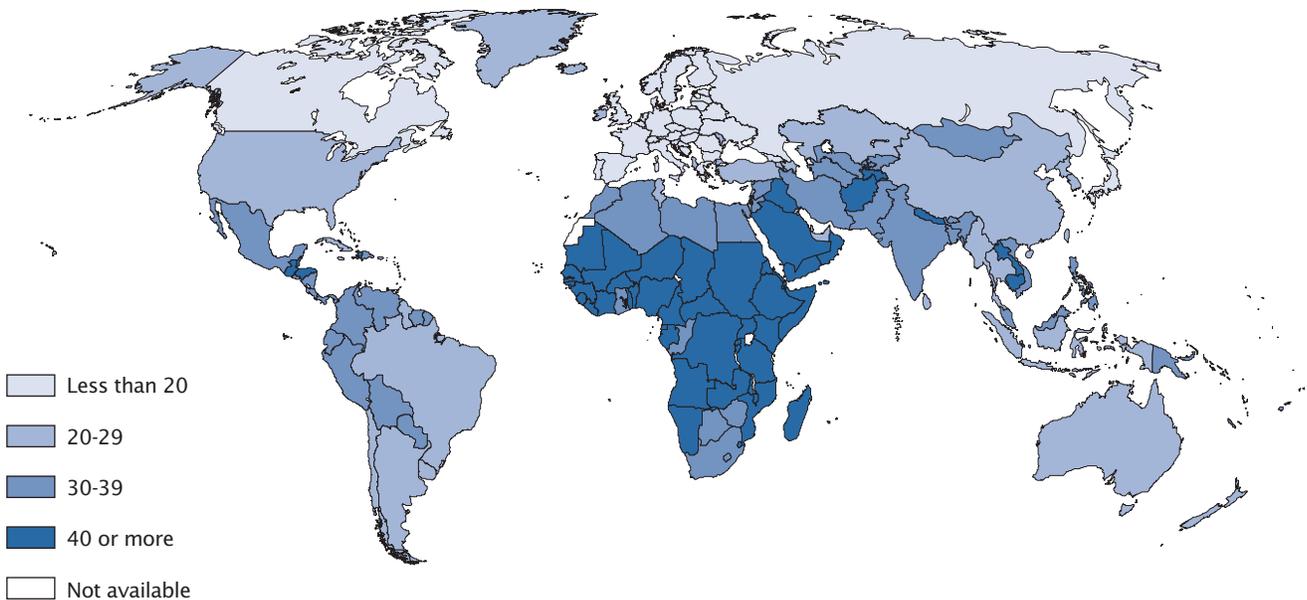
**The Population Ages 0-14 Is Expected to Grow Slowly and Even to Decline in Many Parts of the Globe Over the Next Quarter Century**

In 2002, children (ages 0-14) as a percentage of the total population

ranged from a high of 51 percent in Uganda to a low of 14 percent in Italy. As Figure 21 shows, the region where the percentage of children was most consistently high was Sub-Saharan Africa, whereas the percentage of children was generally low in the more developed countries.

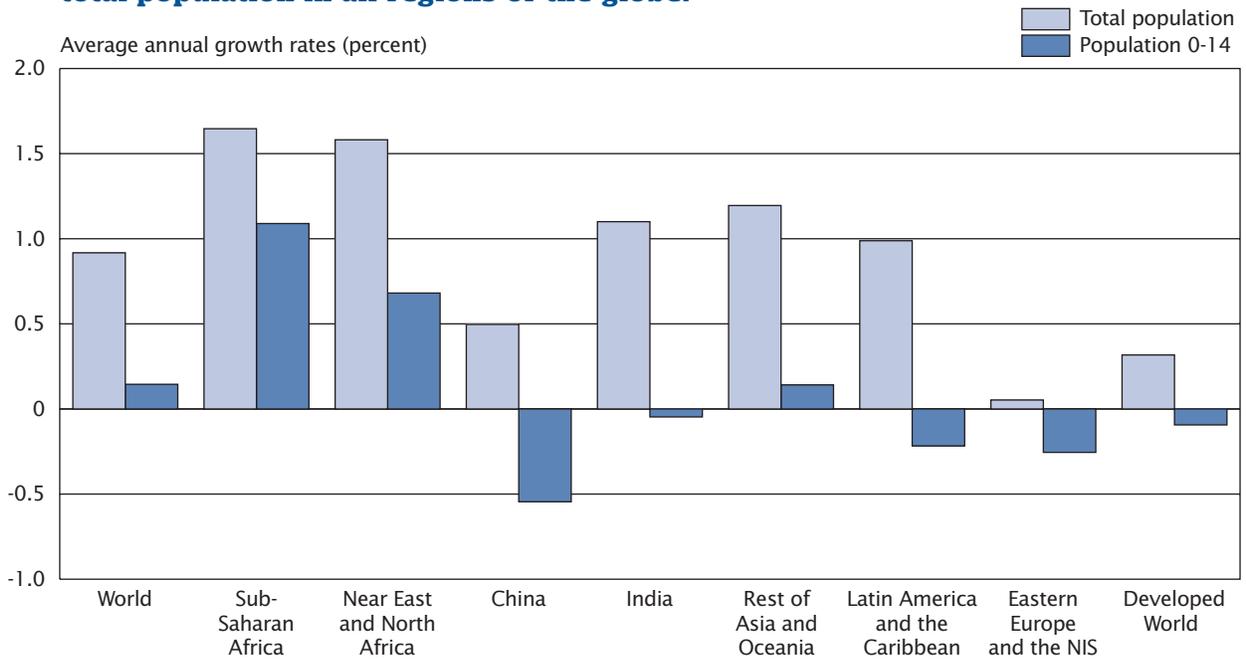
Between 2002 and 2025, the population ages 0-14 is projected to grow much more slowly or decline compared to the total population (Figure 22). As a result, children as a percentage of the total population are expected to decline consistently across the globe (Figure 23).

Figure 21.  
**Children (Ages 0-14) as a Percent of the Total Population by Country: 2002**  
**In 2002, children were most prominent in Sub-Saharan Africa and parts of the Near East, and least prominent in Europe.**



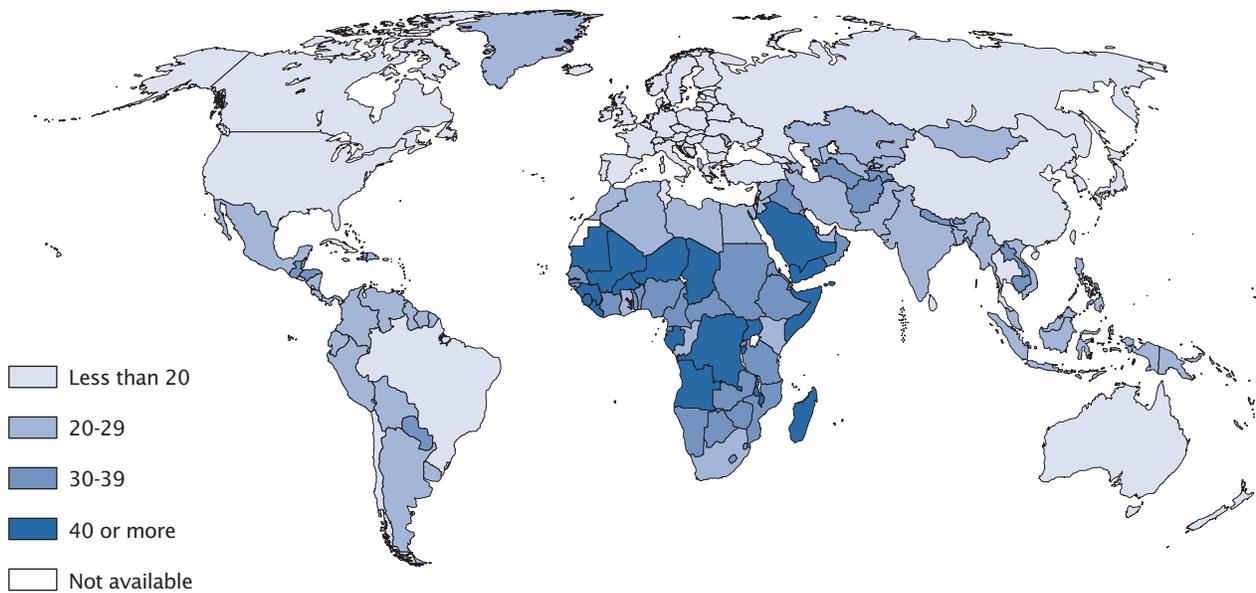
Source: U.S. Census Bureau, International Data Base and unpublished tables.

Figure 22.  
**Change in the Population Ages 0-14 and the Total Population by Region: 2002-2025**  
**The child population is expected to grow more slowly than the total population in all regions of the globe.**



Source: U.S. Census Bureau, International Programs Center, International Data Base and unpublished tables.

Figure 23.  
**Children (Ages 0-14) as a Percent of the Total Population by Country: 2025**  
**Despite general global decline, children are expected to continue as a large part of many African and Near Eastern countries through 2025.**



Source: U.S. Census Bureau, International Programs Center, International Data Base and unpublished tables.

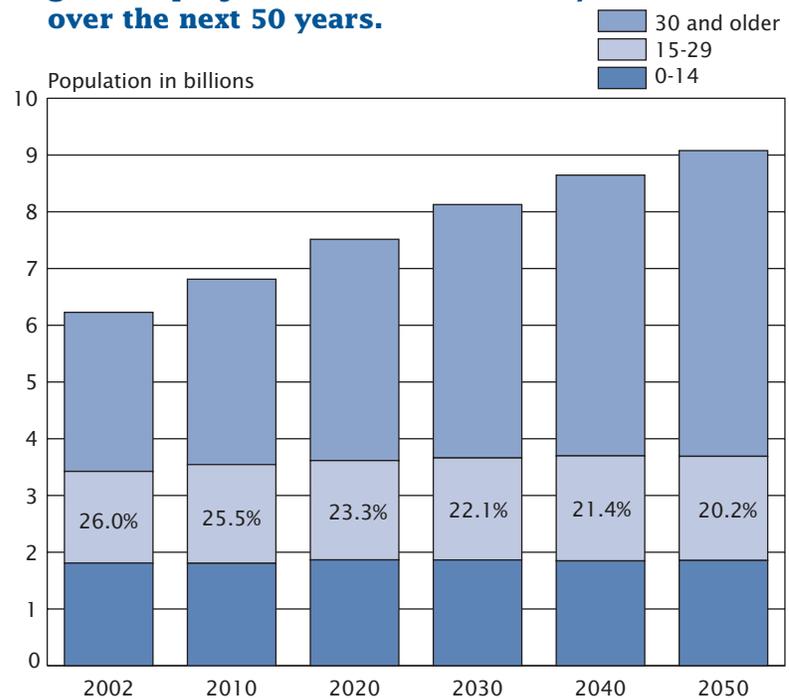
## YOUTH AROUND THE GLOBE

### One Out of Every Four People on the Earth in 2002 Was Between the Ages of 15 and 29

In 2002, the globe held approximately 1.6 billion people between the ages of 15 and 29 (Figure 24). This was approximately 26 percent of the total population.

Over the coming five decades, the total number of youth on the globe is projected to increase slightly (Figure 24). Still, their percentage of the total global population is expected to fall to approximately 23 percent by 2020 and to 20 percent by 2050. As with the trends in the child population, this is primarily due to past declines in fertility across the globe and the attendant aging of the population.

Figure 24.  
**Global Population 15-29 Years of Age Compared to Total Global Population: 2002-2050**  
**The percent of youth across the globe is projected to decline steadily over the next 50 years.**



Source: U.S. Census Bureau, International Programs Center, International Data Base.

**Over the Next Two Decades, the Population Ages 15-29 Is Expected to Grow in Some Parts of the World and to Decline in Others**

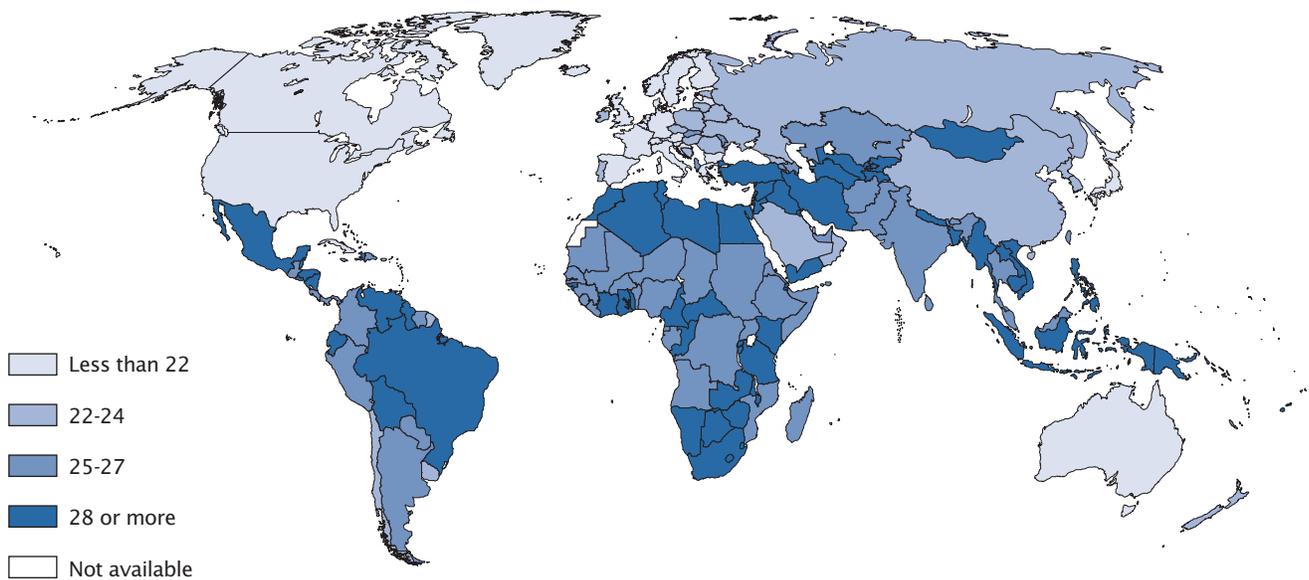
In 2002, youth as a percentage of the total population ranged from a high of 35 percent in Grenada to a low of 14 percent in Monaco. As Figure 25 shows, the percentage of

youth was predominantly higher in Africa and much of Asia, but generally low in the countries of the Developed World and in Eastern Europe and the new independent states of the former Soviet Union.

Over the 2002-2025 period, the change in the population ages 15-29 is expected to vary by region,

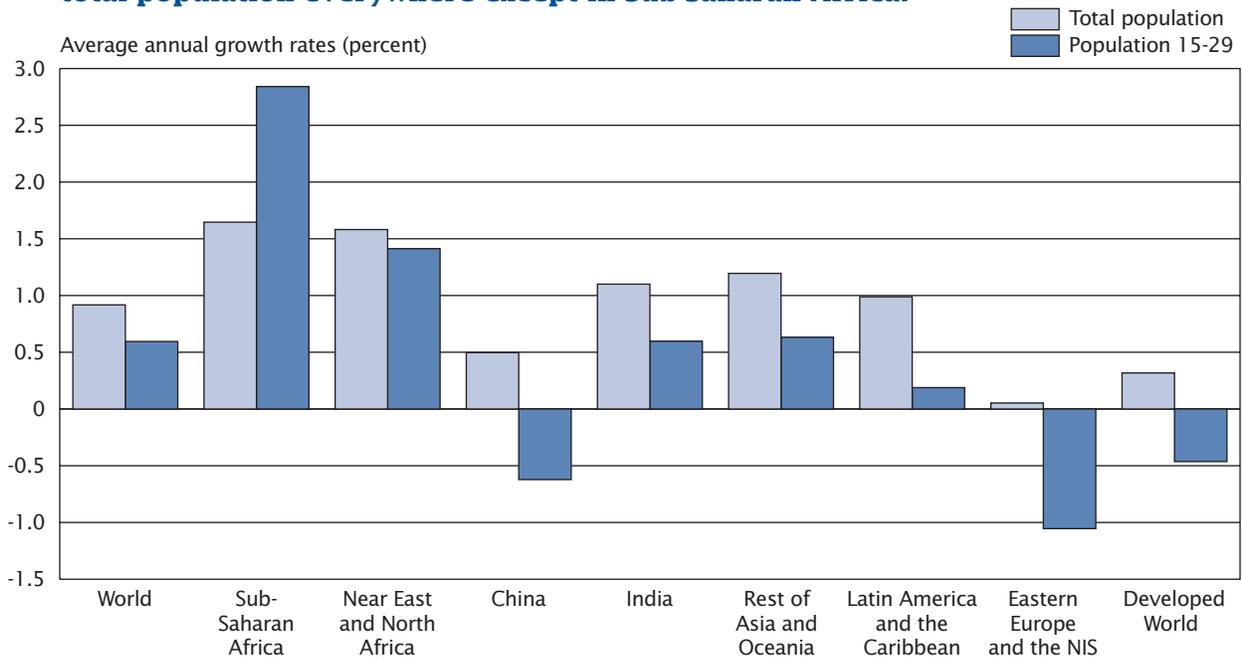
growing faster than the total population in Sub-Saharan Africa while declining in China, Eastern Europe, and the Developed World (Figure 26). As a result, youth as a percentage of the total population are likely to decline everywhere across the globe except in Sub-Saharan Africa (Figures 25 and 27).

Figure 25.  
**Youth (Ages 15-29) as a Percent of the Total Population by Country: 2002**  
**In 2002, the relative size of the youth population was largest in parts of Latin America, Africa, Asia, and the Near East and smaller in the more developed countries.**



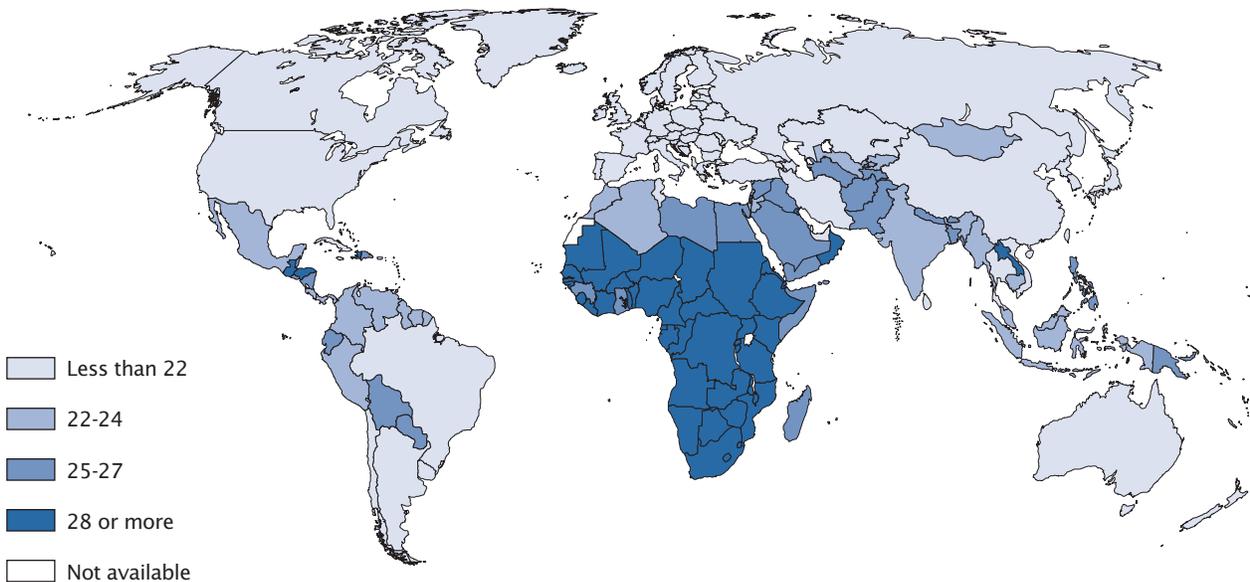
Source: U.S. Census Bureau, International Programs Center, International Data Base and unpublished tables.

Figure 26.  
**Change in the Population Ages 15-29 and the Total Population by Region: 2002-2025**  
**The population ages 15-29 is expected to grow more slowly than the total population everywhere except in Sub-Saharan Africa.**



Source: U.S. Census Bureau, International Programs Center, International Data Base and unpublished tables.

Figure 27.  
**Youth (Ages 15-29) as a Percent of the Total Population by Country: 2025**  
**In 2025, youth as a percent of the total population is expected to be high in Sub-Saharan Africa but to have declined in many other parts of the world.**



Source: U.S. Census Bureau, International Programs Center, International Data Base and unpublished tables.

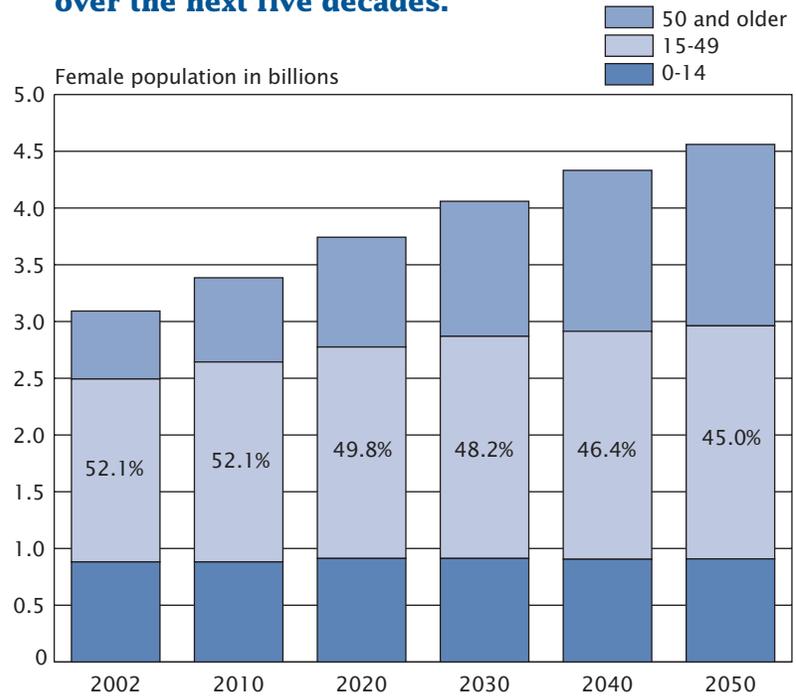
## WOMEN OF CHILDBEARING AGE AROUND THE GLOBE

### One Out of Every Four People on the Earth in 2002 Was a Woman of Childbearing Age

In 2002, the globe held approximately 1.6 billion women between the ages of 15 and 49 (Figure 28). This was approximately 52 percent of the total female population.

Between 2002 and 2050, the number of women in their childbearing years is projected to increase gradually by over 0.4 billion. Still, women in their childbearing years as a percentage of the total female population are expected to decline gradually to approximately 50 percent in 2020 and to 45 percent by 2050 (Figure 28), due primarily to historical declines in fertility and the subsequent aging of the population.

Figure 28.  
**Global Women of Childbearing Age Compared to Total Female Population: 2002-2050**  
**The percent of women in their childbearing years is projected to decline gradually over the next five decades.**



Source: U.S. Census Bureau, International Programs Center, International Data Base.

**Over the Next Two Decades, the Female Population Ages 15-49 Is Expected to Grow Rapidly in Some Parts of the World and to Decline in Others**

In 2002, women in their childbearing years as a percentage of the total population ranged from a high of 36 percent in the Northern Mariana Islands to a low of

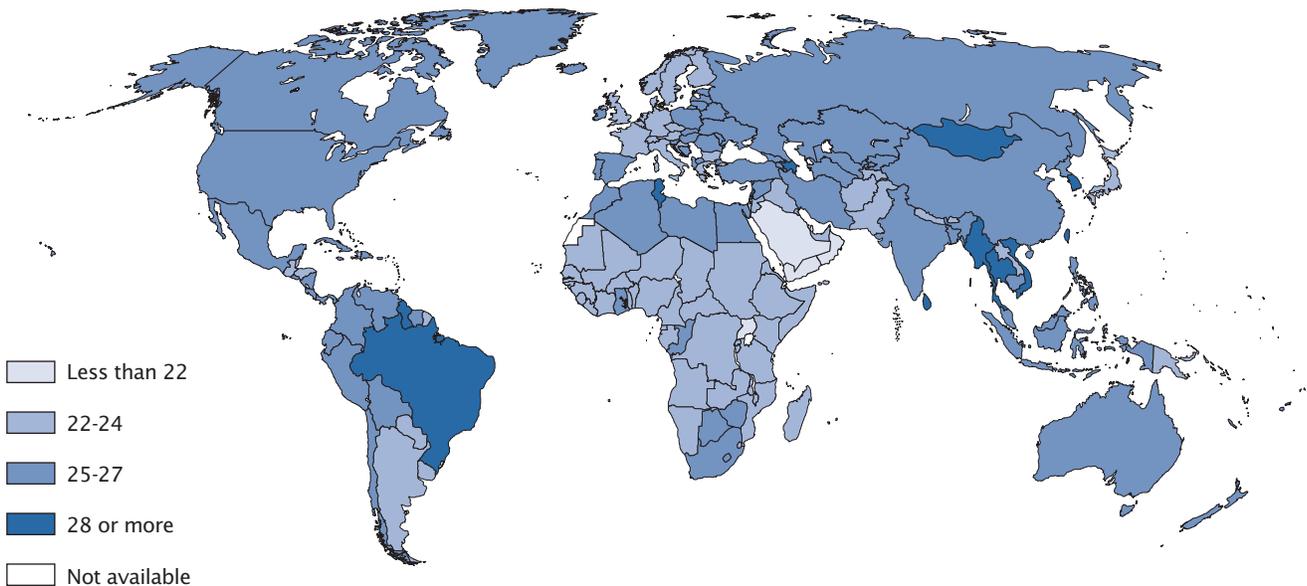
18 percent in Qatar. As Figure 29 shows, women in their childbearing years generally comprised large proportions of the populations of countries in North Africa, Latin America, Eastern Europe and the NIS, and parts of Asia, and low proportions in Sub-Saharan Africa and the Near East.

Over the next two decades, the change in female population ages

15-49 is expected to vary by region, growing substantially faster than the total population in Sub-Saharan Africa while declining in China, Eastern Europe and the NIS, and the Developed World (Figure 30). However, the resulting levels within individual countries are difficult to predict based on these regional trends (Figure 31).

Figure 29.

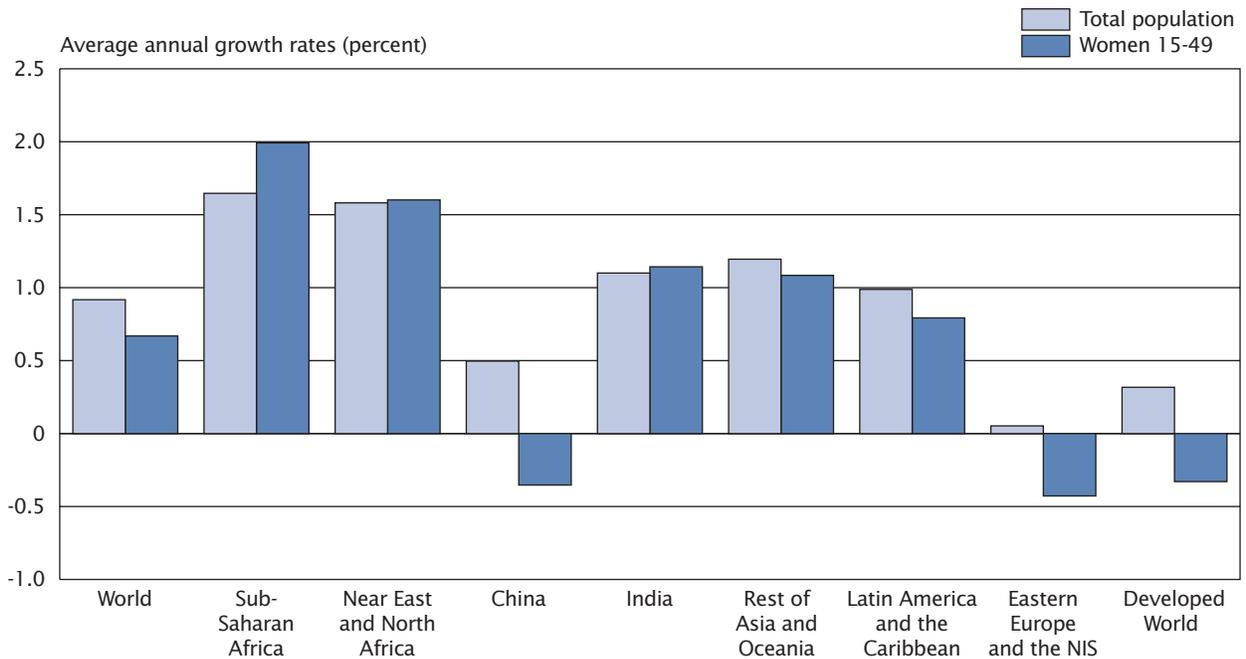
**Women of Childbearing Age (Ages 15-49) as a Percent of the Total Population by Country: 2002**  
**In 2002, the relative size of the population composed of women of childbearing age was low in most of Sub-Saharan Africa but moderate to high in other world regions.**



Source: U.S. Census Bureau, International Programs Center, International Data Base and unpublished tables.

Figure 30.

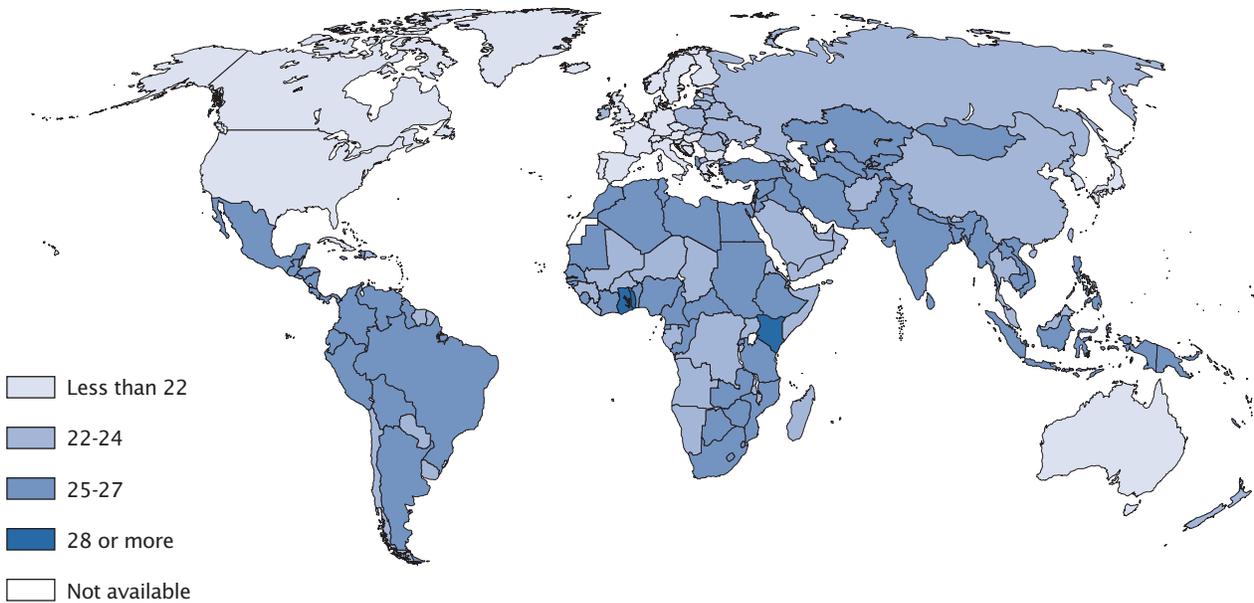
**Change in Female Population Ages 15-49 and Total Population by Region: 2002-2025**  
**Women of childbearing age are expected to grow more rapidly than the total population in Sub-Saharan Africa, the Near East and North Africa, and India.**



Source: U.S. Census Bureau, International Programs Center, International Data Base and unpublished tables.

Figure 31.

**Women of Childbearing Age (Ages 15-49) as a Percent of the Total Population by Country: 2025**  
**Over the coming quarter century, the percent of women of childbearing age is projected to decline in most countries.**



Source: U.S. Census Bureau, International Programs Center, International Data Base and unpublished tables.

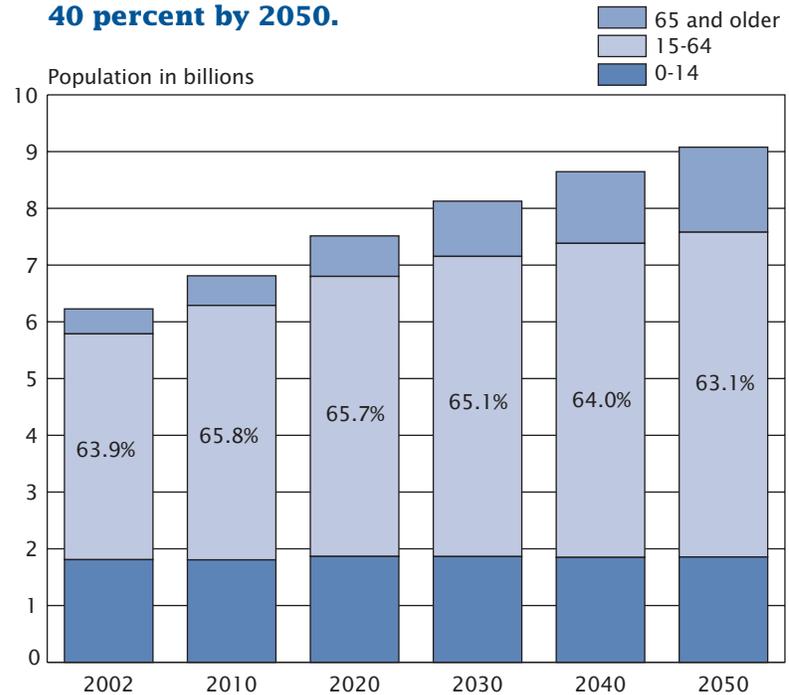
## THE WORKING-AGE POPULATION AROUND THE GLOBE

### Roughly 2 Out of Every 3 People on the Earth in 2002 Were Between the Ages of 15 and 64

In 2002, the globe held 4.0 billion people between the ages of 15 and 64 (Figure 32). This was approximately 64 percent of the total population.

Over the next five decades, the total number of people ages 15-64 on the globe is projected to increase to 5.7 billion (Figure 32). However, the percentage of total global population composed of people of labor force age is expected to rise only slightly to nearly 66 percent in 2010 and then to decline slightly to about 63 percent in 2050. As with the patterns of growth discussed earlier, this is due primarily to historical declines in fertility and the subsequent aging of the population.

Figure 32.  
**Population Ages 15-64 Compared to Total Global Population: 2002-2050**  
**The working-age population at the global level is expected to increase by over 40 percent by 2050.**



Source: U.S. Census Bureau, International Programs Center, International Data Base.

**Over the Next Two Decades, the Population Ages 15-64 Is Expected to Grow Significantly in Most of the Less Developed World**

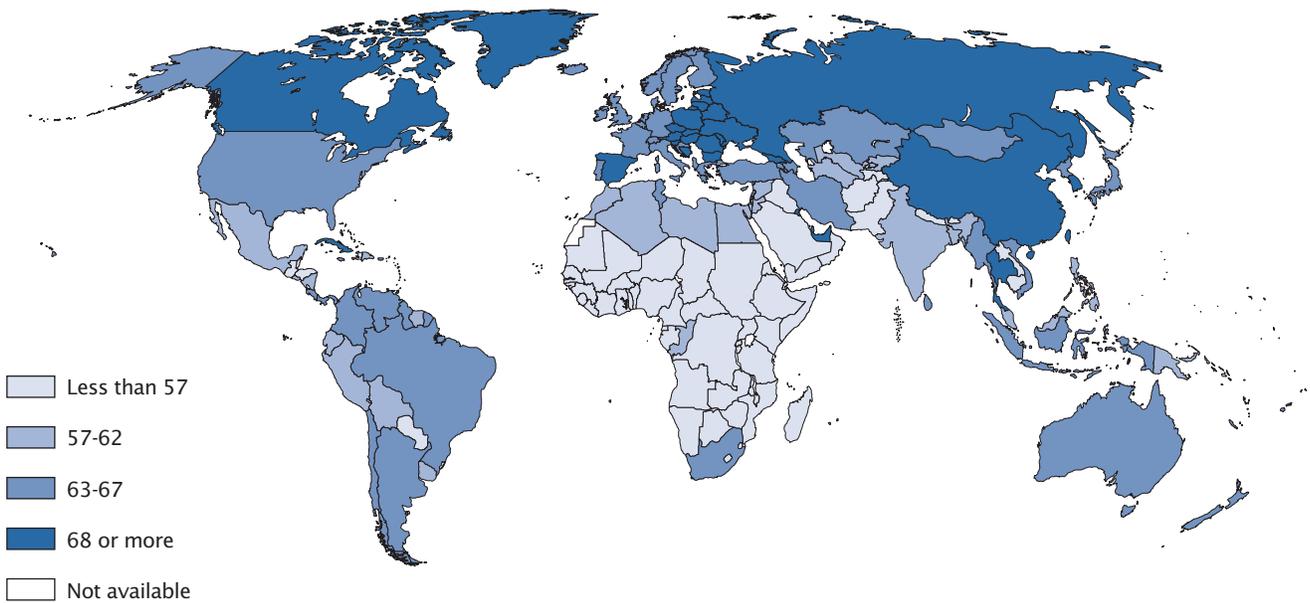
In 2002, the working-age population as a percentage of the total population ranged from a high of 75 percent in Singapore to a low of 47 percent in Uganda. As Figure 33 shows, the places where

the proportions in the age range 15-64 were most consistently high were in the Developed World, Eastern Europe and the New Independent States, and parts of Asia, whereas the percentage in the labor force ages was generally low in Sub-Saharan Africa.

Between 2002 and 2025, the population of labor force age is

projected to grow more rapidly than the population as a whole in all regions except the developed world, Eastern Europe and the NIS, and China (Figure 34). As a result, the population ages 15-64 as a percentage of the total population is expected to increase slightly in all regions except these three.

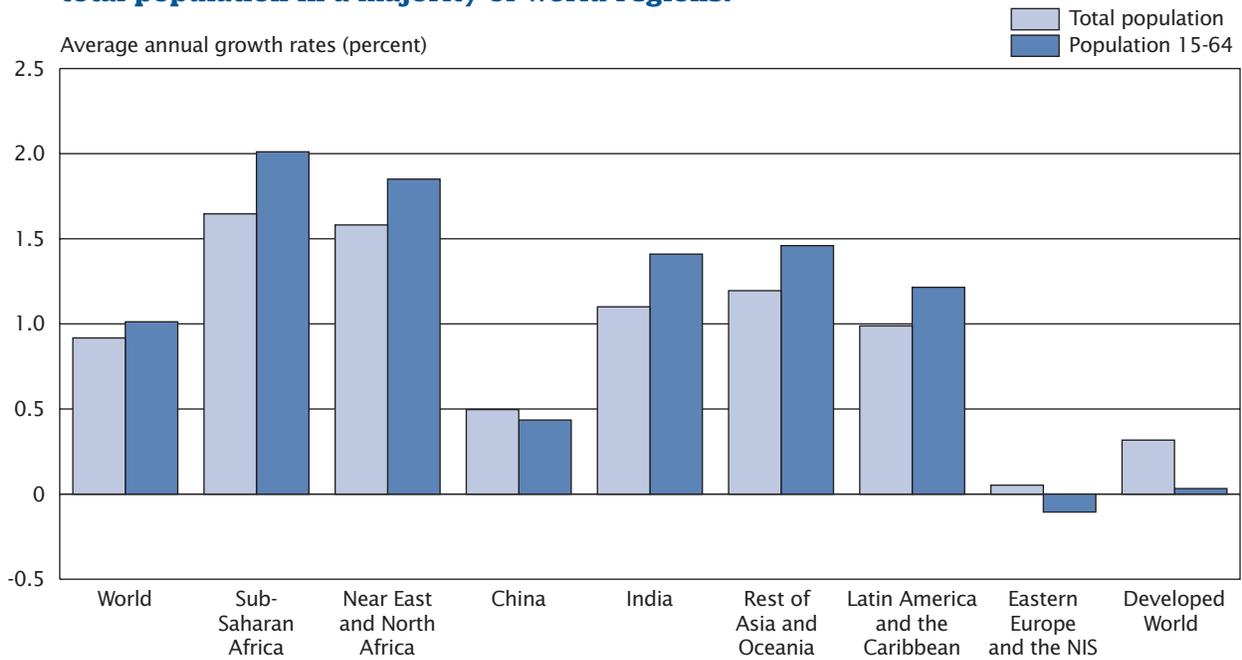
Figure 33.  
**Working-Age Population (Ages 15-64) as a Percent of the Total Population by Country: 2002**  
**In 2002, the percent of the population ages 15-64 was higher in China and lower in Sub-Saharan Africa than other world regions.**



Source: U.S. Census Bureau, International Programs Center, International Data Base and unpublished tables.

Figure 34.

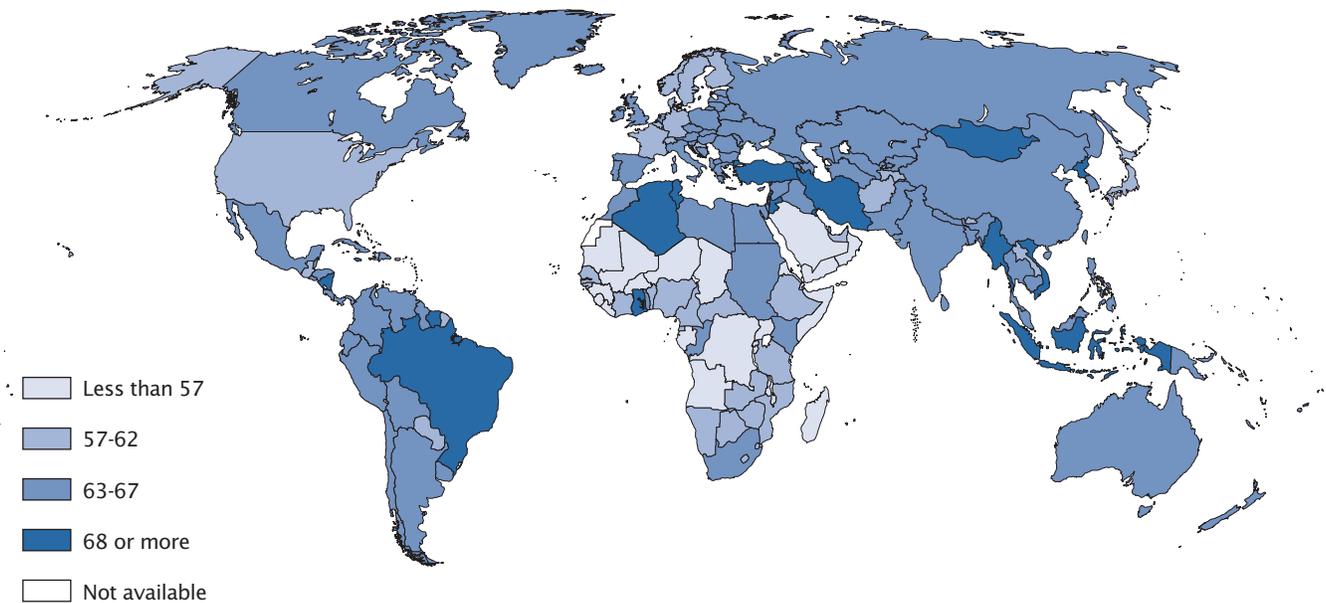
**Change in the Working-Age Population and Total Population by Region: 2002-2025**  
**The working-age population is expected to increase faster than the total population in a majority of world regions.**



Source: U.S. Census Bureau, International Programs Center, International Data Base and unpublished tables.

Figure 35.

**Working-Age Population (Ages 15-64) as a Percent of the Total Population by Country: 2025**  
**Countries with relatively large projected labor force age populations are scattered across the globe.**



Source: U.S. Census Bureau, International Programs Center, International Data Base and unpublished tables.

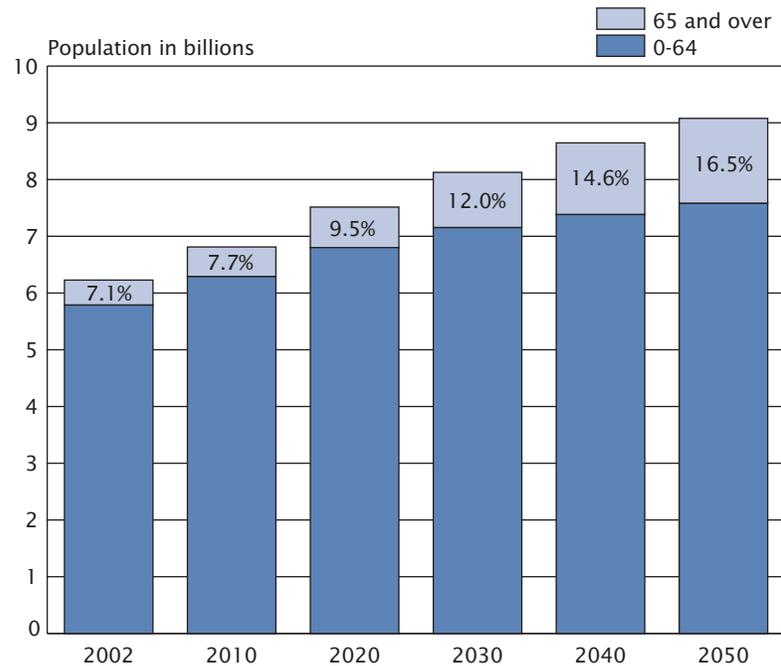
## THE ELDERLY AROUND THE GLOBE

### One Out of 14 People on the Earth in 2002 Was Age 65 or Over

In 2002, the globe held 440 million people age 65 or over (Figure 36). This was approximately 7 percent of the total population.

In the future, the size of the elderly population is projected to increase rapidly, almost doubling by 2020 and more than tripling by 2050. Similarly, the relative size of the elderly population is expected to grow to over 9 percent in 2020 and to almost 17 percent by 2050. Again, as with the patterns of growth discussed earlier, this is due primarily to historical declines in fertility and the general aging of the population.

Figure 36.  
**Global Elderly Population Compared to Total Population: 2002-2050**  
**The number of elderly is expected to grow very rapidly during the coming five decades.**



Source: U.S. Census Bureau, International Programs Center, International Data Base.

**The Population Ages 65 and Over Is Expected to Grow Very Rapidly in All Parts of the World**

In 2002, the elderly as a percentage of the total population ranged from a high of 22 percent in Monaco to a low of 1.7 percent in Mayotte. As Figure 37 shows, this percentage was typically higher in

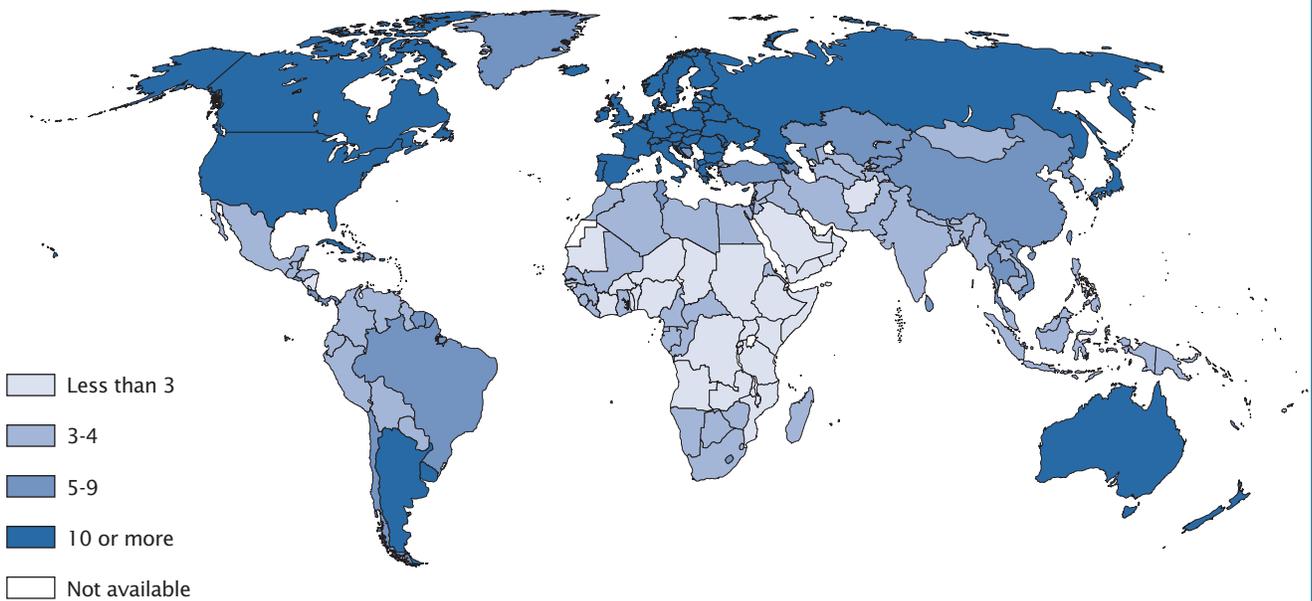
Eastern Europe and the New Independent States of the former Soviet Union, North America, Western Europe and the other countries making up the Developed World, whereas the percentage was generally very low in Africa and the Near East.

Over the next quarter century, the elderly population is projected to

grow much more quickly than the total population in all parts of the world (Figure 38). As a result, the elderly as a percentage of the total population are expected to increase over much of the globe, but especially in Eastern Europe and the Developed World (Figure 39).

Figure 37.

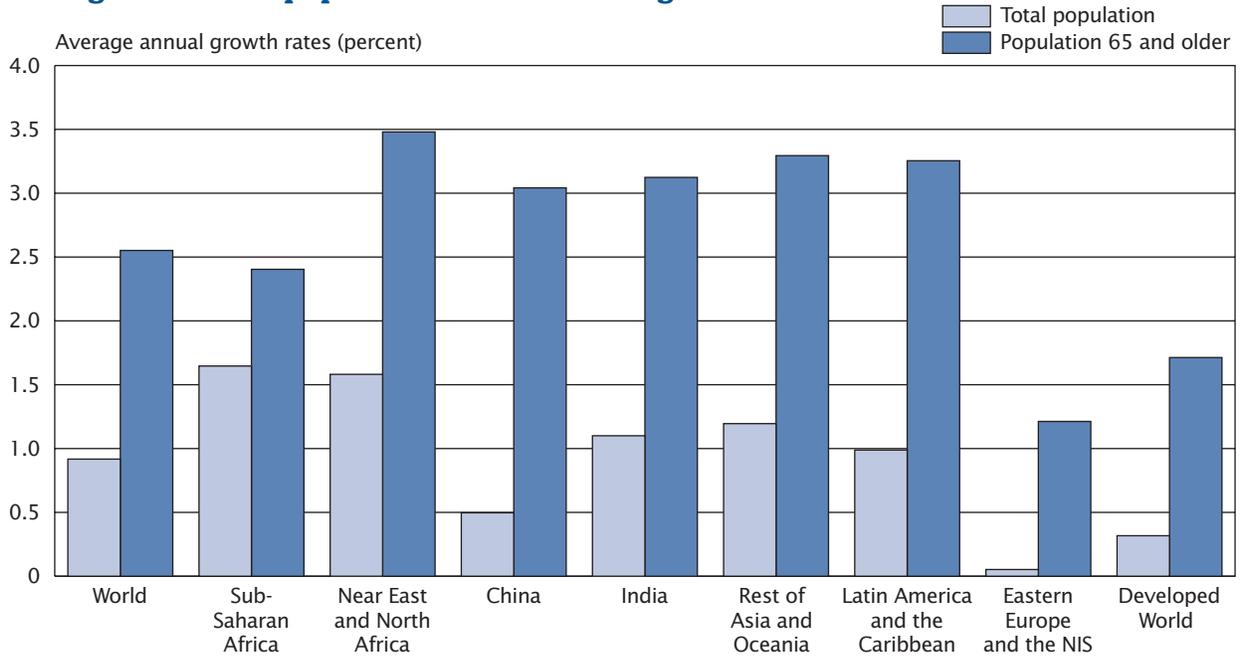
**Elderly Population (Ages 65+) as a Percent of the Total Population by Country: 2002**  
**In 2002, the relative size of the elderly population was largest in the Developed World and Eastern Europe and smallest in Sub-Saharan Africa.**



Source: U.S. Census Bureau, International Programs Center, International Data Base and unpublished tables.

Figure 38.

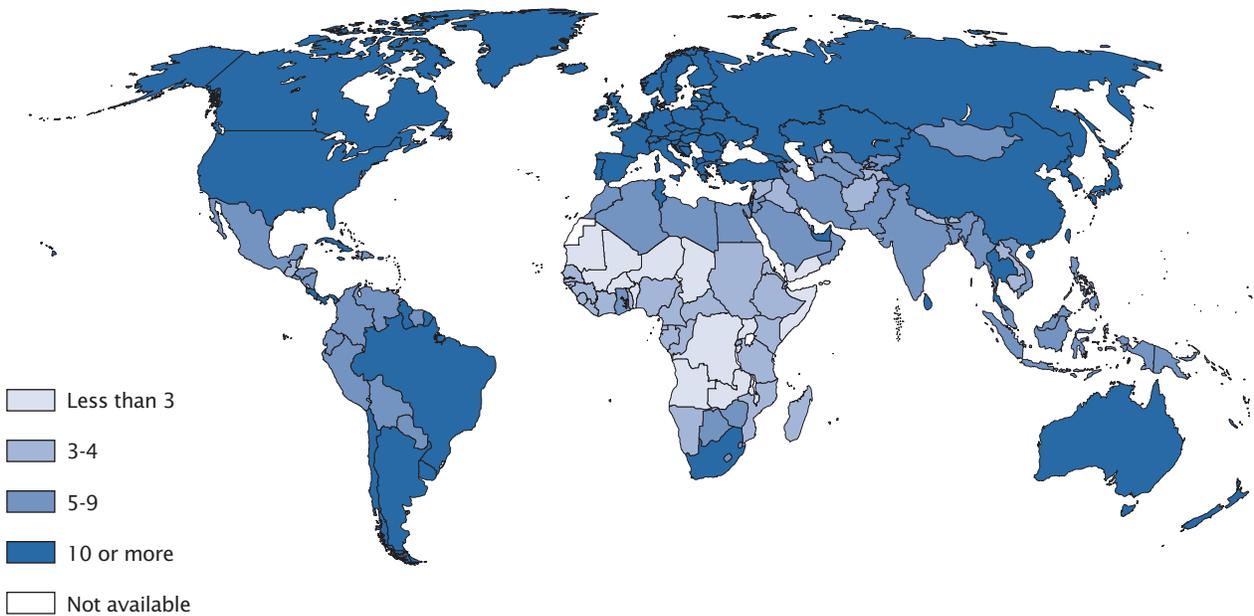
**Change in the Elderly Population and Total Population by Region: 2002-2025**  
**The growth of the elderly population is projected to be faster than any other segment of the population in all world regions.**



Source: U.S. Census Bureau, International Programs Center, International Data Base and unpublished tables.

Figure 39.

**Elderly Population (Ages 65+) as a Percent of the Total Population by Country: 2025**  
**By 2025, high proportions of elderly are expected to be found throughout much of the less developed world.**



Source: U.S. Census Bureau, International Programs Center, International Data Base and unpublished tables.

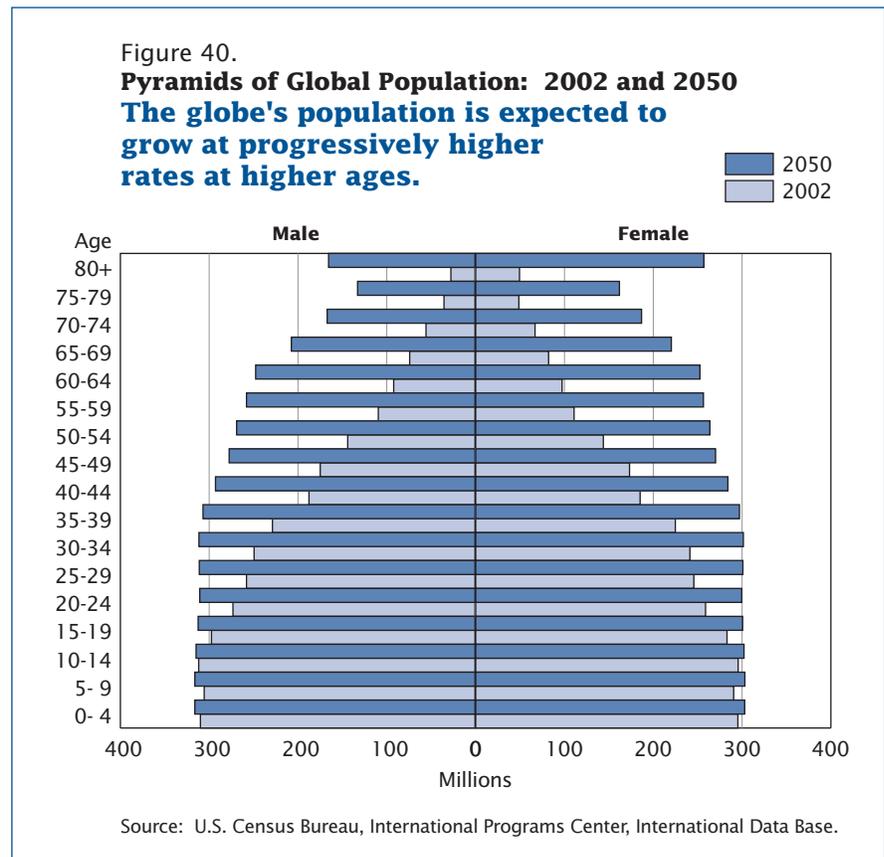
## THE FUTURE COMPOSITION OF POPULATION

### The Aging of the Population of the Globe Is a Nearly Universal Phenomenon

A comparison of the age-sex composition of the globe's population in 2002 and 2050 is depicted in Figure 40. This pyramid illustrates the following characteristics:

- In contrast to 2002, women are likely to outnumber men in 2050. The differential is expected to be approximately 1 percent.
- Increasing female dominance in the total population is associated primarily with growth in the elderly population between 2002 and 2050.
- In 2050, the population ages 80 and over is projected to make up a considerable proportion of the global total.

As the pyramids in Figure 41 illustrate, these global patterns are expected to be exaggerated in some regions of the world, while Sub-Saharan Africa's age-sex structure is likely to resemble the composition of the globe in 2002. For example, women are expected to outnumber men in 2050 by as much as 9 percent in Eastern Europe and the NIS, but men are expected to still outnumber women in India and the Near East and North Africa.



As for the age structure of the population, Census Bureau projections indicate the 0-4 age group will still be the largest cohort in Sub-Saharan Africa and the Near East and North Africa, whereas people ages 80 and above is likely to become the largest age group in the Developed World and China.

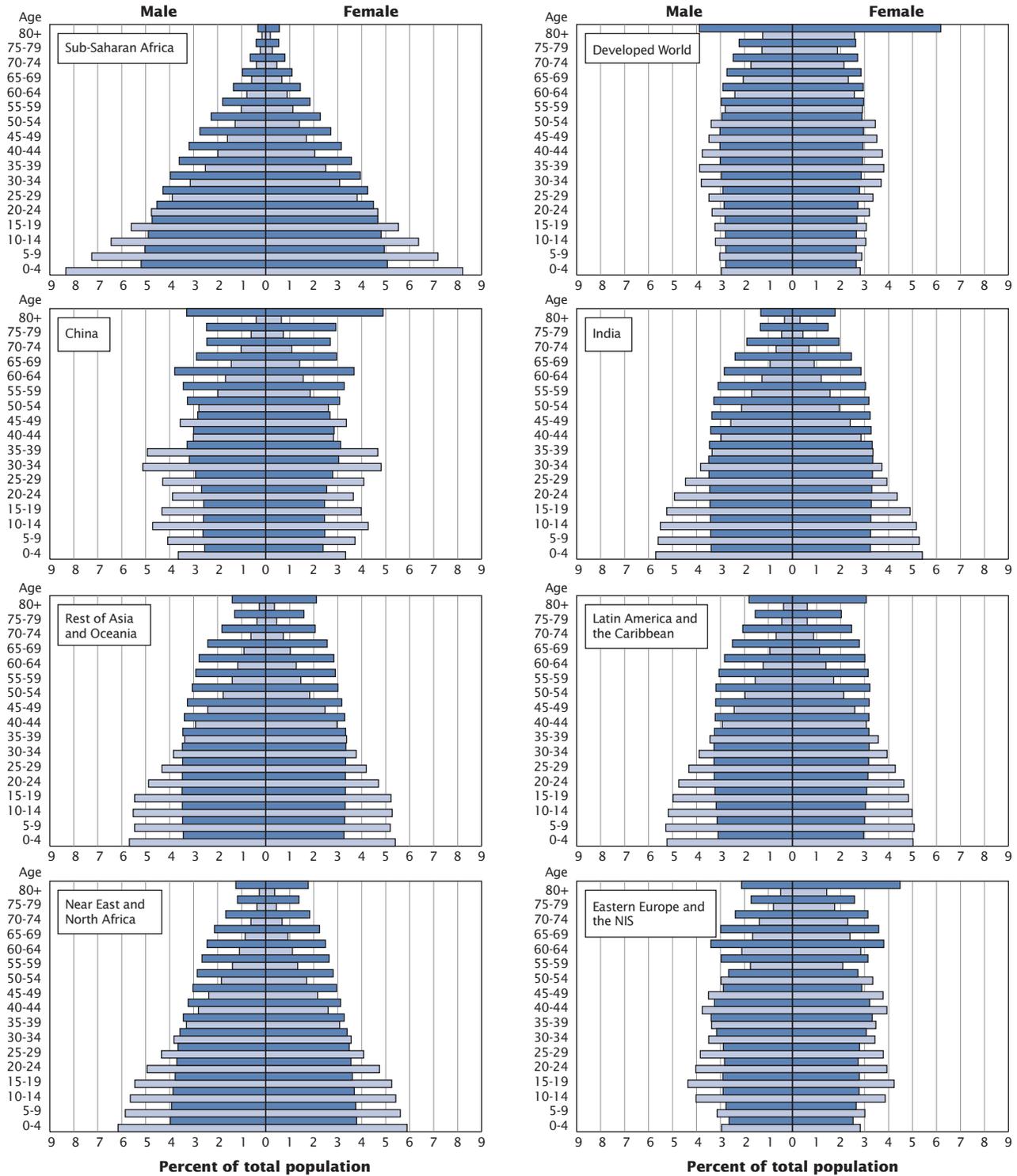
Finally, the regularity of the decrease in the size of successive

cohorts of older people that was the norm in the less developed world in 2002 is expected to give way in 2050 to more irregular patterns in the sizes of successive cohorts and to increased size of the older age groups.

Figure 41.

**Population Pyramids for Regions and Selected Countries: 2002 and 2050**  
**In 2050, the elderly are expected to be a substantially larger part of national and regional populations.**

2050  
 2002



Source: U.S. Census Bureau, International Programs Center, International Data Base.

