



RESOURCES FOR AWARENESS OF POPULATION IMPACTS ON DEVELOPMENT (RAPID) THE CASE OF AMHARA REGION

Brief

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Photo by Kelley Lynch for USAID

Introduction

Population growth will affect the Amhara region's social and economic goals and strategies during the next three decades, but the rate of this demographic change will be influenced by current and future fertility trends. A high rate of population growth will impede socioeconomic development, while slower growth will make more resources available to achieve regional goals. To show the impact of population growth on the Amhara region's development goals, the USAID-funded Health Policy Project (HPP) analyzed two scenarios of fertility decline (fast and slow).

The results of this analysis show that the population pathways shaped today will affect Amhara's education, health, urbanization, and economy for decades to come. Comprehensive policies and programs that increase access to family planning can help women and couples achieve their reproductive desires while also facilitating broader socioeconomic development.

Population Projections

The results of the 2007 Population and Housing Census (CSA, 2010) showed that the total population of Amhara region was 17.2 million. The size of the population increased by about 25 percent from 1994 to 2007, representing an annual growth rate of 1.7 percent. The total fertility rate (TFR) of the region declined from 5.1 children per woman in 2005 to 4.2 in 2011 (CSA and ICF International, 2012). According to the Central Statistical Agency's medium variant projection, the population of the region will reach about 27.6 million by 2037 if fertility remains constant. Given the built-in momentum, the population of the Amhara region will continue to grow for several decades. However, a lower fertility rate during the next decade will have a powerful influence on the ultimate size of the population.



The analysis examined how alternative fertility trends can affect population size using the Resources for Awareness of Population Impact on Development (RAPID) model. RAPID is used to depict the relationship between population and development variables, and the Amhara application, the first at the regional level in Ethiopia, was based on locally available estimations of demographic and socioeconomic data. Over a 30-year projection period (2007–2037), the analysis used two population scenarios to contrast the impact of different fertility rates on various sectors. Other demographic assumptions, such as mortality rates, were the same for both scenarios. The projections were made according to the Central Statistical Agency 2012 Intercensal Population Survey’s low and high variants. Socioeconomic data used assumptions set according to the standards of Ethiopia’s Ministry of Education, Ministry of Health, and the World Health Organization.

The first scenario assumes that TFR decreases from 5.1 children per woman in 2007 (rate derived from the 2005 Ethiopia Demographic and Health Survey) to 2.9 by 2037. This projection is referred to as the *low socioeconomic development scenario* or *slow fertility decline*. The second scenario assumes that fertility decreases from 5.1 children per woman in 2007 to 2.3 by 2037. This projection is referred to as the *high socioeconomic development scenario* or *fast fertility decline*.

Impacts of Rapid Population Growth on Social and Economic Development

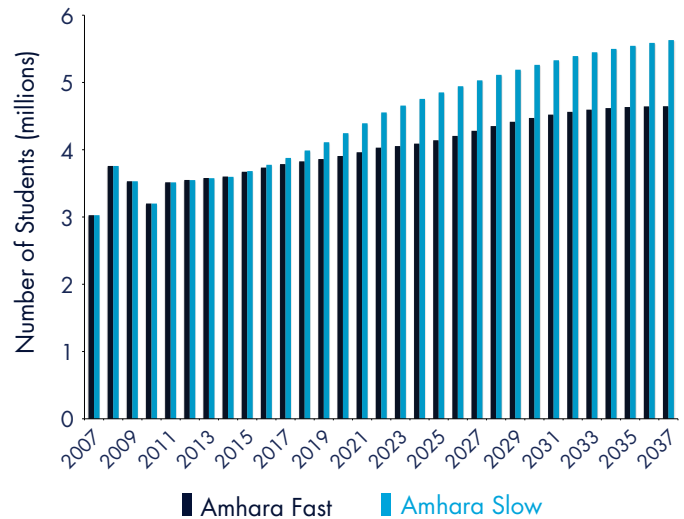
Rapid population growth affects the Amhara region’s ability to achieve its social and economic development objectives. The two population scenarios show the importance of demographic factors in Amhara’s ability to reduce poverty and improve the lives of its people.

Education

PRIMARY SCHOOL ENROLLMENT

A large number of children are enrolled in primary education, so the cost to the Amhara regional government is substantial. In the *slow fertility decline* scenario, the number of primary school students in Amhara would increase from about 3 million in 2007 to 5.6 million in 2037. By contrast, in the *fast fertility decline* scenario, the number of primary school students would be 4.6 million in 2037 (Figure 1)—about 1 million fewer primary school students.

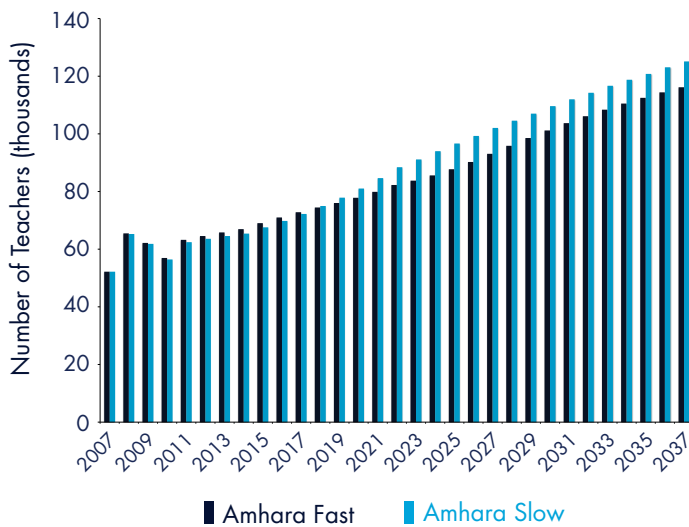
Figure 1: Primary School Students



PRIMARY SCHOOL TEACHERS

As a result of the rapid increase in enrollment without a corresponding increase in the number of teachers, the student-to-teacher ratio is high. To improve the quality of education, more teachers must be recruited to teach at the primary school level. The Ministry of Education has set a target to recruit more teachers and eventually reduce the pupil-teacher ratio to 50 students per primary school teacher. In the *fast fertility decline* scenario, 116,000 primary teachers would be required in 2037 (Figure 2). The *slow fertility decline* scenario, which results in more students, would require 125,000 teachers at the end of the projection period—8 percent higher than under the fast fertility decline scenario.

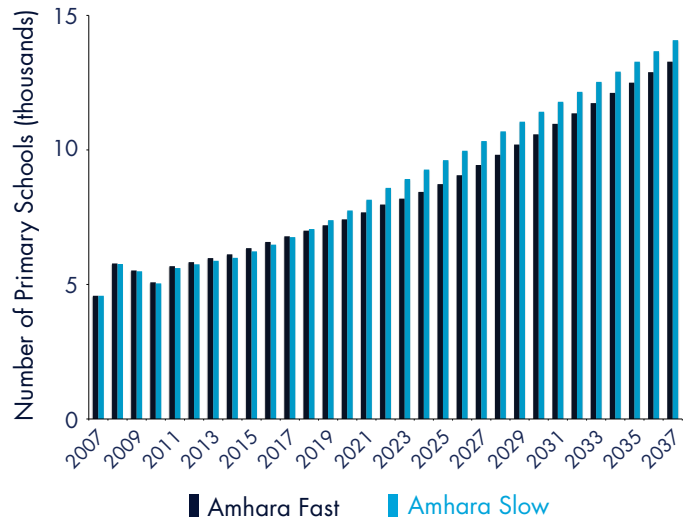
Figure 2: Primary Teachers Required



PRIMARY SCHOOLS

In the Amhara region, 4,580 primary schools were required to teach slightly more than 3 million students in 2007, an average of about 661 students per school. In the *fast fertility decline* scenario, the number of primary schools required would be 13,280 at the end of the projection period (Figure 3). The *slow fertility decline* scenario would require 14,080 primary schools, meaning the regional government would have to build 800 additional primary schools than in the fast scenario. As more schools are required, more resources are needed for construction.

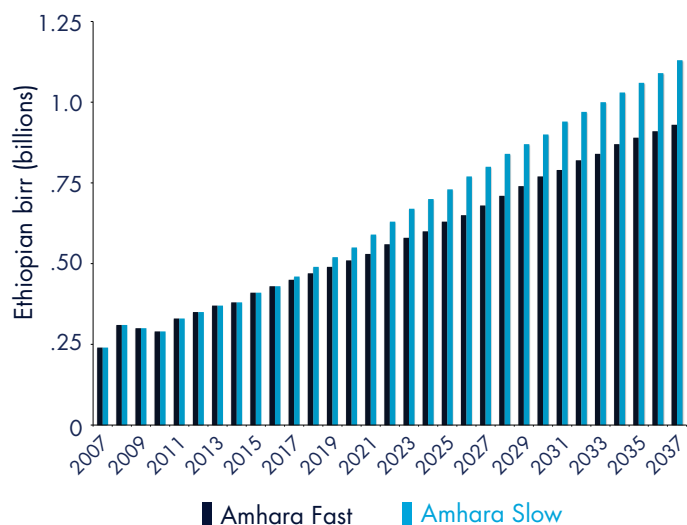
Figure 3: Primary Schools Required



EXPENDITURES ON PRIMARY EDUCATION

When rapid population growth continues, more financial resources are needed to accommodate the growing number of primary school students. By 2037, the region’s annual education expenditures would be close to 0.9 billion birr under the *fast fertility decline* scenario, compared with 1.1 billion birr under the *slow fertility decline* scenario (Figure 4). Over the projection period, the region could save about 200 million birr in the *fast fertility decline* scenario, which could be used to improve the quality of education.

Figure 4: Primary School Expenditures



Health

HEALTH PERSONNEL

The Amhara region's health system is already severely understaffed. In 2007, only 117 physicians and 1,735 nurses were available in the region, creating high provider-to-population ratios. By 2037, 2,970 doctors and 11,900 nurses will be required under the *fast fertility decline* scenario, while 3,290 doctors and 13,170 nurses will be required under the *slow fertility decline* scenario during the same period. If fertility declines slowly, nearly 1,600 additional health personnel will be required, even if the very high provider-to-population ratios do not improve.

HEALTHCARE FACILITIES

In 2007, public and nongovernmental organizations operated 19 hospitals and 169 health centers with 1,615 and 396 beds, respectively (MOH, 2007), in the region. By 2037, 297 hospitals will be required under the *fast fertility decline* scenario, compared with 329 hospitals under the *slow fertility decline* scenario. This implies that the region will need to construct 32 more hospitals in the *slow fertility decline* scenario by the end of the projection period.

EXPENDITURES ON HEALTHCARE

To achieve the universal health goals and the national and international health targets of the Growth and Transformation Plan (GTP) and the Millennium Development Goals (MDGs), the region is mobilizing all stakeholders. In addition to an adequate number of qualified health personnel, it is essential that sufficient resources are allocated to provide for health system needs.

In 2007, recurrent health expenditures in the region were reported to be 184.5 million birr, while per capita health expenditure was 10.9 birr (MOH, 2007). If the fertility rate continues to decline slowly and per capita expenditures rise, recurrent health expenditures will increase to 9.9 billion birr by 2037 in the *slow fertility decline* scenario and 4.5 billion birr in the *fast fertility decline* scenario. With a faster fertility decline, cumulative savings will reach nearly 5.4 billion birr over the projection period, despite even higher per capita expenditures. The per capita health expenditure for slow fertility decline will reach 150 birr; it will reach 300 birr for fast fertility decline. This implies that



Photo by Health Policy Project

with a faster fertility decline, it is possible to provide higher-quality healthcare services with lower health expenditure.

Urbanization

In the *fast fertility decline* scenario, the proportion of the region's population living in urban areas is projected to rise from 2.1 million (12%) in 2007 to 11 million (37%) in 2037. However, with slow fertility decline, the urban population would rise to 10 million in 2037, a decrease of 1 million urban dwellers from the *fast fertility decline* scenario. With fast fertility decline, the urban population is projected to be larger because of greater economic growth, introduction of new technology, and faster urbanization compared to the slow fertility decline scenario.

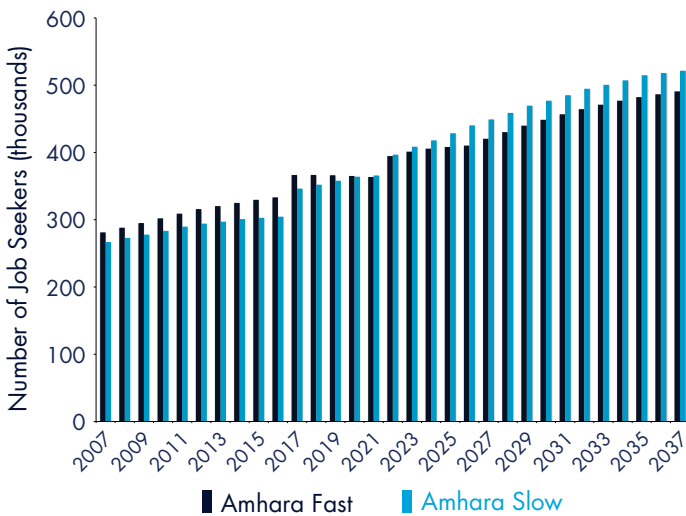
Economy

The economy of the Amhara region is based on agriculture, and the majority of the regional population is employed in this sector. The potential labor force population, which was 8.0 million in 2007, will reach 19.7 million by 2037 under the *slow fertility decline* scenario. But under the *fast fertility decline* scenario there will be 110,000 fewer people in the labor force, decreasing the potential for unemployment and overexploitation of resources.

New Jobs Required

The RAPID model provides a clear estimate of the number of jobs required on an annual basis, which is important information for those who plan for the economy and employment in the region. The number of job seekers in 2007 was 267,000, and in 2037 it will reach 521,000 under the *slow fertility decline* scenario (Figure 5). However, under the *fast fertility decline* scenario, the region would have 31,000 fewer job seekers, thus putting less pressure on the labor market.

Figure 5: New Jobs Required



Child Dependents

The 0–14 age group is referred to as dependent because children of this age depend on working-age adults for financial support. The number of child dependents would increase from 5.7 million in 2007 to 10.0 million in 2037 under the *slow fertility decline* scenario. However, under the *fast fertility decline* scenario, Amhara would have 2 million fewer child dependents. With fewer dependents, families can invest more in their children’s health and education, improving their well-being and contributing to a higher level of human capital in generations to come.

Policy Response

In recent years, Amhara has experienced a significant fertility decline, from 5.1 children per woman in 2005 to 4.2 in 2011. However, the fertility rate remains high, and even if it continues to decline, the region’s

population will grow steadily due to momentum from previous high fertility. The speed and level of future fertility changes will determine Amhara’s population growth in the years to come.

In turn, Amhara’s future population will affect the resources required for many sectors, including education, healthcare, urbanization, and the economy. If the population grows at a faster rate, in line with the *slow fertility decline* scenario, Amhara must provide more schools, teachers, healthcare personnel, healthcare facilities, urban infrastructure, and jobs. In contrast, under the *fast fertility decline* scenario, slower population growth will make more resources available for investment in the economy and the well-being of the population.

Family planning is an important intervention in shaping future fertility and population growth because it enables women and couples to have the number of children they desire. Amhara has already achieved a higher contraceptive prevalence rate than many regions of Ethiopia. In Amhara, 33 percent of married women ages 15–49 were using a modern contraceptive method in 2011, higher than the national average of 27 percent (CSA and ICF International, 2012). Still, 22 percent of married women have an unmet need for family planning, indicating that while they would prefer to space or limit their next birth, they are not using contraception. Meeting this unmet need is a key step in reducing future fertility, slowing population growth, and helping Amhara achieve its development goals.

The results of these projections demonstrate that while progress is being made, there is still much to do to address population and reproductive health issues and increase socioeconomic development in Amhara. In addition to investment in family planning, recommended policy actions include increasing girls’ education, reducing early marriage, creating more job opportunities, integrating population issues into development planning, and ensuring stakeholders’ leadership on and commitment to population and reproductive health issues. Together, these actions can put Amhara on the road to effective, sustainable development.

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