

## Improving access to voluntary family planning also improves food security and contributes to climate stabilization

JJ Speidel, S Raifman, KMJ Thompson

Long-term environmental, consumption, and population trends are undermining world food availability and the stability of our climate. These trends include rapid population growth, increasing affluence, the greenhouse effect, widespread depletion of water, soils and fisheries, and diversion of grains from human consumption to bio-fuel production and animal feed. Lack of food is already a serious problem for one out of nine people in the world and global greenhouse gas emissions continue to rise to record levels.

Most unmet need for family planning services is in low and middle income countries; meeting this need would slow population growth and decrease pressure to escalate food production. Over time, lower intensity agriculture will help stabilize the climate by reducing greenhouse gas emissions from agricultural production.

### Challenges to improving food security and slowing climate change

An additional 70 million people will become food insecure by 2015, bringing the total to nearly 920 million [1]. Sub-Saharan Africa remains the region with the highest prevalence of undernourishment (25%), and, with population growth and urbanization, demand for food in Africa may double as early as 2020 [1]. To feed a larger, more urban and affluent world population in 2050, food production must increase by at least 50% [2, 3].

**Global warming** will intensify, given current greenhouse gas emissions [4]. A 1.8°F increase in mean temperature will likely cause a 2.5—16% decline in crop yields, as observed during the 2003 heat wave in Europe [5]. By 2030, maize yields in Africa may decline up to 35%, due largely to increased rainfall variability and local temperature changes [6, 7].

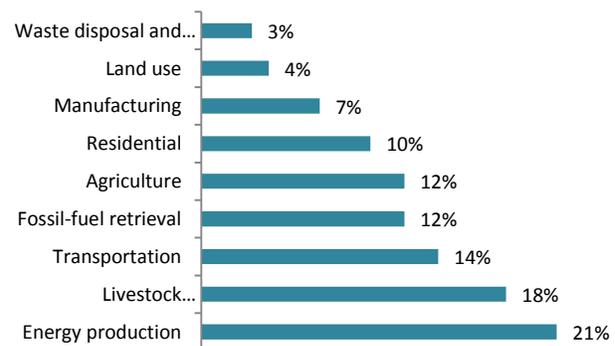
**Agriculture and meat production** now account for nearly one-third of greenhouse gas emissions (**Figure 1**), mainly CO<sub>2</sub> from deforestation, CH<sub>4</sub> from livestock and rice production, and NO<sub>2</sub> from fertilizer [8, 9]. Meat production alone emits more greenhouse gases than all forms of global transportation or industrial processes.

**Overuse of rivers and groundwater** for irrigation is intensifying water shortages. Over 1.7 billion people are threatened by groundwater depletion [10]. By 2025, three in four people will face some degree of water scarcity [11]. Depletion of fossil aquifers threatens grain production in China, India, and the U.S.

**Land degradation** is shrinking the amount of cropland available. Between 1981 and 2003, nearly a quarter of all land was degraded [12]. The land lost each year could produce 20 million tonnes of grain [13]. Conversion of forests to cropland is accelerating deforestation, contributing 30-40% of greenhouse gas emissions in some regions [14, 15].

**Overfishing has led to declines in the global fish supply.** More than 2.9 billion people rely on fish for protein, yet 80 percent of global fisheries have been over-fished or fished to their biological limit [16].

**Figure 1: Greenhouse gases emissions, as a percent of the total**



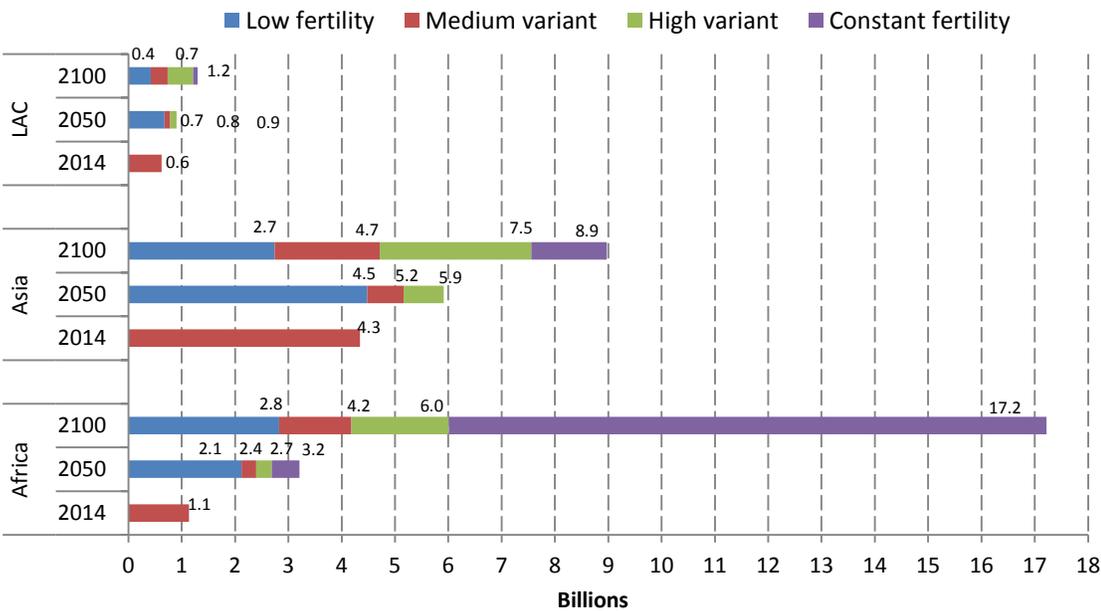
Sources: [26]. Note: Total is greater than 100% due to rounding.

**Biodiversity loss** has increased rapidly since 1800 due to habitat depletion, pollution, introduction of diseases and invasive species, and exploitation of commercially desirable species. Loss of biodiversity threatens food supplies. The loss of half the world’s mangroves and coral reefs has reduced the breeding grounds of many fish species [17].

### World population growth

Each year, the world adds 86.5 million residents; most growth is in lower income countries [18]. The UN “medium variant” estimates population will increase from 7.2 billion today to **9.6 billion in 2050**. This assumes substantial declines in fertility due to increased use of family planning. The underfunding of family planning makes a population closer to the UN “high variant” of 16.6 billion in 2100 more realistic (**Figure 2**). If fertility does not change (“constant variant”), the

**Figure 2: Medium, High and Constant Population estimates, by Region**



Source: [27]

population would reach 11 billion by 2050 and more than 28 billion by 2100. Most countries with severe and protracted food insecurity have rapid population growth. The five largest—Ethiopia, Democratic Republic of Congo, Sudan, Kenya and Uganda—will grow 70-170% by 2050, likely intensifying food insecurity.

### Unintended pregnancy and unmet need for family planning

Up to half of pregnancies in developing countries are unwanted or mistimed. Up to 25% of women around the world who are not using family planning want to stop childbearing or delay the birth of their next child [19]. In 2012 an estimated **222 million women had an unmet need for family planning**, and many of them suffered from chronic food insecurity [20]. Global demand for family planning is projected to grow by 40% in the next 15 years [21].

Climate experts recognize the importance of family size in reducing the severity of climate change. A transition to smaller families by 2050 could bring 16-29% reduction in the greenhouse gas emissions estimated to be necessary to keep global temperatures from causing serious impacts [22].

### The cost-benefit of investing in family planning

Improving access to family planning is much less costly than most other carbon abatement options, including solar, wind, or nuclear power, second-generation biofuels or carbon capture and storage (**Figure 3**) [23]. To fully fund family planning programs, an estimated **\$8.1 billion annually** is needed. Only half that amount is now committed by developing countries and the donor community [20]. This needed investment is less than 4% of the \$209 billion annual expenditure the Food and Agriculture Organization estimates is necessary to meet the need for food in developing countries between now and 2050 [2].

An increased investment of \$4 billion in voluntary family planning would:

- Meet existing demand for contraception [20];
- Prevent an additional 54 million unintended pregnancies in developing countries [20];
- Reduce carbon emissions by an additional 585 million tonnes [24];
- Reduce greenhouse gas emissions and slow global climate change [22]; and
- Improve food security by reducing pressure for increased production.

Worldwide replacement level fertility by 2050 would reduce demand for crops in 2050 by roughly 600 trillion kcal per year – enough to close about 9 percent of the 6,500 trillion kcal/year gap between crops available in 2006 and those needed in 2050 [25].

**Figure 3: Funding gaps in family planning, food security, and climate change for developing countries**

	Family Planning	Food Security	Climate Change
Funding needed	\$8.1 billion annual investment in family planning	\$209 billion annual gross investment in food production	Up to \$1.5 trillion annual investment in climate change mitigation & adaptation
Current funding	\$4.0 billion annual investment in FP by the global community	\$142 billion annual investment in agriculture over the past decade by developing countries	\$100 billion annual investment from developed countries for developing countries
Gap in funding	\$4.1 billion annually (~100% increase needed)	\$67 billion annually (~50% increase needed)	\$500 billion + annually (500% increase needed)

Sources: [2, 20, 28]

### Policy Recommendations

**Ensure inclusion of family planning in a post-2015 vision.** Family planning was included in the Millennium Development Goals only after a prolonged battle. The new sustainability goals should prioritize family planning and recognize that—in addition to making an important contribution to all sustainability goals—family planning is a basic human right.

**Fully fund voluntary family planning.** We call upon the research, policy and program action communities to encourage development assistance donors to commit an additional \$2.75 billion annually and developing country governments to make an additional \$1.35 billion annual investment in voluntary family planning.

Investment in international family planning alone will not solve the problems of food security and climate change—but it can make an important contribution to their solutions.

### For additional information, please contact:

**J. Joseph Speidel, MD MPH**  
 Director for Communication, Development and External Relations, UCSF Bixby Center for Global Reproductive Health  
 Office +1-415-502-3928  
 Mobile +1-650-787-1902  
[speidelj@obgyn.ucsf.edu](mailto:speidelj@obgyn.ucsf.edu)

**Sarah Raifman, MS**  
 Butler Koshland Fellow, UCSF Bixby Center for Global Reproductive Health  
 Office +1-415-476-4911  
[sarah.raifman@ucsf.edu](mailto:sarah.raifman@ucsf.edu)

**Kirsten M.J. Thompson, MPH**  
 Project Director  
 UCSF Bixby Center for Global Reproductive Health  
 Office +1-415-502-4076  
 Mobile +1-415-734-8057  
[thompsonkm@obgyn.ucsf.edu](mailto:thompsonkm@obgyn.ucsf.edu)

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