



Too many people: Earth's population problem

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This paper was written, with a contribution from Professor John Guillebaud, to show that perpetual population growth is impossible and argue the case for gradual population decrease to environmentally sustainable levels, with alternative policy scenarios proposed.

Constantly increasing numbers

Key points

*** The world's population of 6.8 billion in 2009 was expected to grow by another 2.4 billion to reach 9.2 billion in 2050. That's the same as adding nearly two more Chinas or eight more USAs.**

*** Human consumption of renewable resources is already overshooting Earth's capacity to provide. Resources are becoming scarcer and the number of hungry people increasing year by year.**

*** Reversing population growth is one of the measures needed to ensure environmental survival. It can be done by voluntary and peaceful means, given a political and individual will to act without delay.**

*** Politically, governments can give urgent attention and increased resources to providing access to contraception and education to the estimated 200 million women and many millions of men worldwide who need and want it.**

*** Individually, couples can decide to have smaller families, for example to [Stop at Two](#) children or fewer to make a difference to population growth.**

Environmental stress, biodiversity loss, climate change and pressure on natural resources signal strongly that the world is already overpopulated. But human numbers are still exploding. Our numbers reached 6.8 billion in 2009, and are expected to climb to 9.2 billion in 2050 - by more than a third in barely 40 years. According to United Nations projections published in 2009 - [World Population Prospects: the 2008 Revision](#) - most of this growth will take place in the developing world. OPT has urged [leaders worldwide to be "brave" on population growth](#). Urgent measures are needed to reverse population growth to levels which can be sustained in the long term.

The [Population Reference Bureau](#) (PRB) estimated the world's annual growth at 83 million in 2009, this natural increase resulting from 139 million births minus 56 million deaths. Every week some 1.6 million extra people are being added to the planet - a sizeable city - with nearly 10,000 arriving each hour. Already the human species is causing serious environmental damage to its only habitat - Earth. The long-denied consequences of exploding population on ecosystems, food supplies and energy resources are clear to all, but peaceful population policies continue to be low on the list of solutions. The alternatives - Nature's methods of population control - are famine, disease and war. Without urgent efforts to stabilise and reduce world population, can efforts to save our environment succeed? With smaller populations, living in greater harmony with nature, our horizons may stretch far into the future. If the world's parents had smaller families, would their children not have a better future?

The numbers are vast. On a planet inhabited by 2.5 billion people in 1950 - within the lifetimes of many alive today - there are now more than double this number. Population was still growing by 1.2 per cent a year in 2009, with fertility at an average 2.6 children per women, well above the 2.1 replacement level, according to the PRB's [World Population Datasheet 2009](#).

Birth rates are falling but the number of men and women likely to have children keeps on growing. The United Nations Population Division (UNPD) [2008 Revision](#) medium projection of 9.15 billion population in 2050 was 100 million lower than in its *2006 Revision*, but 200 million higher than the *2002 Revision*. One reason is population momentum - the effects of high birth rates decades ago mean that there are now twice as many fertile women worldwide today than there were in 1970. A halving of birth rates can be cancelled out by an increase in the number of potential mothers.

Links: *UN World Population Prospects: the 2008 Revision:*

<http://www.un.org/esa/population/unpop.htm>

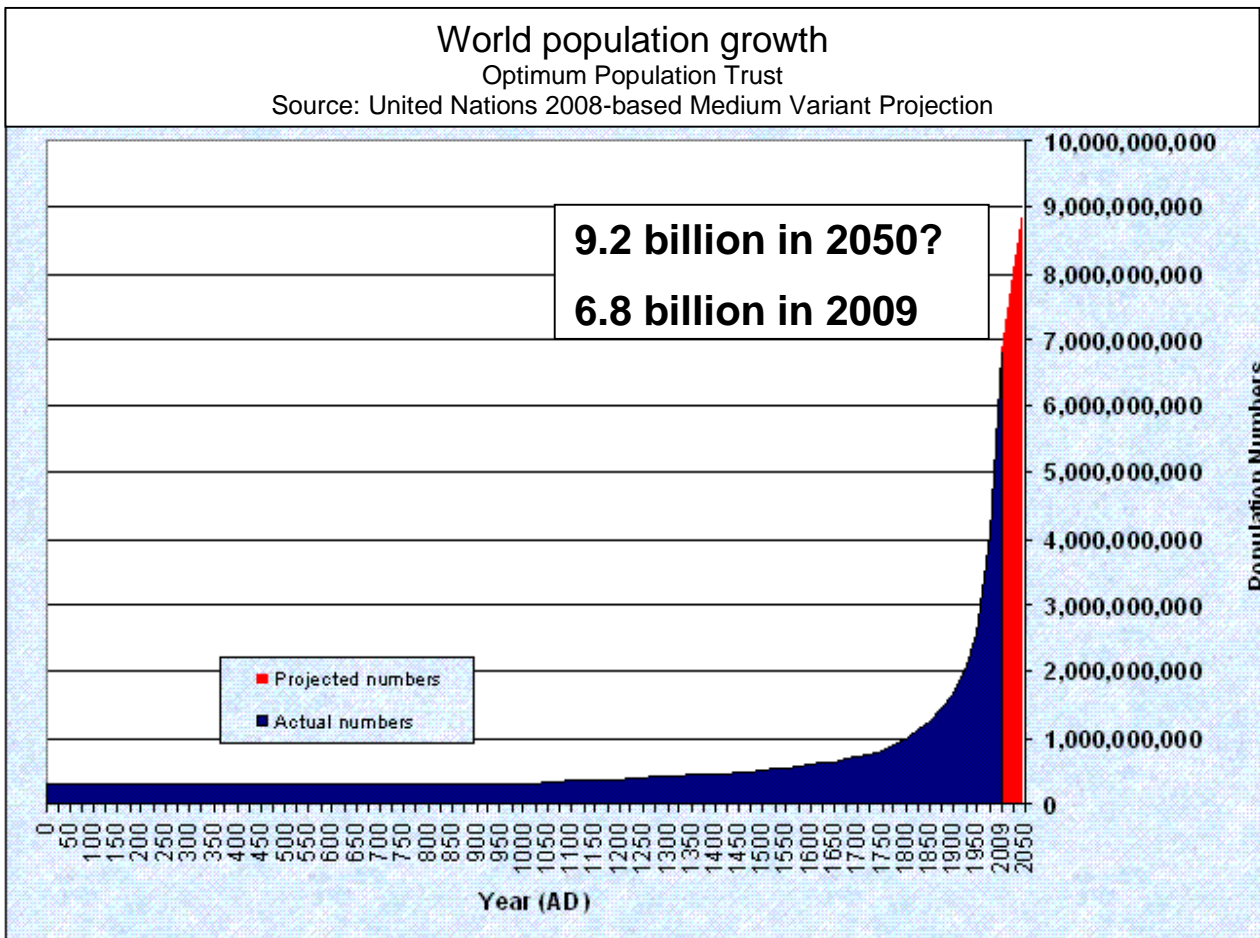
Urging leaders to be brave: <http://www.opt.release13Mar07.html>

PRB World Population Datasheet 2009:

<http://www.prb.org/Publications/Datasheets/2009/2009wpds.aspx>

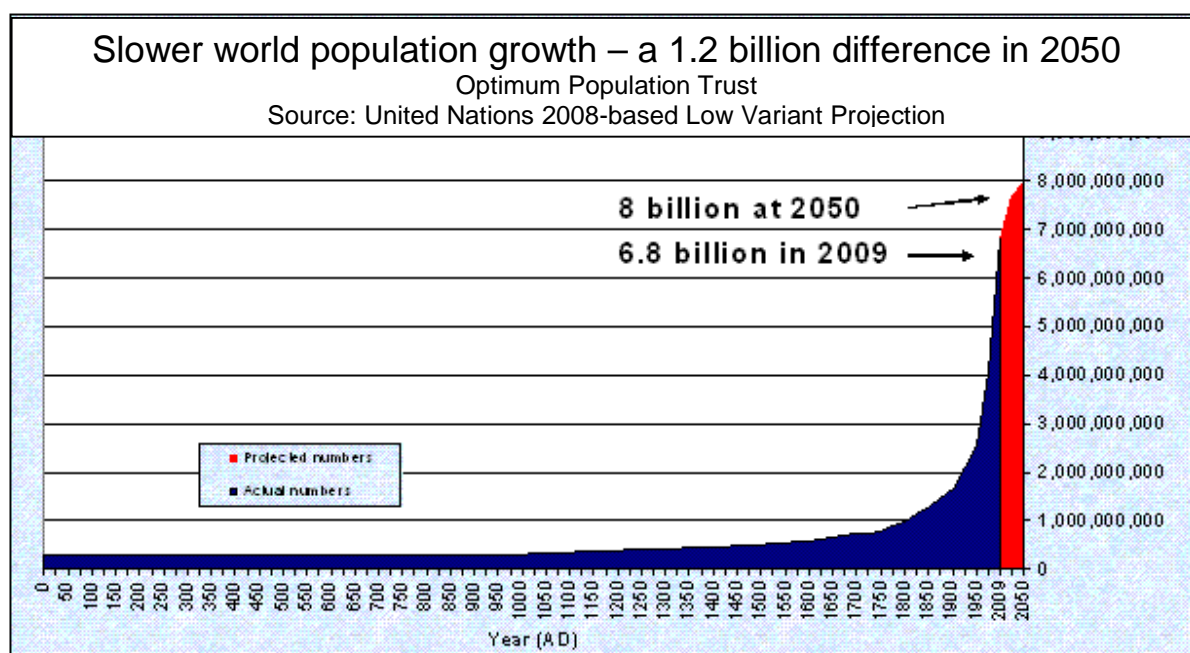
According to the UNPD's 2008 Revision, the population of most developed countries is expected to remain almost unchanged, at 1.28 billion, but that of less developed regions to rise from 5.6 billion in 2009 to 7.9 billion in 2050, with a tripling of numbers in some of the poorest nations. Net migration from developing to developed countries is projected to average 2.4 million people a year. Populations are continuing to age, with the numbers of people aged 60 or over expected to triple worldwide to 2 billion by 2050, and fertility is expected to drop, with a fall from 2.56 children per woman in 2005-2010 to 2.02 in 2045-2050 (below the replacement rate of 2.1 children).

This decrease in fertility is not happening fast enough. The urgency of realising the reductions in fertility projected, and more, is made clear by the UN: "A fertility path half a child below the medium [variant projection] would lead to a population of 8 billion by mid-century. Consequently, population growth until 2050 is inevitable even if the decline of fertility accelerates." But if the world's mothers reduce the number of children they have, there could be 1.2 billion fewer climate changers in 2050 than projected.



In recognition of the impacts of population growth on the environment, the UNPD published longer-term world population scenarios in 2003. In [World Population in 2300](http://www.un.org/esa/population/publications/longrange2/WorldPop2300final.pdf) its *Constant-fertility Scenario* extrapolation of population growth to 2300 at 1995-2000 fertility levels showed world population reaching a staggering 134 trillion by 2300. The UNPD pointed out this "untenable outcome" which "clearly reveals that current high levels of fertility cannot continue indefinitely." This puts fears about [Ageing populations](http://www.optimumpopulation.org/opt.more.ageing.pdf) into perspective - compared with the consequences of continuous population growth.

Links: *World Population in 2300*: <http://www.un.org/esa/population/publications/longrange2/WorldPop2300final.pdf>
Ageing Populations: <http://www.optimumpopulation.org/opt.more.ageing.pdf>



WORLD POPULATION GROWTH IN FIGURES (MID-YEAR)

1950-2050 Figures from UNDP Population Prospects 2008. *Projected.

| Year | Population |
|-------|---------------|
| 2050* | 9,149,984,000 |
| 2040* | 8,801,196,000 |
| 2030* | 8,308,895,000 |
| 2020* | 7,674,833,000 |
| 2010* | 6,906,688,000 |
| 2000 | 6,115,367,000 |
| 1990 | 5,290,452,000 |
| 1980 | 4,437,609,000 |
| 1970 | 3,685,777,000 |
| 1960 | 3,023,358,000 |
| 1950 | 2,529,346,000 |
| 1900 | 1,656,000,000 |
| 1850 | 1,265,000,000 |
| 1804 | 1,000,000,000 |
| 1750 | 795,000,000 |
| 1650 | 500,000,000 |
| 1200 | 450,000,000 |
| 1 | 300,000,000 |

Why has world population grown so fast?

World population grew very slowly throughout human history, until the Industrial Revolution and the dawn of an age of fossil fuels. By 1900 it had reached 1.7 billion. It then multiplied nearly fourfold to 6 billion within a century, as the advent of an age of cheap energy, medical advances and fast-improving technology enabled parents to have large families and their children to survive. During the 20th century rapid improvements in health and welfare also increased life expectancy - a trend which has continued in the 21st century after average family size began to fall. Expected future population growth will be affected by life expectancy, family size, the number of young people already born and approaching the age range of fertility - and the planet's capacity to support them.

World population statistics, including rates of population increase, fertility and death rates for each country, are listed in the PRB's [World Population Datasheet 2009](#), and analysis of population growth in relation to poverty, the environment, youth and gender issues, appeared in [State of World Population 2008](#), a report from the United Nations Population Fund (UNFPA).

Does anyone think population growth is still sustainable?

Yes, surprisingly - alongside those who believe that perpetual growth in consumption is possible. Some 80 million unplanned pregnancies a year might be prevented or postponed by allowing full access to family planning worldwide. But access to family planning on its own would not be enough to stabilise and reduce world population in the short term. With so many of the world's current population aged under 25 - a [Youthquake](#) - population growth has an inbuilt momentum which will be hard to stop. Policies to improve education and women's rights are also vital, along with changes in attitudes to family size and its impact on the environment, so that couples can choose voluntarily to have fewer children.

Links: *Youthquake*: <http://www.optimumpopulation.org/youthquake.pdf>

The mid-20th century view that technology would enable unfettered population growth (for example, the development of unlimited risk-free energy or mass space travel and the colonisation of other planets) proved a chimera for more than 50 years. Yet some international agencies and many national governments still share a comprehensive vision of global sustainable development and poverty alleviation that centres on unlimited consumption-based economic expansion. There are still people who believe that Earth can support another 2.4 billion people, with all enjoying a 'sustainable' standard of living. Others believe an irreversible mass extinction is already under way. The uncomfortable truth is that the impact on Earth's biosphere of more than 9 billion people living at a desired higher standard of living in 2050 could be fatal for the planet in terms of greenhouse gas emissions alone. OPT's view is an optimistic one: that an environmentally sustainable population can be achieved, if action is taken by governments, other policymakers, and individuals immediately and worldwide.

CHINA'S 400 MILLION FEWER

China's population policies are viewed as draconian by the rest of the world and coercion is not condoned by the Optimum Population Trust. When they were put into force the Chinese government believed them to be vital to reduce severe pressure on food supplies and ensure the country's long-term survival. China's population reached 1.33 billion people in 2009 - one-fifth of total world population, but is expected to be not much larger, at 1.44 billion, in 2050.

Zhang Weiqing, director of China's National Population and Family Planning Commission, has pointed out that thanks to its family planning policies over three decades, China had curbed fast population growth and prevented 400 million births by 2005. "The 400 million births, if not prevented, would postpone China's drive to build a well-off society," said Zhang. "Such an achievement should be recognised as many developed countries spent over a century before reaching low birth rates." [*Xinhua News, 3 May 2006*]. The benefits to other nations, during a period of rising per capita consumption and emissions, are clear.

At a 1990 per capita emission rate of about four tonnes of carbon dioxide per person per year, the world's theoretically environmentally [optimum population](#) level would not be much higher than two billion, living at an average 1990 lifestyle, in order to stabilise carbon dioxide concentration in the atmosphere.

To deal with peak oil and gas production as well as dangerous levels of greenhouse gas emissions, Earth will need to move faster into a post-fossil fuel age. During this period a much larger human population will need much larger renewable energy supplies, which could require vast tracts of land or sea. If, on the other hand, population is allowed to decrease steadily while new forms of sustainable energy are developed, land will be released from urbanisation, the number of consumers would fall, and energy targets should become easier to achieve.

The need to curb man-made climate change is alone a compelling reason for population stabilisation and reduction - to reduce climate impacts it helps to reduce the number of climate changers. The rise in greenhouse gas concentrations in Earth's atmosphere follows the sudden and sharp rise in population numbers from the start of mass industrialisation less than three centuries ago. Ecological footprinting shows that we are also overshooting by a third Earth's biological capacity to provide renewable natural resources. If the developing world is to be lifted out of poverty, therefore, world population needs to be allowed to stabilise and gradually decrease alongside reductions in consumption by the developed world.

OPT maintains that governments must take both separate and collective action to reduce world population in the long term by peaceful and non-coercive means - for example by a Kyoto-type protocol that would commit countries to initial reductions in population to 1990 levels. There is no international protocol designed to stabilise and reduce world population, however, and OPT believes that vital action needs to come from the bottom up - from citizens deciding that population policies are necessary, and making a difference by limiting their own family size.

Links: *Optimum Populations*: <http://www.optimumpopulation.org/opt.optimum.html>

What can be done?

All nation states can formulate environmentally sustainable population policies. Individual countries can set policies for their own territories, and individual couples can take action themselves. Even a small rate of natural increase, if allowed to continue, will cause substantial population growth in the long term. For example, a population growing at 1 per cent a year will double in 70 years, and one growing at 2 per cent a year doubles in 35 years.

Countries with population policies. Although worldwide fertility is falling, many governments are going backwards in their attempts to reverse population growth by encouraging sustainable fertility levels. [World Population Policies 2007](#), published by the United Nations in 2008, showed that in 1996 82 countries had an official policy to lower fertility, but in 2007 the number had shrunk to 75. While Colombia, Cote d'Ivoire, Lao PDR, Lebanon, Mauritania, Namibia, Oman, Togo and Vanuatu were new to the list in 2007, more countries had dropped out. Governments in Botswana, China, Dominica, Ecuador, El Salvador, Grenada, Malaysia, St Kitts, St Lucia, St Vincent, Seychelles, South Africa, Sri Lanka, Thailand, Trinidad, Turkey and Venezuela no longer wish to reduce their national fertility levels.

How can people be helped to have smaller families?

Firstly, by giving everyone access to family planning and reproductive health services - in the case of young people, in a moral framework of sex education. In developed countries research has led to an increasingly wide choice of contraceptive methods. But worldwide, just over 200 million women in sexual relationships do not have access to this full range. Some still want large families, yet large-scale surveys have shown at least half wish to prevent another pregnancy. Every minute in the world 380 women become pregnant, and of those 190 did not plan to do so, according to the UNFPA [2002]. Since every minute a woman dies through unsafe induced abortion or childbirth (600,000 a year), the same figures suggest that half are being killed by pregnancies they would have avoided if they only had the contraceptive choices women in developed countries take for granted. The devastation caused by HIV/AIDS is another central argument for prevention through good, comprehensive reproductive and sexual health care: which, regardless of the issues of numbers and sustainability, should be fully funded, as a human right and a key intervention for improving the health of women, their partners and their children. *Condoms and pills are as much an emblem of sustainability as bicycles and windmills.* See [Population, fertility and birth planning](#).

Secondly, by making everyone aware of the links between environmental survival and population containment. Many couples, in many countries, already limit their families to one or two children because they simply cannot afford to support more. Those who care about the environment to be inherited by future generations can also, if they wish, use family planning to limit the number of children they have. OPT's suggestion is to '[Stop at Two](#)'.

Links: *Population, fertility and birth planning:* <http://www.optimumpopulation.org/opt.more.famplan.html>

Stop at Two: <http://www.optimumpopulation.org/stopattwo.html>

John Guillebaud

OPT POPULATION POLICY

OPT campaigns for policies to achieve environmentally sustainable population levels both globally and in the UK. The ecological issue is one of population numbers, resource demands and the environmental impacts created by different sizes of population at given levels of affluence and technology. For more details see the [Fertility, Population policy projections, Briefings and submissions](#) and other sections of this website. OPT recommends the following population policies:

Globally, that full access to family planning should be provided to all those who do not have it, that couples should be encouraged voluntarily to "Stop at Two" children to lessen the impact of family size on the environment, and that this should be part of a holistic approach involving better education and equal rights for women.

In the UK, that population should be allowed to stabilise and decrease gradually to an environmentally sustainable level, by bringing immigration into numerical balance with emigration, by making greater efforts to reduce teenage pregnancies, and by encouraging couples voluntarily to "Stop at Two" children.