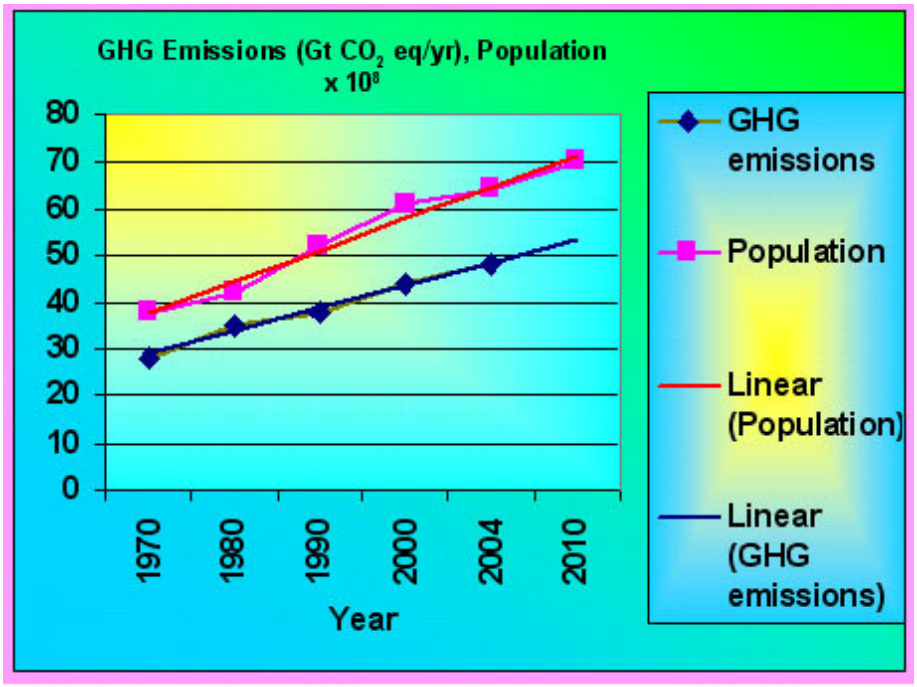
UNFCCC COP 15

Submission

from

Sustainable Population Australia Inc.



http://www.population.org.au

Summary

1. Population growth is a major driver of growth in GHG emissions.
2. Between 1970 and the present global population growth and global growth in GHG emissions have moved in virtual lock step. See graph page 1.
3. It is axiomatic that humanity's impact on the natural environment is a product of the population size and average per capita impact.
4. There are many indicators that human impact has exceeded Nature's capacity, excessive GHG emissions leading to dangerous climate change being only one such indicator
5. Population size and growth is an important climate change consideration in every country. In countries like Australia with very large per capita emissions any increase in population adds more to emissions than adding a person just about anywhere else. In countries like China with very large populations any increase in per capita emissions is important because of the very large population.
6. Australia's present population growth is 1.8% and our GHG emissions growth is 2% indicating that 85% of the increase in emissions is due to population growth.
7. Further population growth makes tackling any of our environmental problems harder.
8. Further population growth makes maintaining intranational and international peace and stability more difficult and makes more difficult the achievement of agreed conditions for reducing GHG emissions and other environmental threats.
9. UN population projections indicate a 50% increase in global population. Thus even if average global per capita emissions were cut by 30%, total emissions would remain unchanged.
10. Forty one per cent of all pregnancies across the globe are unwanted.
11. Reducing this number and ensuring that every child born is a wanted child is the fastest and most effective way of reducing human environmental impact including GHG emissions.
12. Other UN agencies have identified the critical role of population in worsening environmental damage. The UNFCCC must take this on board and integrate the urgent need for population limitation into it recommendations.

"Growing population and increased consumption of energy have had a huge impact on the environment……..To effectively address environmental problems, policy makers should design policies that tackle both pressures and the drivers behind them."

UN Global Environment Outlook Report No 4, 2007

Introduction

Sustainable Population Australia (SPA) is a national not-for-profit non-government organisation that is concerned about the deleterious environmental consequences of both national and global population growth. It has no political affiliations.

Our principal concern relating to UNFCCC is that human population growth is increasing demand for fossil fuel energy, with resultant increased carbon emissions. Our organisation wishes to provide a voice on the UNFCCC observer list for this largely denied or ignored crucial driver of increasing carbon emissions and consequent climate change.

Climate change is but one symptom among many which indicate that humanity is presently living unsustainably. The drivers of this unsustainability were eloquently and repeatedly identified in many chapters of the United Nations Global Environment Outlook Report #4. (Box page 2)

Any discussion, debate or consequent action by UNFCCC is destined to fail if world population growth is not an integral part. While increasing the efficiency of energy use and/or developing more sources of alternative energy are very necessary parts of a sustainable energy future these improvements by themselves are destined to be repeatedly offset by population increase unless human population is stabilised. In short, in a finite natural world supply options are finite. Demand must be limited by tackling both population size and per capita demand.

We recognize that religious and cultural objections are sometimes raised to any suggestion to limit human numbers. However, as the UN GEO Report 4 mentioned opposite makes clear, any dispassionate examination of the scale of the present human environmental predicament shows that population size and growth is unsustainable and cannot be ignored. Without action, worst-case scenarios are almost certainly inevitable. Business as usual with essentially unfettered population growth, is no longer an option.

It is for these reasons that we ask that this crucial and unavoidable issue be included on the UNFCCC agenda.

This will bring UNFCCC into a cooperative relationship with other UN agencies that work to limit population growth as quickly and humanely as possible. While many of these bodies work for humanitarian reasons, these reasons are complementary to the very valid environmental reasons for limiting population.

DISCUSSION

Current and future population growth

Global population currently approaches 6.7 billion people. Despite a fall in fertility to below replacement rates in many wealthier countries, particularly Western Europe, global population numbers still grow rapidly at around 77 million a year, mostly in poorer countries but also in wealthy oil-rich states in the Middle East. Although birth rates have declined markedly in some poorer countries such as Thailand (from six children to just over two per woman), nevertheless, population numbers will continue to grow rapidly for three reasons. First, even where birth rates have fallen, they will remain above replacement for decades to come. Second, in many poorer countries, as health improves, people live longer and life expectancy increases. Third, about half future growth will come from 'demographic momentum'. In many countries that experienced recent rapid population growth, large numbers of girls are entering their reproductive years now and will produce a surge of population growth over the next twenty years. (Homer-Dixon 2006)

Total population growth the problem, not per capita energy use

Globally the per capita GHG emissions reported by Meyerson show relatively little increase over almost 30 years (Figure 1). Yet total global emissions have risen sharply over this time. The discrepancy must be attributed to population growth.
Consequently, remedies proposed today without consideration of population growth will not prove a solution when world population increases to projected levels of 9 or 10 billion.

Figure 1

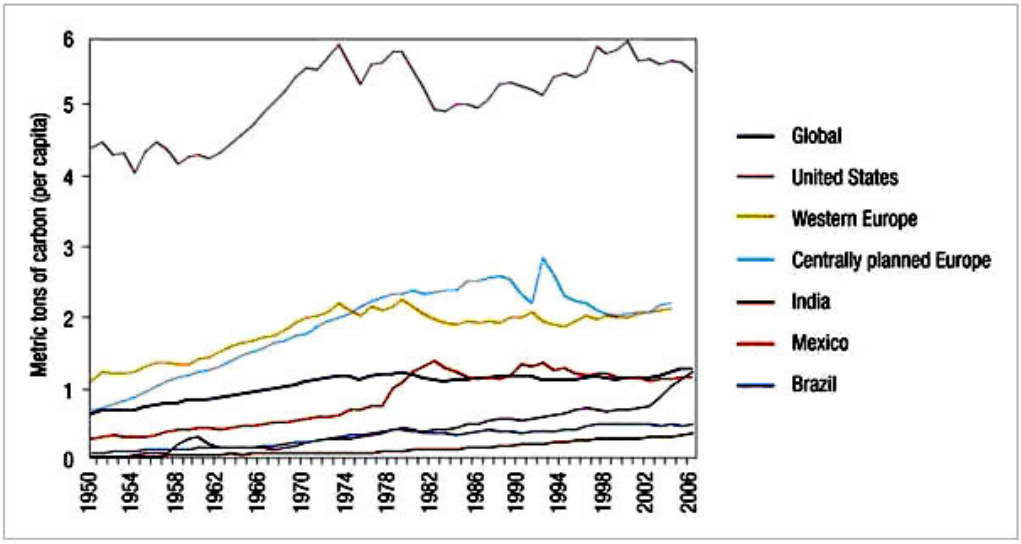


Figure 1, From Myerson, F. cited in Nature Reports Climate Change Published online:15 May 2008 doi:10.1038/climate.2008.44 *(http://www.nature.com/climate/2008/0806/full/climate.2008.44.html)*

The limits to growth

2007 Australian of the Year Dr Tim Flannery notes that in 1961 when the world had three billion people, they were using only half the total resources that our global ecosystem could sustainably provide. By 1986, however, as the population topped five billion, they were using *all* of Earth's sustainable production. This can be deemed to be the year that humanity reached the Earth's carrying capacity, that is, its limits. By 2001, with six billion people, we were 20 per cent over budget and in 2050, when we reach nine billion, we will need nearly two planets worth of resources. But, contends Flannery, for all the difficulty in finding those resources, *'it's our waste - particularly greenhouse gases - that is the limiting factor'* (emphasis ours) (Flannery 2005).

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Nature is already under stress from human activities. The UN Millennium Ecosystem Assessment of 2005 concluded that two-thirds of ecosystems on which humans depend are currently being degraded or used unsustainably (Lynas 2007).

Inter-relationship between climate change and population growth in societal collapse.

According to Jared Diamond in his book *Collapse,* two of the five reasons why societies fail to survive are 'population growth outstripping resources' and 'climate change' (Diamond 2005). While climate change largely has been independent of population growth in the distant past, nevertheless, deforestation is generally a function of overpopulation as people cut down forests to grow crops. About one-third of original forest cover has been removed without replacement since the invention of agriculture and much of the remaining forest highly modified and disrupted (Ehrlich & Ehrlich 1998). Such deforestation often causes local climate change, usually drying, but also releases carbon dioxide as soils are exposed, exacerbating global climate change.

Population growth as a major driver of climate change

Dr Mark Diesendorf notes in his 2007 book *Greenhouse Solutions with Sustainable Energy* that the largest sources of greenhouse gas (GHG) emissions are electricity generation from coal, followed by transport based on oil. 'These are driven by economic structures and associated lifestyles that are intensive in their uses of resources, *by population growth* and by inappropriate choices of technologies' (our emphasis)…'Population growth entails more houses, cars and other consumer products. It uses more materials, energy, water and land. In doing so, it results in more greenhouse gas emissions…' (Diesendorf 2007).

Diesendorf argues that endless growth in energy demand is incompatible with renewable sources of energy. At this stage, he writes, it is still possible for existing renewable technologies to supply the major proportion of electricity, although much more difficult to make major

contributions to heat and transportation as well. If substantial "demand growth" is allowed to continue, however, land availability would constrain the amount of energy that can be generated from the cheapest renewable energy sources, wind and biomass. Thus energy demand must be halted.

According to Diesendorf, the three drivers of energy demand are population, affluence (GDP per person) and technology choice. '*To stop the growth in demand effectively, all three factors must be addressed'* (our emphasis).

Diesendorf also notes that in a 2004 scenario study (Saddler et al 2004), cost effective (efficient) energy use can just balance the growth in CO_2 emissions resulting from economic and population growth, but it is not sufficient to achieve the large GHG reductions of 60-90 per cent that are needed to protect the Earth's climate. Not only is clean energy essential to achieve those cuts, but also an end to growth in demand caused by economic and population growth, as noted above.

Developing countries' contributions to GHG emissions

It is assumed by some commentators that high population growth rates in poorer countries are irrelevant because poorer countries are not the major emitters of GHGs. Nevertheless, Raupach et al (2007) have noted that CO_2 emissions from fossil-fuel burning and industrial processes have been accelerating at a global scale, with their growth rate increasing from 1.1 per cent per year for 1990–1999 to more than 3 per cent per year for 2000–2004. While the developing and least developed economies - making up 80 per cent of global population, contribute only 41 per cent of emissions, they nevertheless account for 73 per cent of global emissions growth (Raupach et al 2007).

As far as Africa is concerned, Canadell et al (2009) found that while fossil fuel emissions per capita are among the lowest in the world (0.32tC per year compared with the global average of 1.2tC per year), with the fastest population growth in the world and rising per capita GDP, Africa is likely to increase its share of global emissions over the coming decades (Canadell et al 2009).

Relative contributions of population growth to GHG emissions growth

Raupach et al (2008) show that global CO_2 emissions from fossil fuels and land use change grew from 1960 to 2007 at 1.8% per year, made up of contributions of 1.7% per year from population growth, 1.8% per year from growth in wealth (per capita income) and -1.7% per year from improvement (decline) in the carbon intensity of wealth generation. Figures since 2000 have higher emission growth (over 3% per year) and lower population growth (1.1% per year), but population growth nevertheless remains a major factor.

Population growth offsets measures to reduce GHG emissions

Birrell and Healy (2008) studied the commitment by the Australian Labor Party, when campaigning for the 2007 election, to a 60 per cent reduction in GHG emissions by 2050. Duly elected, the newly elected Government seeks to reduce the estimated level of 491m tonnes of CO_2(e) in 2000 to 196m tonnes in 2050. They assumed Australia's population was projected to grow from 21 to 31.6 million in that period (a middle range projection). Birrell and Healy (2008) found that

under a business as usual (BAU) scenario, Australia's emissions would rise to nearly 800m tonnes (nearly four times the new Government's commitment of 197 m tonnes) with the projected population growth. With the same population growth but with a one per cent annual decline in carbon intensiveness, emissions would fall to just over 500m tonnes. Should population growth not grow beyond 22 million, however, (by having zero net migration) emissions would be little more than the previous scenario at 521m tonnes. In other words, limiting Australia's population growth is nearly as effective a measure as the one per cent decline in carbon intensiveness (Birrell and Healy 2008).

The same principle applies globally*: population growth will make it harder to achieve GHG reduction targets.*

Contraction and Convergence

In the early 1990s, the Global Commons Institute developed the theory of contraction and convergence as a means to reducing greenhouse emissions in an equitable manner. The Contraction part lays down an annual fall of global emissions. The Convergence determines how the entitlements to emit carbon are distributed between the countries of the world and is based on per capita entitlements. The per capita element, however, risks encouraging countries to increase their population to earn more entitlements. Thus, if convergence and contraction is to work, it will be necessary to set maximum populations beyond which no further entitlements would be gained (Wikipedia 2009).

Food production as a driver of climate change

Professor Ian Lowe, president of the Australian Conservation Foundation, noted in his 2005 book that there has been a close correlation between the increase in methane levels and the growth in human population. The largest component of global methane production is released from rice paddies and wetlands. While we have been losing wetlands, the area devoted to rice paddies has increased to provide for a rapidly growing population. Ruminant animals such as cattle and sheep also produce methane. Lowe notes that meat consumption by humans makes two significant contributions to greenhouse emissions: land is cleared of trees to provide grazing areas for cattle and sheep, which in turn produce methane. Land clearing also occurs, of course, for human crops as well as for grazing.

Lowe also notes that cooking food produces GHG emissions as well as transporting food long distances from farm-gate to table. (Lowe 2005)

Housing and other infrastructure's contribution to GHG emissions.

George Monbiot, in his 2006 book *Heat,* notes that carbon emissions are not confined to those produced by burning fossil fuel. Making 'Ordinary Portland Cement' is a matter of turning limestone (calcium carbonate) into calcium oxide. Carbon dioxide is released as a by-product - around 500 kilograms for every metric tonne of cement it makes. This does not take into account the energy costs of quarrying and transport but if we do, about a tonne of cement produces about a tonne of carbon dioxide. An average home requires about five tonnes of cement. Because of the construction booms in South and East Asia, cement production grows by five per cent a year. Although carbon dioxide can be captured from the manufacture of cement, sequestering it is

another matter - unlike power stations, cement works must be built near limestone quarries that may be hundreds of miles from an aquifer in which to sequester the gas. For the moment then, cement manufacture remains a significant contributor to emissions (Monbiot 2006). Should population growth end, the demand for new housing would decline markedly and with it the demand for cement and for all the other materials required to build and furnish a home.

Transporting humans and their goods adds to GHG emissions

The overwhelming majority of the world's vehicles are powered by oil, either in the form of petrol (most cars), diesel (most trucks) or kerosene (most planes). Even those trains and cars powered by electricity usually rely on fossil fuels being burned in power stations. All told, transport accounts for around 14% of human-created greenhouse emissions - and that's excluding the manufacture of vehicles (BBC 2009).

It is evident that the only way to reduce these emissions is for people to travel less, demand fewer products from far away, make travel for fuel efficient or run on renewable energy, and/or to have fewer people. As with other forms of energy use, however, energy efficiency gains in the transport sector will be offset by population growth and increased use of transport.

Migration

Significant numbers of people move each year within countries and from one country to another. Generally the movement is from a country that is characterised by low GHG emissions per capita to a country that has high emissions per capita. As people settle into the new society, they tend to adopt the habits of the new country that may include bigger houses and energy use, driving cars rather than using public transport, and eating more meat or foods that have been transported further. Without indulging in the benefits or disadvantages of mass migration, it is self-evident that this mass movement of people is increasing GHG emissions.

How to achieve reduction in population growth rates

Jeffrey Sachs, director of the Earth Policy Institute, Columbia University, New York, says it is possible to achieve rapid and voluntary reductions in fertility. Comprehensive development strategies in poorer countries must embrace disease control, family planning, reproductive health services, girls' education and farm productivity. Sachs quotes the work of Australians Jack and Pat Caldwell who have worked successfully in Africa and who provide a list of seven requirements to enable family planning programs to achieve a decline in fertility:

- Heads of state should support the programs
- International aid should be maintained or increased
- Family planning service-delivery points should be densely located
- A range of alternatives should be provided
- Contraceptives should be available without prescription (to protect privacy)
- Additional mechanisms should meet the needs of adolescents, men, and unmarried people of either sex
- Abortion should be legalised. (Sachs 2008)

Clearly, the Caldwell's call for contraceptives to be made available without prescription for the sake of privacy would also enhance their uptake. 41 per cent of births globally are currently

unwanted (London School of Hygiene and Tropical Medicine 2007) and any measures that achieve the goal of reducing that statistic to zero are to be encouraged.

Technological progress can also be an instrument for bringing down birth rates and in turn population growth. Hazan and Burdago (2002) have explored the evolution of child labour, fertility and human capital in the process of development. They found that in early stages of development, child labour is abundant, fertility is high and output per capita is low. 'Technological progress, however, gradually increases the wage differential between parental and child labour, thereby inducing parents to substitute child education for child labour and reduce fertility. The economy takes off to a sustained growth steady-state equilibrium where child labour is abolished and fertility is low. Prohibition of child labour expedites the transition process…' (Hazan & Berdugo 2002)

Barriers to fertility regulation

Campbell et al (2006) addressed the barriers standing between women and the realistic availability of technologies and correct information they need in order to decide whether or when to have a child. These barriers include limited method choice, financial costs, the status of women, medical and legal restrictions, provider bias and misinformation. These barriers must be addressed if there is to be significant fertility decline.

Martha Campbell (2007) has listed why such significant population growth has attracted such little public attention. They are: visibility of actual fertility decline in developed countries as well as some developing ones; well-justified attention to the impact of high levels of consumption on the environment; an implicit welcome by conservative and religious forces to reduced needs for family planning; the tragedy of AIDS dominating the world's health concerns; and the 1994 Cairo conference's focus on coercive family planning while nearly ignoring the coercion of women into forced child-bearing; and the standard demographic theory containing an assumption that couples naturally want more children, making it difficult to see the many barriers that block women's options in controlling their fertility.

A broad range of policies needed to mitigate and adapt to climate change

O'Neill et al conclude in their 2001 book *Population and Climate Change*:

> *Slowing population growth in either LDCs (Less Developed Countries) or MDCs (More Developed Countries) is likely to reduce GHG in the long term and ease the measures necessary to stabilize GHG concentrations*. Because of the inertia of population growth, GHG emission reductions can be achieved over the next few decades only by reduction in per capita emissions, whether through reductions in consumption, a shift in consumption patterns, or improvements in technology. However, *the long-term GHG abatement associated with lower population growth can be achieved only by means of lower fertility in the short term*. Estimates of the external costs of GHG emissions associated with population growth suggest that *the climate-related returns on population policy can be substantial…*
>
> [A] portfolio approach suggests that *policies related to population should be part of a*

broad range of policies to mitigate and adapt to climate change …especially given that many of them are win-win situations.

…The consequences of climate change and demographic change may be substantial in coming decades. Both researchers and *policymakers should take into account the linkages between them* (emphases ours).

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RECOMMENDATIONS

We call on UNFCCC to ensure that

- the Copenhagen conference acknowledges the importance of population as a key driver of climate change and places the issue high on the agenda

- in addition to the critical themes as outlined by Mr Y de Boer in Bali, a new critical theme of GHG management be created, headed:
  '*Views relating to global and regional population growth, and its impact on fossil fuel demand, carbon emissions and deforestation', shortened to, "Population", for ease of reference.*

- the Copenhagen Protocol explicitly endorses the established scientific and mathematical links between population numbers, growth and carbon emissions, and therefore climate change

- the Copenhagen Protocol states unequivocally the connection between humanely reducing human numbers and GHG emission mitigation

- the Copenhagen Protocol makes recommendations as a matter of urgency, regarding the education of all peoples of the world, particularly through schools and mass advertising campaigns, about the impact of over-population on the environment in general and climate change in particular, and the humane options available to reduce human numbers

- the Copenhagen Protocol makes urgent recommendations about the need for education of women and girls, education of couples on family planning, and on all options available to optimise family planning (perhaps along the lines of Thailand and Iran)

- this conference makes recommendations on the urgent need for public awareness campaigns on the connections between rising population and fossil fuel carbon emissions

- this conference makes recommendations on the urgent need for the provision of universally free - or very cheap and affordable - family planning counselling and support, including the provision of contraceptive and sterilisation services.

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