

## CHURCHES TOGETHER IN CUMBRIA ENVIRONMENT GROUP

### Human Population in Harmony with the Environment

#### Abstract

The world human population has now passed the 6 billion mark, and this, together with ever-rising resource consumption is putting a severe strain on many environments. Although ‘carrying capacity’ has been increased enormously by human skill, ultimate natural limits remain. If humans are charged with responsibility to care for God’s creation on Earth, they have to seek ethical, caring, ways of achieving a stable harmony between humanity and the natural world on which all people depend. History shows that the best hope lies in economic and social development that combines improved agriculture, equitable sharing of natural resources, medical care, education for all, employment opportunities, and especially the emancipation of women. Several World Population Conferences have shown the way ahead, and in many countries human numbers are moving towards sustainable stability. It remains imperative that children are brought into the world and cherished in love, and that national population policies meet high ethical standards. The means to regulate personal fertility should be available to all who believe it right to use it.

#### The Christian dilemma

Soaring human numbers and the associated impact on the environment pose a serious ethical dilemma for Christians (and indeed for people of some other faiths). On the one hand, we believe that every human being has special value in the sight of God, and that children are his blessed gift. We are also familiar with the Biblical injunction to “be fruitful and multiply and fill the Earth and subdue it”<sup>1</sup>. Taken simplistically, it is possible to interpret the soaring number of people on Earth today as fully in accord with the divine will, and to castigate any attempt at deliberate regulation of human numbers.

On the other hand, many Christians believe that the grant of “dominion over every living thing upon the Earth”<sup>2</sup> brings with it a responsibility for caring stewardship, serving as God’s ‘under-managers’ on Earth, and that while we can ‘fill’ or ‘replenish’ the Earth we should not over-fill it if the consequence is, indeed, a threat of ecological breakdown. Science teaches that the environment has a finite ‘carrying capacity’. All animal species produce more offspring than can survive and the ‘struggle for existence’ is one of the drivers of evolution and hence an integral part of the creative process. Humans, thanks to their God-given intelligence and self-awareness, are the only species to have the choice between being regulated by famine, disease and conflict – or by voluntary limits on individual fertility. That self-regulation can be seen as part of responsible creation-care, for it ensures that room is left on Earth for the rich diversity of other life forms.

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<sup>1</sup> Genesis, I, v. 28

<sup>2</sup> Genesis, I, v. 26

But the exercise of that choice brings its own moral dilemmas. Clearly sexual relationships have two purposes: procreation and what biologists would term ‘pair bonding’ through the intense expression of mutual love. Some Christians believe that while responsible parenthood is a duty, artificial contraception is morally wrong because it breaks the link between sexual relationships and the procreation of human life, and denies potential people the opportunity of birth<sup>3</sup>. Others consider that the overwhelming need is for love and responsibility, that artificial contraception is not in itself evil and that couples should be allowed to make their own choices. They also believe that in certain special circumstances – such as the fight against AIDS – artificial contraception can be a positive force.

### **The Demographic perspective**

It is a matter of historic record that human numbers have increased dramatically over recent years. At the time Jesus lived on Earth there are estimated to have been about 250 million people in the world. Birth rates and death rates were both high, but roughly in balance so that total numbers increased slowly. But advances in medical science, agriculture and technology brought death rates down, without affecting birth rates. The result was rapid growth. By 1860 there were a billion people in the world and the total rose to 1.5 billion in 1900, 3 billion in 1960 and 6 billion in 2000.

However the pattern differs greatly from country to country, and the differences are especially linked to development. As countries have industrialized and become wealthier, their diets, health care, housing quality, education and employment have improved. In most societies the status of women has also improved, and parents no longer see large families as an essential means of safeguarding their old age. In such societies, birth rates have fallen until a new pattern has emerged, with birth and death rates that are both lower and in balance. Total fertility rates (TFR<sup>4</sup>) have fallen from the initial 6 to 8 to around or even below the 2.1 needed to maintain stability.

This change is termed the demographic transition and today it has been achieved in almost all the countries of Europe, North America, Australia and New Zealand and also in some we still speak of as ‘developing’, including China, Singapore, South Korea, Thailand and Mauritius. Elsewhere - for example in India, Indonesia, Malaysia, Tunisia and most of Latin America - although death rates have fallen, birth rates have not yet moved far enough downwards to create a new balance, while in regions such as Pakistan, the Middle East and most of Africa birth rates are much higher than death rates and populations are growing at near to 3% per year. This is so even though the recent scourge of HIV-AIDS has severely reduced expectation of life in many African and some Asian countries. As a result, the imbalance between the developed world, with near-stable populations, high and rising standards of living and high and increasing consumption of food and material goods and the developing world where poverty and deprivation remain acute, is actually increasing.

Forward projections depend critically on fertility rates, though the fact that in some developing countries half the population is under 16 builds a ‘demographic momentum’ into the process. However United Nations projections of global growth

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<sup>3</sup> These matters were explored in detail in the Roman Catholic encyclical *Humanae Vitae* (1968) and subsequent statements by Popes John-Paul II and Paul VI.

<sup>4</sup> Total Fertility Rate is a measure of the number of children a woman will bear throughout her reproductive years.

were revised downwards in the late 20<sup>th</sup> century, initial projections of a world total of 12 to 14 billion people by 2050 being adjusted progressively so that in 1998 the forecast was about 9 billion. This assumed achievement of an average Total Fertility Rate of 2.1 by the early 21<sup>st</sup> century. Even a slight change in this figure would have dramatic consequences.

### **The Environmental Impact of Humanity**

When human numbers were few, it was easy for them to co-exist with other species. Even the relatively densely populated lands of the Bible were the home of lions, leopards, wolves and wild asses as well as the gazelles and ibex that survive today. But as humans took over more and more land, plants that competed with the crops (castigated as ‘weeds’), wild animals that ate the crops or competed with domestic livestock for pasture, and predators that killed those livestock came under attack. The take-over by people of some 40% of net primary production by green plants on land is calculated to have caused the loss of between 5% and 13% of other species. Projections suggest that between 2% and 25% of plant and animal species will be lost in the coming 25 years<sup>5</sup>.

That impact comes from four main causes: the over-harvesting of wild species (especially, today, by marine fisheries); the destruction of wild habitats (especially tropical rain forests, the richest habitats on Earth); the translocation of species by human agency to new habitats where they invade, out-compete or prey upon native species; and pollution at local, regional or global level (with climate change, caused by emissions of ‘greenhouse gases’ as the gravest threat).

It is important not to be simplistic. Environmental impact depends on how people live rather than how many people there are. Hunter-gatherers in the Amazon basin harvest an amazing variety of plants and animals but do very little harm to the ecosystem. Even shifting cultivators who clear small cultivation patches and use them for a few years before returning them to the forest for a century or so of ‘fallow’ probably have very little impact. However, transforming tropical rain forest into a cattle ranch not only causes the loss of the forest species (many of which may not even be known to science) but destroys the organic matter in the soil and reduces rainfall. Urbanization, spreading concrete and tarmac over fertile lowlands, destroys both productivity and biodiversity. The ‘ecological footprint’ of developed countries is five or six times greater than that of the developing world, not least because it is these countries that emit the greater part of the carbon dioxide that is stoking up the global greenhouse effect and causing climate change.

### **The Limits of Nature**

“Humanity must live within the carrying capacity of the Earth. There is no other rational option in the longer term. Unless we use the resources of the Earth sustainably and prudently, we deny people their future.” These words come from the second World Conservation Strategy, *Caring for the Earth*, published in 1991. If we ignore nature’s limits we also deny our God-given intelligence and opt for the natural regulators of famine, disease and conflict which could all too easily leave depleted human populations with shattered cultures, struggling to exist in a degraded environment. That, surely, would be a betrayal of our role as God’s stewards.

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<sup>5</sup> See CTiC Environment Group paper on Biodiversity: Caring for a Diverse Creation.

Fortunately, human ingenuity, and especially agricultural skill, has greatly expanded the Earth's carrying capacity. The production of crop plants has been enormously increased by selective breeding. Irrigation, the application of fertilisers and pest control have further boosted yield. Livestock breeding has produced strains of docile, quick-growing and high-yielding domestic animals. The predators and diseases that would once have threatened them have been substantially controlled. In a similar way good forestry and fisheries practice – including fish-farming – have enhanced yields from those sources.

Simple statistics show the consequence. A square kilometre of rain forest can support one hunter-gatherer. The same area of East African grassland may support 25 nomadic pastoralists. For Indian monsoon ricelands the figure rises to 260 (of whom 30 are in the towns). Under intensive arable farming in the United States, a square kilometre can sustain 60 people on the land and 2000 in the city. By the 1990s the world wide average food intake was an adequate 2,670 calories per head per day – although there were severe imbalances, with deficient diets in some areas.

Of course this has been at a cost – the removal of habitat from other species - but the gloomy projections of Thomas Malthus have been averted and the vast increase in human numbers made possible. However, nature's limits cannot be pushed aside for ever. It takes about 2 hectares of ploughland and pasture to feed a single person in a developed country. To provide the same diet for 9 billion people – the minimum likely by the later years of the present century – would require 18 billion hectares. Yet there are only 13 billion hectares of ice-free land on the planet, and some 10 billion of those hectares are either incapable of productive use or have a highly limited potential. In 1990 there were only 0.28 hectares of arable land per head of the world population, and at current rates of population growth this figure will fall to 0.18 arable hectares per head in 2150. This would be just about enough to provide an adequate diet if this was largely vegetarian, but since it takes about 6 kilograms of feed grain to produce 1 kilogram of meat it would appear quite impossible to give everybody the meat-rich diet considered normal in developed countries. If the current trend to ferment maize and soya to produce ethanol as a motor vehicle fuel continues, the problems will be exacerbated.

The implication is that we have about fifty years to bring human numbers into sustainable balance with the environment, if large-scale famine is to be avoided. If the maximum total world population could be held at under 9 billion, and then slowly declined to no more than today's 6 billion, a 'smooth landing' is likely. But a second implication is that equity demands that the current over-rich diet – and massive food wastage – in many developed countries will have to be reduced, with, incidentally, substantial public health advantages. There needs also to be a more equitable sharing of natural resources and fairer trade, so that developing countries get a proper price for their produce and for the raw materials they sell- and this equity is in the interests of the developed countries since it makes universal economic prosperity and a stable world population more likely.

### **Achieving a Balance**

Several Governments have taken measures to reduce their population growth: by 1995 90% of the population of the developing world lived under regimes that actively encouraged fertility limitation. Some had adopted coercive measures that many Christians find repellent. In 1952 India adopted an official policy to limit population growth but financial incentives to promote vasectomy proved highly unpopular. China's widely-publicised 'one child per family' policy did follow the country-wide development of medical care and has achieved a measure of success, but imposed social stresses.

Of course it is important that population policies show respect for the worth of every human being. It is surely repugnant that world-wide some 40 to 60 million abortions are conducted every year, over 20 million of them unsafe and/or illegal, with between 50,000 and 100,000 women dying in consequence. Female infanticide is another repugnant consequence when strictly imposed family limits clash with a desire for male heirs.

What is clear from history is that economic and social development, especially with education for women as well as men, does lead to voluntary measures of birth regulation and population stability. Five main factors have been shown to promote population stabilisation: agricultural improvement that enhances food quality and food security; the curbing of pollution; the provision of medical care including the means for birth control; economic development that provides a prospect for employment and a reasonable quality of life for all people; and educational, social and cultural support informing people about the wisdom of reducing family size to sustainable levels.

These conclusions have been endorsed by a series of international conferences. In 1992 the United Nations Conference on Environment and Development agreed that:

“Governments should take active steps to implement as a matter of urgency, in accordance with country-specific conditions and legal systems, measures to ensure that women and men have the same right to decide freely and responsibly on the number and spacing of children.”

The 1994 International Conference on Population and Development, held in Cairo, adopted a World Programme of Action with 15 principles: the following are extracts:

- Human beings are at the centre of concern for sustainable development. They are entitled to a healthy and productive life in harmony with nature.
- The right to development must be fulfilled so as to meet equitably the population, development and environmental needs of present and future generations.
- Sustainable development as a means to ensure human welfare, equitably shared by all people today and in the future, requires that the inter-relationships between population, resources, the environment and development should be fully recognized, properly managed and brought into harmonious, dynamic balance.

It is noteworthy that the Holy See (which has UN membership as a sovereign state) joined the consensus on the Cairo Programme of Action, while reserving its position on some of the provisions.

### **Conclusion**

There is now a near consensus, world-wide, on the imperative of bringing human numbers into balance with the capacity of the environment to support both our species and the millions of others forming the living creation on Earth. But it is also accepted that the way forward lies within a development pathway that provides everyone with the essentials of life, including food, clean water, sanitation, medical care, education and opportunity, especially for women. Children should be brought into the world and cherished in love. The means to regulate personal fertility should be available to all who believe it right to use it.

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