

WORLD POPULATION

The human population is growing by nearly 100 million people every year. This is faster than predicted ten years ago, and the UN has had to revise upwards its forecasts of future populations. It now predicts that global population could double or even triple from its current 5,300 million.

This briefing note examines the underlying trends in global population, the reasons for them, their implications and related issues.

THE CURRENT SITUATION

In its 1991 report on the 'State of World Population', the UN Population Fund (UNFPA) states that earlier trends towards slowing of population growth in many countries have not been maintained or have even reversed. Its forecast in 1984 that global population would stabilise at 10.2 billion (B) towards the end of the 21st century has thus been increased to 11.6B. Even this assumes that there will be further substantial and sustained falls in fertility¹; if these fail to materialise, the World could be heading for a total of 14B people or more. On the other hand, conditions can be envisaged where the World population could level off at around 8 billion. The difference between the scenarios of low and high growth thus exceed the current World population.

95% of the increase is taking place in developing countries (DCs). The highest rates of growth are often in the poorer countries (in 13 African countries, the birth rate actually rose between 1960/5 and 1980/5). The result will be a transformation in the geopolitical structure of the world. For instance, Europeans outnumbered Africans by 2.2 to 1 in 1950; by 2025, Africans will outnumber Europeans by 3 to 1. World population distributions are in Figure 1; factors affecting population growth are summarised in the Box.

WHAT DETERMINES FAMILY SIZE?

Many factors affect family size. Birth rates generally decline as levels of economic and social development and urbanisation rise, as education improves and knowledge about family planning and the means to practice it spreads. Cultural and religious factors also

□ Factors Affecting Population Growth

Rates of population growth are determined by the balance between birth and death rates. The latter have been the first to decline due to improvements in nutrition, sanitation, medical treatment etc. In much of the developed world, falling death rates were quickly followed by a decline in births, so that most developed countries now have a stable, slowly increasing or decreasing population. In the developing world, death rates have declined dramatically, but birth rates (although falling in many countries) remain high leading to a rapid increase in population.

The number of births depends upon fertility, the age structure of the population and the size of the existing population. The key factor is fertility. Fertility rates have fallen steadily; in DCs they fell from an average of 6.1 in 1965 to 3.8 now. Some countries have seen substantial falls (e.g. India, Sri Lanka, China, Korea), while others (e.g. sub-Saharan Africa, Afghanistan) have seen increases on previously high rates (e.g. Afghanistan's population will double in ten years at current growth rates).

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With a given fertility rate, the number of births will be higher where more women are of reproductive age. In the developing countries, a high proportion of the population is young, so that the numbers reaching the reproductive age will grow rapidly. This structure gives a great momentum to population growth even where fertility rates are declining.

Taking these factors into account, the projection that numbers will level off at around 11.6B assumes that the fertility rate in developing countries will continue to fall - from 3.8 now to 3.2 by 2000 and to 2.3 by 2020. Achieving a much lower figure of around 8B would require women in developing countries to reduce the average number of children they bear to 2.7 by 2000-5 and to 1.9 by 2020-5. If significant progress is not made in reducing fertility relative to today's levels, World population would exceed 14B after 2100.

have an important influence. Advances in women's status, education and rights are particularly important.

Some have held that economic development is an essential precursor to a decline in fertility rates; also that a decline in fertility necessarily follows a reduction in infant mortality. There is now widespread evidence that any such linkages are not universal, nor do they act fast enough to lead to the speed of decline favoured by many countries. Unsurprisingly, the prevalence of contraceptive use is the most important factor determining fertility rates in a large number of countries. Thus countries which have improved the availability of family planning (FP) have achieved falls in fertility rates even though their economic development is limited or even declining (e.g. Bangladesh and Kenya). Others which have not provided such services (e.g. Algeria, Libya, Iran and Iraq) have seen high fertility rates maintained despite significant improvements in their economies.

The AIDS pandemic has led some to ask if it is likely to cancel out rapid population growth in Africa or other areas affected. The answer is not yet known, and forecasts differ. One calculation suggests that even if the current highest infection rate (Uganda) were applied to

1. Fertility is used in this context to mean the number of children borne by a woman during her child-bearing years.

the whole of Africa, the population growth rate would fall from 3% to 1.8% which is above the current world average of 1.7%. Other calculations suggest that if control measures are ineffective, AIDS is capable of turning population growth into a decline over a period of several decades in the worst affected regions.

In contrast, increasing use of infant formulas in DCs and shorter duration of breast feeding removes a natural limitation on pregnancy spacing and raises fertility.

POPULATION AND THE ENVIRONMENT

Very high population growth rates, combined with continued industrial development, will make an increasing impact on the environment. For instance;

Global Warming. The main greenhouse gas contributing to global warming is carbon dioxide (CO₂) - see POST briefing 16. **Energy generation** is the largest source of CO₂, and World Energy Conference forecasts are that consumption of energy in DCs will have tripled by 2020, with population growth responsible for half the increase and higher standards of living the other. Around 18% of worldwide CO₂ emissions arise from **deforestation**, primarily in the tropics. The causes are 'slash and burn' patterns of shifting cultivation, agriculture (e.g. cattle ranching), local demand for firewood and unsustainable timber harvesting. Expanding populations contribute especially to the pressure for cultivation and firewood, and up to 80% of forest cover loss may arise from the pressures of population growth.

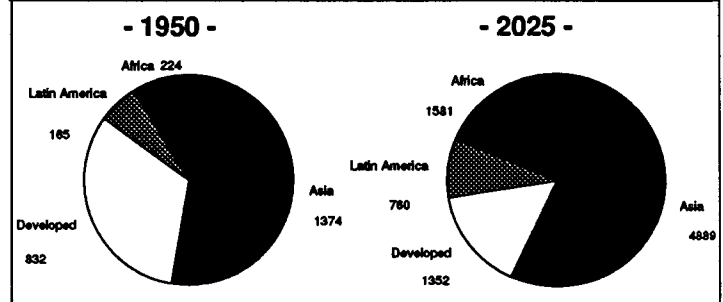
Overall, UNFPA estimate that the growth in human numbers is responsible for two thirds of the CO₂ increase over the last 20 years (the rest being caused by increases in *per capita* emissions). Nor are effects limited to CO₂; rice paddies and domestic cattle - food supplies for 2 billion people in DCs - are major producers of methane (the next most important greenhouse gas).

Urbanisation. Rural poverty and growing populations have led to huge increases in the numbers of people living in large conurbations where water, sanitation, housing, health, education are inadequate. For instance, the number of people without safe sanitation increased from 1034 million in 1970 to 1750 million in 1985.

Desertification. Some drier lands in DCs are undergoing the extreme form of soil depletion associated with desertification due to over grazing, firewood collection or land overuse, driven by increasing population. It is estimated that 580M people live in absolute poverty on marginal or fragile land - particularly in parts of sub-Saharan Africa, the Middle East and NW Asia.

Indeed some see many DCs as caught in a 'demographic trap' whereby the fall in death rates has caused

Figure 1
WORLD POPULATION DISTRIBUTION 1950 AND 2025 (MILLIONS)



population growth sufficient to outstrip the carrying capacity of their ecosystem. They are thus caught in a race to reduce their fertility to a sustainable level before their ecosystem collapses leading to starvation, migration or continued reliance on food aid. UNICEF reports that the infant mortality rate has stopped falling in 21 DCs and has started rising in others, which some suggest is evidence that some countries are already losing this 'race'.

POPULATION AND DEVELOPMENT

While some argue that increasing numbers of people comprise a growing resource capable of contributing to future development with the aid of technology, most conclude that population growth at the rapid rates common in the DCs inhibits development. Rapid population growth offsets potential improvements in *per capita* income and food, and forces Governments to increase consumption rather than invest in long term improvements in health, education, infrastructure and increasing job opportunities.

In education, the rapid growth in the number of children stretches education services and spending per pupil declines. Falls have been observed in both enrolment rates and student achievement in countries undergoing large increases in school-aged populations. Such countries also face rapid increases in their labour forces (e.g. Nigeria will see a doubling in its labour force by the end of the century due to rapid growth in the 1970s). Absorbing such increases is a critical issue for many countries.

ATTITUDE OF COUNTRIES

In the past, population issues have been seen by some governments as too sensitive or personal to become matters for public policy or intervention. Some also perceived a western-inspired attempt to limit the population of developing countries in order to safeguard the West's high levels of consumption. There was however, a radical shift in attitudes between the UN World Population Conferences of 1974 and 1984. In 1974, only 36 of 129 DCs considered their population growth rates too high. Now, over 80% of people in DCs live in countries which have explicit policies to reduce fertility

and rates of population growth; 98% live in countries which (directly or indirectly) support family planning activities and permit access to modern contraceptives.

Many now see the provision of safe family planning services in the context of the broader framework of human rights. Such services contribute particularly to improving women's status, health and economic well-being - an end which many believe requires no further rationale. However, in developing countries, slower growth and a more even distribution of population would also help to take pressure off agricultural land, energy sources, vital watersheds and resources, Parks, natural habitats and forest areas, and give all concerned time to evolve strategies for sustainable development.

CURRENT ISSUES

Are there absolute limits to Growth?

Various absolute limits to the carrying capacity of the Earth have been postulated. Over 150 years ago, Malthus foresaw increasing population outstripping food supplies; the 'Limits to Growth' scenarios of the 1970s saw limits from resource depletion and pollution. However, improvements in technology have prevented the realisation of such fears. The 'green' revolution caused global food production to more than keep pace with population growth from 1971 to 1985². Nevertheless, inefficiencies in the international trading systems and local factors (e.g. civil war) already lead to recurrent famines in countries such as Ethiopia and Sudan.

In recent years (1980-8), the increase in food production (1.4% p.a.) has fallen below the rate of population increase (1.7% p.a.). Food production has fallen behind population growth in 73 out of 122 DCs (including 27 of 39 countries in sub-Saharan Africa). Shortages and famines are thus likely to recur, since Africa will be able to feed only 40% of its population by 2025 at present growth rates. Indeed, recent model calculations predict that if the rate of increase in food production only matches half the population growth rate in future, then deaths from hunger could increase five-fold to around 1 billion over the next 20 years.

Other hypothetical limits in resources (e.g. minerals) have proved illusory in the light of technical or market responses to shortages. Ultimately, many see environmental degradation as the main limiter on population and industrial growth. Even here some 'limits' may be limits to choice rather than absolute constraints on growth - for instance it may be impossible to preserve forests and many wildlife species while accommodating rapidly growing populations.

2. There is a view that the capacity of the planet to supply food could be expanded further, and that switches to vegetarian diets, clearance of all forests and intensive agriculture could in theory provide a basic subsistence diet for many more people.

Methods of Family Planning

Components of effective family planning (FP) programmes include:

- sensitivity to social, cultural and religious factors,
- strong and consistent political leadership,
- a choice of methods³ and delivery systems,
- involvement of both national and international organisations,
- social marketing, community-based distribution,
- provision with maternal and child health care,
- user-friendliness, accessibility and affordability,
- increased publicity directed at men.

However, some disagreements emerge on specific elements of FP programmes.

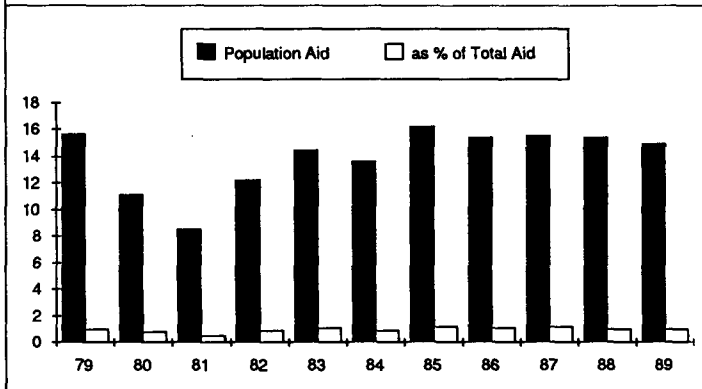
Some methods (e.g. voluntary sterilisation, IUD's, implants) have to be provided by clinics etc., and some European (especially Scandinavian) donors have attempted to restrict support of all FP services to those integrated within the primary health care system. Other donors (including the UK) see it as important to 'de-medicalise' FP wherever possible. They point out that many methods carry little health risk and do not require medically qualified or trained personnel; restricting access exclusively to health facilities is seen as both unnecessary and seriously limiting the effectiveness of family planning - particularly where non-clinical services can have the back-up of clinical services.

Community-based distribution has proved successful by training members of the community to provide contraceptive advice and supplies. Social marketing is becoming increasingly important in a number of countries using commercial marketing techniques, mass media and existing commercial and retail networks to promote, distribute and sell contraceptives. Programmes in 15 countries sell basic FP supplies at subsidised prices through retail stores and are very cost-effective. Some donors (e.g. USA) have suggested that these and other FP services should become economically self-sufficient, an objective which some criticise as wholly unrealistic for people with extremely low incomes.

There has been widespread concern on ethical and religious grounds at the use of abortion as a means of birth control. Some also object to the use of agents for menstrual regulation (uterine aspiration within 14 days of a missed period) on the same grounds as abortion. The UK Government opposes the use of abortion as a means of birth control; in the USA, funding of the International Planned Parenthood Federation (IPPF) and the UNFPA was withdrawn under President Reagan and has not been reinstated since, on the grounds that these bodies allegedly supported organisations which provided abortion services as a backup for failure of contraception.

3. Single method approaches such as India's sterilisation drive during the 1970s are seldom successful.

Figure 2 UK OVERSEAS AID TO POPULATION PROGRAMMES (MILLION 1987 POUNDS)



Critics of US and similar policies claim that withdrawal of funds from FP organisations increases the demand for abortion by reducing the availability of contraceptives. The World Health Organisation estimates that up to 60 million abortions take place each year worldwide and that 100-200,000 women die each year as a result of complications from unsafe abortion. Abortion is used extensively as a means of birth control in some countries (the USSR has an abortion rate 20 times that of the Netherlands). Without abortion, the global population would be rising 25-50% faster; reducing abortions without adding significantly to population growth thus requires substantial increases in the use of contraception.

Resources Needed

According to UNFPA, modern contraception accounts for about 85% of the fertility decline in DCs; the overall prevalence of use has increased from 15% of couples in the 1960s to 51% today - around 380M users. Surveys in the early 1980s indicated a huge unmet demand for FP services - 300 million couples without access to contraception in the developing world (excluding China) either wished to cease child bearing altogether or delay having their next child. In Africa, 77% of married women who wanted no more children were not using contraception. The increased use since then has succeeded in meeting some of this demand, but UNFPA estimate that in 1991, 100M more women might use contraception immediately if it were available.

Demand will also increase substantially due to the rapid growth in the number of women reaching child-bearing age (this will double the number of potential users in the next 15 years). Demand is also expected to increase as socioeconomic conditions improve and knowledge of FP spreads. An unmet demand of many times the current level of provision is thus foreseen. Achieving even the 'medium' UN projection of 11.6B population is dependent on quickly meeting this demand.

The UN estimate that the current spend of \$4B (of which \$675M is from international development aid) will need to double or triple if demand is to be met. This

Table 1 METHODS OF CONTRACEPTION

<i>In Current use</i>	<i>Under Trial/early use</i>	<i>Under Research</i>
Natural Male and female sterilisation IUD, condom Hormonal (pill and injectable)	Hormonal implants Vaginal rings	Injectable hormonal microspheres Male vaccine Reversible ster- ilisation Male pill

target contrasts with performance over the last 10 years where aid for population programmes has fallen in real terms (including that from the UK - see Figure 2). To meet the anticipated need would require 4% of overseas aid to go to population programmes. While some countries have adopted this figure (e.g. Norway), the UK would need to quadruple its current support (1.0% of development aid) to match. Development Banks also provide little support for FP services, even though they recognise the economic development case for reducing population growth rates; in 1988, the World Bank allocated 0.4% of its funds to FP projects.

While some object to the diversion of funds from other aid projects, others respond that such expenditure will more than pay for itself in terms of future savings on education, health services and other public services. For instance, a recent calculation suggests that increasing FP spend by \$1.1B would lead to reductions of \$2B in maternal and child care costs and \$12B in the future costs of providing universal primary education, before children reach a working age.

Research Base

The technologies in most common use and under development are listed in Table 1. While the requirements for an 'ideal' contraceptive are easy to define (cheap, effective, free of side effects, easy to use) and the market huge, research is limited. Drug companies are not carrying out much research, nor are governments very active. The main centre of activity is the World Health Organisation's programme on Human Reproduction with a budget of \$15M (the UK is the largest donor to this programme). In addition, some of the population groups support research.

FURTHER READING

Additional details and background information are available from POST, 2 Little Smith St., London SW1P 3DL, tel: (071)-222-2688.

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