

A Population-Based Climate Strategy

In 2007 the world finally woke up to climate change. It has not, however, woken up to one of its fundamental causes – human population growth. In scientific circles, the key role of population in climate change is widely acknowledged. The UK's Hadley Centre for Climate Prediction and Research says: "The main factors which have caused the rise in CO₂ emissions...are twofold: (a) growth in population...and (b) growth in energy use per person." (*Climate change and the greenhouse effect, 2005*). The Stern report (2006) lists population growth as one of four drivers of emissions growth: the others are economic growth, and the intensity of both carbon and energy use in the economy. In 2006 Prime Minister Tony Blair said it was "now plain that the emission of greenhouse gases, associated with industrialisation and economic growth *from a world population that has increased six-fold in 200 years* [italics added], is causing global warming at a rate that is unsustainable." (*Foreword, Avoiding Dangerous Climate Change*). The widely used Kaya formula, first presented to the Intergovernmental Panel on Climate Change (IPCC) in 1990, describes emissions as a product of four variables: population size, consumption levels and efficiency of carbon and energy use.

Policies to tackle climate change, by contrast, almost universally ignore population: it is seen as too sensitive and controversial. This blind spot extends from official studies such as Stern, *despite* its analysis of the causes, to the agendas of environment and development groups. The result is that a *de facto* taboo exists, throughout civil society

and within government. This has had three consequences. First, policy making has concentrated exclusively on technical and economic solutions - taxes, regulations, renewable energy, green technologies. Second, couples making decisions about family size do so in the belief that it is a matter for them and their personal preferences alone: the public debate and awareness that might have encouraged them to think about the implications of their choices for their fellow citizens, the climate and the wider environment have been missing. And third, a major avenue for reducing the potentially catastrophic impacts of climate change has been wholly overlooked.

The most effective *personal* climate change strategy is limiting the number of children one has. The most effective *national* and *global* climate change strategy is limiting the size of the population. Population limitation should therefore be seen as the most cost-effective *carbon offsetting strategy* available to individuals and nations – a strategy that applies with even more force to developed nations such as the UK because of their higher consumption levels. A non-existent person has no environmental footprint: the emissions "saving" is instant and total. Given an 80-year lifespan and annual *per capita* emissions (2006) of 9.3 tonnes of CO₂ (*Defra, 2007, provisional*), each Briton "foregone" – each addition to the population that does not take place – saves 744 tonnes of CO₂, equivalent in emissions to 620 return flights from London to New York (1.2 tonnes of CO₂ each). The Stern report estimates the social cost of CO₂ at

\$85 per tonne: each foregone Briton therefore saves society \$63,240 (c £30,000). A 35-pence (65-70 cents) condom, which could avert this cost from a single use, thus represents a spectacular (nine million per cent) potential return on investment. By contrast, the lifetime emission costs of the extra 10 million people projected for the UK by 2074 will be over £300 billion.

A population-based climate change strategy has several additional advantages. Fewer people means less demand on resources which means fewer of the negative environmental effects of a purely technological strategy – from wind turbines in beautiful countryside and biofuel plantations on land needed for growing food to a possible new era of nuclear energy. These impacts are substantial. According to the updated (baseline) projection for energy and CO₂ published by the Department of Trade and Industry in July 2006, the UK will in 2050 contain 70 million people and 36 million households. In mid-2005 the UK's official population stood at 60.2 million, living in some 24.9 million households. Sizewell B nuclear power station is said to provide electricity for over 1.5 million homes (*British Energy*), a modern 1.8 megawatt wind turbine electricity for over 1,000 households (*British Wind Energy Association*). Merely to provide low carbon electricity for the 11 million extra UK households forecast for 2050 would thus, even on industry figures, mean building seven more Sizewell Bs or some 10-11,000 more wind turbines (there are currently eight nuclear power plants and fewer than 2,000 wind turbines in the UK).

A population-based strategy also involves fewer of the taxes, regulations and other limits on personal freedom and mobility now being canvassed in response to climate change – travel taxes, congestion charging, water restrictions, carbon rationing. And because technological adaptation would be less urgent if population was stable or reducing, the economic costs of transition to a stable climate would be less and the transition itself would be smoother. To sum up, a population-based climate strategy would be easier, quicker, cheaper, freer and greener.

The Stern report, for example, estimates the costs of “climate-proofing” infrastructure in OECD countries at up to \$150 billion a year and of low-carbon investments in developing countries at a minimum of \$20-30bn a year. It also advocates raising incentives for low-carbon technologies worldwide by two to five times the current annual level of \$34bn. Family planning costs are a fraction of these figures. Yet international funding for family planning in developing countries – which carries many added benefits such as reduced infant and maternal mortality, economic growth and poverty alleviation – actually fell by half from \$723m to \$361m a year between 1995 and 2003 (*Return of the population growth factor, All Party Parliamentary Group on Population, 2007*).

The climate impact of population growth is enormous. Based on average global *per capita* emissions of 4.4 tonnes of CO₂ in 2050 (the IPCC 2001 “medium-low” scenario), the 2.5 billion growth in world population by that date, from nearly 6.7 to 9.2 billion (*UN medium variant, 2007*), will account for an extra 11 billion tonnes of

annual CO₂ emissions. The US emits 5.9 billion tonnes of CO₂ a year (2004 figures, *Energy Information Administration*) so **global population growth by 2050 is equivalent in emissions terms to the arrival on the planet of nearly two more Americas, over two Chinas (4.7bn tonnes, 2004, EIA), 10 Indias (1.1bn tonnes, 2004, EIA) or 20 UKs (0.56bn tonnes, 2006, Defra)**. Put another way, even if the world managed to achieve a 52% cut in its 1990 emission levels (21.4 billion tonnes) by 2050 – not far off the IPCC’s 60% target - it would be cancelled out by population growth.

A purely *technological* strategy for mitigating climate change involves increasing intervention by the state both in the market and in individual freedoms for the foreseeable future, with all the scope for social tensions this could bring. Given the nature of democratic politics, the outcome of such a strategy would be uncertain. UK climate change “strategies”

since the 1990s, with targets proclaimed and later dropped or missed under political pressures, are a model for what might happen in the future. But climate change is also a question of supply and demand (for energy). The current approach to mitigation emphasises one half of the equation (supply) while virtually ignoring the other (demand). It is based on two approaches which were once anathema to the environmental lobby: *technical fix* and *predict and provide*. While greener technologies and reduced consumption both have a vital role to play, treating population growth as a “given” – something over which we have no control – is a failure of courage and leadership in the face of a planetary emergency. It will do nothing to increase people’s awareness of how their own decisions about family size could have potentially devastating consequences for the environment in which their children grow up. The world – and the UK – needs to take population seriously.

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Population Matters is the UKs leading charity concerned with population and sustainability.

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