The 29th study by the Royal Commission on Environmental Pollution (RCEP) explores the potential environmental challenges that the UK will face as a result of demographic change (changes in the number and distribution of people) in the UK in the years up to 2050.

**Key findings**

- A more open and rational discussion about demographic change in the UK, and in particular about the environmental impacts of demographic change, is essential. We hope our study will provide a starting point for this discussion.

- Government has not given adequate attention to the implications of demographic change for the environment. Unless the issues are addressed urgently there is a substantial risk of costly problems emerging in the next few decades.

- Critically, it is not primarily the size of the population that should be taken into account when considering the environmental impact of demographic change in the UK. More important are factors such as household size, the age structure of the population and where people live. Public policy can have very limited direct effects on these demographic factors, with the exception of the question of where people live.

- Our current patterns of consumption have a greater impact on the environment than all the above demographic factors. There is far greater scope to influence consumption patterns and their impact. A step change is needed in efforts to increase resource use efficiency.

- The demand for new housing and related development (as a result of demographic change) will increasingly come up against environmental constraints in some parts of the country. The constraints can be managed but at an economic and environmental cost. The government should compare these costs with the cost of incentives to encourage development in areas facing fewer constraints.

**Demographic change**

We investigated demographic change and the environment because, despite there being a good understanding of the ways in which the UK population is changing, and of the social and economic implications of these changes, little attention has so far been paid to possible environmental impacts in the UK.

The UK population has grown steadily over recent years and this trend is projected to continue, at a rate which is high by historical standards. The Office for National Statistics’ projections suggest an increase in the UK population from 61.8 million in 2009 to 71.6 million by 2033. These are projections, not forecasts, and there are grounds for thinking that they might be overestimates. But even so, some growth is inevitable.
However, demography is not just about total population numbers. Demographic changes are complex, and three important factors are:

- **People are living longer.** The projections highlight a significant increase in the number of people over 65 years, with a particular increase in the proportion of people over 85 years old; increasing longevity is a significant driver of the growth in total numbers.

- **There will be more households and the average number of people in each household will be lower.** There is a projected rise in the number of households from 21.5 million in 2006 to 27.8 million in 2031.

- **The rate of growth varies around the country.** Geographically, some areas of the UK are expected to grow significantly faster than others, while some, already have, or will have, declining populations. Where people live has major environmental consequences, with some parts of the UK (e.g. south-east England) experiencing considerable environmental pressures.

### Environmental impacts

The relationship between demographic change and the environment is complex, because there are many other confounding factors in play. It also seems that, with a few notable exceptions, very few organisations have thought seriously about the environmental implications of demographic change in the UK. As a result, we received little empirical evidence from which to draw firm conclusions about the environmental impacts of demographic change.

It is useful to think about environmental impact as resulting from the effect of three factors – the number of people present, their consumption (which is often discussed in terms of ‘affluence’), and the environmental impact of each unit of consumption (which can be reduced by improved technology). Over the last 40 years, the UK population has grown by about 10%, whilst national income has more than doubled. During that period, there have been welcome improvements in many environmental indicators despite the growth in population and consumption. This has required a significant amount of investment in better technology, driven by tighter regulations, but there are still parts of the country where air or water quality (for example) do not meet legal standards. Targets such as those to reduce greenhouse gas emissions by 80% or to achieve zero waste sent to landfill will be hard to reach.

Increasing lifespan may have environmental implications, for example, people over 65 years old use on average more energy to heat their homes than younger people (and therefore have a greater carbon footprint for energy use), but also have a lower carbon footprint on average for travel. An ageing population means more health care use and on current trends the use of pharmaceuticals will double by 2052, with the largest increase in consumption by older people. We do not currently know enough to judge the risks posed by pharmaceuticals entering the environment.

The trend to smaller households may mean that resources are used less efficiently, since the amount of energy and water consumed and the amount of waste generated per head is smaller in larger households.
Environmental constraints, planning, and incentives

Demographic trends are not uniform across the UK. Some places are experiencing above average growth while others are experiencing decline. In some areas the need for new housing and other infrastructure is putting pressure on environmental resources such as water supply, air and water quality, nature, and on facilities for waste disposal. Indeed, environmental constraints may make it difficult to accommodate growth in some parts of the UK (e.g. south-east England).

Many are concerned that growth in the south-east of England is running up against environmental ‘limits’. Whilst the word ‘limit’ suggested an absolute and immovable barrier to growth, the term ‘environmental constraints’ better expresses the political judgement required to determine the type of environment a community is prepared to accept, and what they are prepared to pay for it.

Although it appears that there are large areas of land which could be developed to accommodate growth in the numbers of people, households and associated infrastructure, environmental constraints do exist, and addressing these is often likely to be costly, sometimes in environmental as well as economic terms.

For many years governments have adopted policies to seek to direct development to particular locations or regions. Analysis suggests that action to alter the regional distribution of population is feasible and has had substantial impacts. Specifically, policies have at times maintained higher populations in economically less-favoured regions than would otherwise have been the case. It should be possible to ease the population pressure in areas in which the environment is under strain by promoting regional economic development in other areas of the UK – though such a policy would be expensive. But the costs of a regional economic policy must be compared with the cost of accommodating the environmental consequences of a continued concentration of population in certain parts of the UK, most notably the south-east of England and more research is needed to understand the relative costs of these alternatives.

The spatial planning system offers the most direct way to influence how and where development takes place. The system in England is undergoing major reform, with the intention of allowing communities greater scope to shape their neighbourhoods. It is important that in the reformed system:

- There are adequate mechanisms to ensure that the environmental implications of demographic change are assessed;
- There are mechanisms for ensuring that issues which cannot be addressed at a purely local level, including national level priorities such as carbon emission reductions, are taken properly into account;
- Local decision-makers can be held to account in respect of decisions that have effects beyond their constituency; and
- The assessment and appraisal techniques used to identify environmental impacts as part of the planning system are used intelligently.
What should be done?

Some argue that it is possible to set a figure for a sustainable population for the UK, based on environmental limits, and that it is in the national interest to stabilise the available population (by non-coercive means) as soon as possible. It is true that there are few environmental problems which are made easier by having a larger population. But an examination of the available population projections shows that, even if it were possible or desirable to reduce the birth rate (which is currently below replacement level), halt the trend for people to live longer, or achieve zero net migration, there would be little significant reduction in the population over the next forty years. Indeed the total population would continue to grow for many decades even if birth rates fell dramatically and with immediate effect.

The environmental impact of the population depends not only on the number of people, but to a much greater extent on the amount they consume and on the impact associated with each unit of consumption. The amount of water used, the amount of waste generated and the amount people travel have a very significant effect on the environmental impact associated with each person. As people have become steadily more affluent, their consumption has tended to increase substantially. We need an urgent step change in the Government’s efforts to increase resource use efficiency in order to decouple consumption from environmental impacts.

Equally, the increase in the total population is only one aspect of demographic change. Policy-makers and service providers need to take account of aspects such as the longer lifespans and the growing number of older people, the patterns of regional migration, and the projected increase in the number of households. Indeed, the differential pressures in different parts of the UK, down to a very local level, are more significant than the growth of the total population.

Addressing these challenges will not be easy – it will require political will, societal change and technological innovations. Above all it will require sustained efforts to understand, communicate and implement the measures needed to reduce the environmental impacts of the population of the UK.

About the study

During the course of the study the Commission conducted two evidence-gathering stages receiving over 50 written submissions. It also invited individuals and organisations to meetings to present their work, held two workshops, conducted evidence-gathering visits to Lincolnshire, the Highlands of Scotland, Wales and Newcastle, and commissioned two written studies. Reports of all these activities can be found on the RCEP website.

As well as the general conclusions described in this note, the Commission made a number of specific recommendations to Government and others. These can be found in the full report.

For more information

The full report ‘Demographic Change and the Environment’ can be downloaded from the RCEP website (www.rcep.org.uk) along with background information on the study.

Following the closure of the RCEP in March 2011, its website will close later in 2011. The report will be accessible via the Defra website: www.defra.gov.uk. The report, and all previous reports from the RCEP, will also be available from the website of The National Archives: www.nationalarchives.gov.uk/webarchive/inquiries-and-commissions.htm.

The report can also be purchased from TSO (£27.25, ISBN 9780101800129).