Editorial

People and the Planet: The Role of Global Population in Sustainable Development

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A major new study looking at the implications of the changes in global population is being launched by the UK's Royal Society with an expected conclusion in early 2012. A debate has raged over the importance of population in relation to sustainable development over the past 40 years, when concerns were raised about the impacts of growing populations. As the demographic drivers of fertility and mortality, moderated by the third, migration, differentially operate across the regions of the world, so the balance of population numbers and population structures shifts. Europe's population, currently 732 million, is predicted to peak within 5 years at 734 million, and then steadily decline to below 700 million by 2045. This is well behind China, 1.35 billion and India, 1.2 billion. As a consequence Europe's share of the increasing global population will halve from over 20% in 1950 to around 10% by 2020. On the other hand, the population of Africa comprised 9 per cent of world population in 1950, at 227 million, and is expected to rise to 16 per cent by 2020, with a near 1.3 billion.

The concern over the increasing global population, which has grown since 1993 from 5.5 billion to currently 6.8 billion, has thus to an extent been replaced by interest in the differential impact of growth and decline in different regions, and the implications that this will have for development. Issues of diminishing and ageing populations have thus become more prevalent and significant in certain parts of the world. Population ageing may be measured in a number of ways. Structural ageing refers to an upward shift in the percentage of older populations, measured variously as 60+ and 65+. In terms of structural ageing, Europe dominates the figures. In 1950 just 8% of the world's population was aged over 60. This rose by a mere 2% by 2000, but will double to 21% by 2050. If we take the proportion of the population aged 65 and over in the world's oldest countries at the turn of the 20th century, with the exception of Japan, the top 20 all are European. Globally, Italy has the highest proportion of persons aged over 65, primarily a consequence of its low fertility

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levels. In the EU 15, Italy has the highest proportion of older people (18.2 per cent) while Ireland has the lowest (11.2 per cent). Other Developed Economies such as Australia, Canada and the United States are the lower end of this scale (between 12 and 13 per cent).

The growth rate of those over 80 is of equal significance. This is the fastest growing age group in the world, with annual growth rate of 3.8 per cent. The projected annual growth rate of this age group is 3.9 per cent until 2010, remaining above 3 per cent until at least 2020. By the year 2050, 20 per cent of persons aged 60 and over are predicted to be in this group. Currently 40 per cent of the over 80s live in Asia, some 16 per cent in China, 30 per cent are in Europe and 13 per cent in the US. Japan is predicted to have an outstanding 40 per cent of its older population aged 80 or over by 2030.

The speed at which this age structural transition is occurring is striking, especially in the Asia-Pacific region, with the less developed and transitional countries facing extreme rapidity of ageing. Whilst it took around 50–70 years for most of the countries in the Developed World to move from 7% to 14% of their population over 65. France, for example, took 115 years to move from 7 per cent to 14 per cent of its population over 65, Sweden 85 years. Japan achieved this in just 26. It is this rapidity of demographic ageing which will be one of the greatest institutional challenges for less developed and transitional economies.

A society's median age, that is the age that divides the population into numerically equal parts of younger and older people, provides another measure. All the countries in the Developed World have median ages over age 32. Median ages, however, will increase markedly in some countries over the next quarter century. Italy, Brazil, China, Mexico and Thailand, for example, will all experience more than a 10 year increase in median ages. Italy is currently predicted to have the highest median age at 52. Japan will reach 50, with most other developed countries, and some Asian, attaining median ages over 40. Singapore, Hong Kong and Korea are already over 35.

A further way to consider population ageing is the growth in absolute numbers of older dependents. It is predicted that by 2050 the global number aged over 60 will triple to reach 2 billion. The numbers of those aged 80 and above will show an even greater increase, rising from 69 million to an incredible 379 million by 2050. Currently two thirds live in Less Developed Countries, with the absolute numbers of older people in these regions doubling to reach some 900 million within 25 years. There are 40 million Africans over 60; 41 million live in Latin America and the Caribbean; and already 600 million live in the Asian/Pacific region. By this definition the Asian/Pacific region, is already the oldest world region and by 2050 will alone hold two-thirds of the world's 2 billion elders. Currently the largest country based population of older people in the developed world is in the US, with 35 million people over 65, followed by Japan with nearly 23 million, and Germany with around 13 million. However, Russia and Central Europe have a different current and predicted demography to the rest of Europe and Asia. Russia's population is projected to fall from 144 million to 104 million in 2050, and Ukraine's from 50 million to 30 million over the same period.

The Royal Society has thus decided that it is time for a comprehensive review of the science, looking at the extent to which population will be a significant variable in

rates of progress towards sustainable economic and social development over the next 30 years and beyond. This group will explore not only the extent to which population is a significant factor in the international challenge of securing global sustainable development, but also consider wider issues including culture, gender, economics and law. The study will be completed by early 2012, when the world's population is expected to exceed 7 billion. The report will be aimed at national and international policymakers, donors and funders, the media, scientific bodies and NGOs. It will be a high profile contribution to the 2012 'Rio+20' UN Earth Summit and also mark the 40th anniversary of '*The Limits to Growth*'.

The Royal Society is seeking as wide a range of informed views as possible to assist our study, from both a national and an international audience. It welcomes submissions from academics of all disciplines, policymakers, non-governmental organisations and any other interested parties to inform our study. Organisations and individuals are invited to contribute to the study by responding to the call for evidence.

We invite feedback on the following questions. Please respond to as many or as few questions as you like and, where possible, supply references to (and copies of) published material to support your answers. We would also welcome illustrative examples where possible. *Responses are likely to have the greatest impact if they are restricted to four pages plus appendices.*

What scientific evidence is available to show how fertility, mortality, migration, ageing and urbanisation will affect or be affected by population levels and rates of change, at both regional and global levels, over the next 40 years and beyond?

How fertility, mortality, migration, ageing and urbanisation are influenced by and influence environments, economies, societies and cultures?

What are the strengths and weaknesses of different population modelling methodologies?

What are the key interconnections among population change, environments, economies, societies and cultures? How do these relate to any of the examples listed in the second bullet point of the terms of reference above?

What are the key linkages among population, technology and consumption.

What are the best (or worst) examples of how policy has been effective in managing population changes?

What other issues should our study addresses?

The deadline for submissions is 1 October 2010. However the Royal Society is happy to consider further evidence after this deadline.

If you would like to submit your views but are unable to meet the deadline, or if you have any questions, please contact us as above or on +44(0)20 7451 2525.

Evidence can be submitted electronically (preferred format) to Marie Rumsby at marie.rumsby@royalsociety.org or by post to: Marie Rumsby, Science Policy Centre, The Royal Society, 6-9 Carlton House Terrace, London SW1Y 5AG, UK or by Fax: +44(0)20 7451 2692.