

Do Randers's forecasts justify optimism?

On 8 September Steve McCarthy and 10 other members of the EFG met to consider Jørgen Randers's new book, *2052: A Global Forecast for the Next Forty Years*. It's a second follow-up to the original report, *The Limits to Growth*, which he co-authored for the Club of Rome in 1972; a sequel to the second report *Beyond the Limits*, which came out in 1992. The new book looks forward 40 years to 2052 and tries to predict roughly what life will be like then.

The approach uses computer models to focus on various trends, combining them to obtain an overall picture of their likely interactive effect if they don't change radically, i.e. he focuses on what will probably happen, rather than what we think should happen. He aims to provoke a response, since democracy, with its short-term vision, will only react when it must. Randers thus predicts the following developments:

- *Population* will grow worldwide to 8.2 billion by about 2040. The birth rate will show a steady decline, as a result both of urbanisation and improved female education. The ageing trend will continue. This forecast is somewhat below others – for example that of the UN.
- The rate of growth of *labour productivity* will decline, as the shift away from manufacturing to services and 'care' occupations continues and the scope for productivity increases diminishes.
- *Global Gross domestic product (GDP)* will grow much more slowly than we have come to expect. He forecasts around 1% a year compared with 3.5% over the last forty years; Thomas Piketty and other economists make similar forecasts. An increasing share of GDP (from about 24% up to 36%) will be for investment rather than consumption.
- *Energy use and CO₂ emissions* will continue to grow until 2030-40, despite increasing use of cheaper renewable energies, resulting in a global temperature rise of 2°, together with a 36 cm sea-level rise. After 2052, however, even though energy use and annual CO₂ emissions will be in decline, there is likely to be environmental collapse by the end of the century.
- For the OECD countries (excluding the USA) specifically; he predicts that average per capita *consumption* in 2052 will be at about the same level as it is now – hence very little change in the average *standard of living*. By 2050 he foresees a rapid decline in energy use, with renewables accounting for about 50%. Social problems are likely unless *rising inequality* is addressed.

This does not seem to provide grounds for long-term optimism. However, Randers's model shows that a slight change in one area can produce significant shifts elsewhere. As EFG members pointed out in the discussion, factors such as a rapid reduction in the cost of renewables, the shift from oil to gas and investment in greater efficiency could cut CO₂ emissions. But although renewables are getting cheaper they still require a considerable area of land. There are some factors, such as biodiversity loss, which do not feature significantly in Randers's forecasts.

Isabel Page reported sad news from the Mexican turtle project where she volunteers regularly – commercial interests have prevailed, and the turtle sanctuary area is about to be developed for mass tourism.

We hope that the next meeting on 29 September may point to some optimistic developments – Simon Norcross will talk about technological innovations.