



# Unseasonally Adjusted Figures

England has now had five 'warmer than average' Decembers in a row. In January this year, the Argentinian economy teetered on the brink of collapse as drought and heatwave caused demand for electricity for air-conditioning to soar while reservoirs dried up and hydro-electric power stations ground to a halt. In 1988, severe drought in the US Midwest focused attention

on the fact that the 1980s had become the hottest decade, in terms of global average temperatures, ever recorded - although, admittedly, the records only go back a little over 100 years. Is this all 'just one (or several) of those things'? Or is it the infamous greenhouse effect at work? After years of fence-sitting, the climate experts are now beginning to stand up and be counted. In testimony to the

US Congress last summer, researchers such as Jim Hansen, of Nasa, said that we can indeed lay the blame at the door of the greenhouse effect, a warming of the world caused by human activities. And on this side of the Atlantic Mick Kelly, of the University of East Anglia, testified to the same effect, on behalf of Friends Of The Earth, to a Commons select committee. By the autumn, Margaret Thatcher was telling the Royal Society that the greenhouse effect is a major cause for concern, and since then many government spokespeople have hurried to echo her sentiments - although precisely *no* action to do anything about the problem seems to be planned.

Why should any action be contemplated? Wouldn't a warmer world be a nicer place to live? Maybe - if you live in Britain. The news is not so good in southern Spain, Greece, Ethiopia, Argentina or even the heartland of the United States. The main reasons why climate has become a political issue are that the world is likely to get too hot, too quickly, and that the transition into the greenhouse state will be accompanied by extreme weather events of all kinds.

The world is warming because of a build-up of gases in the atmosphere released by human activities. Carbon dioxide, from burning fossil fuel, represents half the problem. The rest is due to compounds such as the CFCs that are also responsible for the destruction of the ozone layer, methane from agricultural activities, and nitrous oxide from vehicle exhausts. So far, the global mean warming since the 19th century amounts to just 0.5° Celsius. But projections of the continuing build-up of these gases, which trap heat that would otherwise escape into space, point to a further warming of 0.5°C by the year 2000, and a warming of perhaps 3°C by 2030. The world will then be warmer than at any time for at least 120,000 years. South-east England will have a climate like

that of southern France today; the south of France will resemble North Africa; southern Spain will be a desert.

As the world warms, sea level will rise at a rate of about a centimetre a decade. It sounds small - but it will mean that the Thames Barrier will have to be modified before the middle of next century to prevent catastrophic flooding of London. Researchers at the University of East Anglia predicted almost 10 years ago that during the early stages of the warming changes in the circulation patterns of the atmosphere will bring more frequent 'blocking high' systems over England. That means more hot summers, but it also means more frequent severe blizzards in winter. Three recent severe winters in five amply bear out that prediction.

As the oceans warm, hurricanes, which are driven by warm oceanic water, will become more common and more severe. In the 1970s, there was an average of nine hurricanes per year. In the 1990s and beyond, we can expect at least twice as many, and some of these will be more severe than anything experienced in recent decades. The catastrophe that hit Nicaragua late in 1988 was not an isolated incident, but a sign of things to come.

But some people may benefit from the greenhouse effect. As climate zones in the northern hemisphere shift northward, and (eventually) winters become less severe, the Soviet Union may be able to produce far more grain than it does today, just at the time when the United States experiences a return to dustbowl conditions. For decades, a feature of the world food market has been that the US is a major exporter of grain, while the USSR has been one of its best customers. It would be interesting, to say the least, if the roles were reversed. Rest assured, you haven't heard the last of the greenhouse effect. •

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