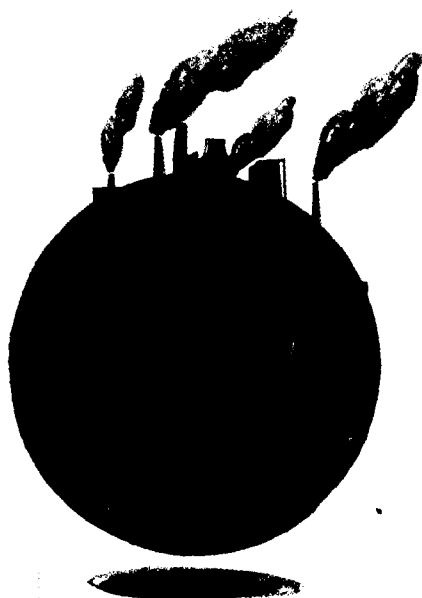


Why our economy is killing the planet and what we can do about it



THE graphs climbing across these pages are a stark reminder of the crisis facing our planet. Consumption of resources is rising rapidly, biodiversity is plummeting and just about every measure shows humans affecting Earth on a vast scale. Most of us accept the need for a more sustainable way to live, by reducing carbon emissions, developing renewable technology and increasing energy efficiency.

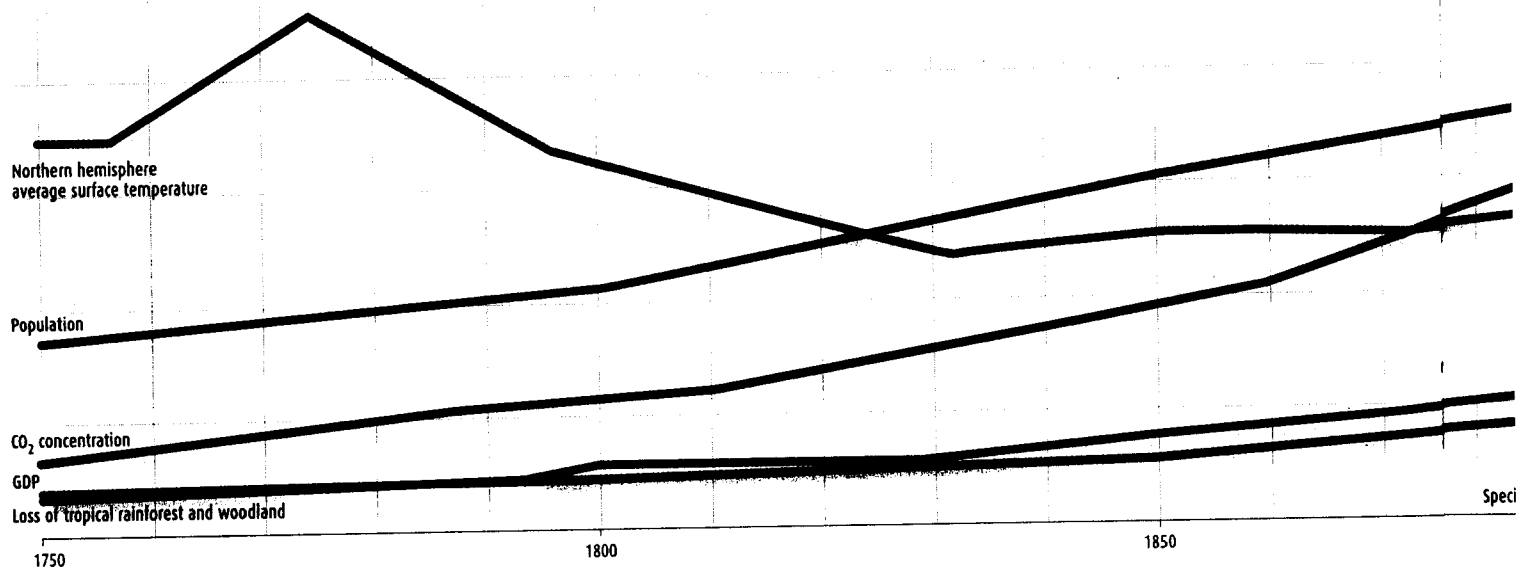
But are these efforts to save the planet doomed? A growing band of experts are looking at figures like these and arguing that personal carbon virtue and collective environmentalism are futile as long as our economic system is built on the assumption of growth. The science tells us that if we are serious about saving Earth, we must reshape our economy.

This, of course, is economic heresy. Growth to most economists is as essential as the air we breathe: it is, they claim, the only force capable of lifting the poor out of poverty, feeding the

world's growing population, meeting the costs of rising public spending and stimulating technological development – not to mention funding increasingly expensive lifestyles. They see no limits to that growth, ever.

In recent weeks it has become clear just how terrified governments are of anything that threatens growth, as they pour billions of public money into a failing financial system. Amid the confusion, any challenge to the growth dogma needs to be looked at very carefully. This one is built on a long-standing question: how do we square Earth's finite resources with the fact that as the economy grows, the amount of natural resources needed to sustain that activity must grow too? It has taken all of human history for the economy to reach its current size. On current form it will take just two decades to double.

In this special issue, *New Scientist* brings together key thinkers from politics, economics



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and philosophy who profoundly disagree with the growth dogma but agree with the scientists monitoring our fragile biosphere. The father of ecological economics, Herman Daly, explains why our economy is blind to the environmental costs of growth (page 46), while Tim Jackson, adviser to the UK government on sustainable development, crunches numbers to show that technological fixes won't compensate for the hair-raising speed at which the economy is expanding (page 42).

Gus Speth, one-time environment adviser to President Jimmy Carter, explains why after four decades working at the highest levels of US policy-making he believes green values have no chance against today's capitalism (page 48), followed by Susan George, a leading thinker of the political left, who argues that only a global government-led effort can shift the destructive course we are on (page 50).

For Andrew Simms, policy director of the London-based New Economics Foundation, it is crucial to demolish one of the main justifications for unbridled growth: that it can pull the poor out of poverty (page 49). And the broadcaster and activist David Suzuki explains how he inspires business leaders and politicians to change their thinking (page 44).

Just what a truly sustainable economy would look like is explored on page 52, when *New Scientist* uses Daly's blueprint to imagine life in a society that doesn't use up resources faster than the world can replace them. Expect tough decisions on wealth, tax, jobs and birth rates. But as Daly says, shifting from growth to development doesn't have to mean freezing in the dark under communist tyranny.

Technological innovation would

give us more and more from the resources we have, and as philosopher Kate Soper argues on page 53, curbing our addiction to work and profits would in many ways improve our lives.

It is a vision John Stuart Mill, one of the founders of classical economics, would have approved of. In his *Principles of Political Economy* published in 1848, he predicted that once the work of economic growth was done, a "stationary" economy would emerge in which we could focus on human improvement: "There would be as much scope as ever for all kinds of mental culture, and moral and social progress... for improving the art of living and much more likelihood of it being improved, when minds cease to be engrossed by the art of getting on."

Today's economists dismiss such ideas as naive and utopian, but with financial markets crashing, food prices spiralling, the world warming and peak oil approaching (or passed), they are becoming harder than ever to ignore. ●

"Economists see no limits to growth - ever"

ANDEW SIMMS



For full data see www.newscientist.com/opinion

Beyond growth

We can rely on renewable technologies to help us avert climate change without sacrifices to our lifestyles, right? Not according to sustainable development adviser **Tim Jackson**, who reckons our leaders are just too chicken to tell us the truth

What politicians dare not say

■ SCRATCH the surface of free-market capitalism and you discover something close to visceral fear. Recent events provide a good example: the US treasury's extraordinary \$800 billion rescue package was an enormous comfort blanket designed to restore confidence in the ailing financial markets. By forcing the taxpayer to pick up the "toxic debts" that plunged the system into crisis, it aims to protect our ability to go on behaving similarly in the future. This is a short-term and deeply regressive solution, but economic growth must be protected at all costs.

As economics commissioner on the UK's Sustainable Development Commission, I found this response depressingly familiar. At the launch last year of our "Redefining Prosperity" project (which attempts to instil some environmental and social caution into the relentless pursuit of economic growth), a UK treasury official stood up and accused my colleagues and I of wanting to "go back and live in caves". After a recent meeting convened to explore how the UK treasury's financial policies might be made more sustainable,

Profile

Tim Jackson is professor of sustainable development at the University of Surrey, UK. His research focuses on understanding the social, psychological and structural dimensions of sustainable living. He is also a member of the Sustainable Development Commission, which advises the UK government.


a high-ranking official was heard to mutter: "Well, that is all very interesting, perhaps now we can get back to the real job of growing the economy."

The message from all this is clear: any alternative to growth remains unthinkable, even 40 years after the American ecologists Paul Ehrlich and John Holdren made some blindingly obvious points about the arithmetic of relentless consumption.

The Ehrlich equation, $I = PAT$, says simply that the impact (I) of human activity on the planet is the product of three factors: the size of the population (P), its level of affluence (A) expressed as income per person, and a technology factor (T), which is a measure of the impact on the planet associated with each dollar we spend.

Take climate change, for example. The global population is just under 7 billion and the average level of affluence is around \$8000 per person. The T factor is just over 0.5 tonnes of carbon dioxide per thousand dollars of GDP – in other words, every \$1000 worth of goods and services produced using today's technology releases 0.5 tonnes of CO_2 into the atmosphere. So today's global CO_2 emissions work out at $7 \text{ billion} \times 8 \times 0.5 = 28 \text{ billion tonnes per year}$.

The Intergovernmental Panel on Climate Change (IPCC) has stated that to stabilise greenhouse gas levels in the atmosphere at a reasonably safe 450 parts per million, we need to reduce annual global CO_2 emissions to less than 5 billion tonnes by 2050. With a global



Artist Barbara Kruger gets to the root of the problem in her 1987 artwork

population of 9 billion thought inevitable by the middle of this century, that works out at an average carbon footprint of less than 0.6 tonnes per person – considerably lower than in India today. The conventional view is that we will achieve this by increasing energy efficiency and developing green technology without economic growth taking a serious hit. Can this really work?

With today's global income, achieving the necessary carbon footprint would mean getting the T factor for CO_2 down to 0.1 tonnes of CO_2 per thousand US dollars – a fivefold improvement. While that is no walk in the park, it is probably doable with state-of-the-art technology and a robust policy commitment. There is one big thing missing from this picture, however: economic growth. Factor



**I shop
therefore
I am**

it in, and the idea that technological ingenuity can save us from climate disaster looks an awful lot more challenging.

First, let us suppose that the world economy carries on as usual. GDP per capita will grow at a steady 2 or 3 per cent per year in developed countries, while the rest of the world tries to catch up – China and India leaping ahead at 5 to 10 per cent per year, at least for a while, with Africa languishing in the doldrums for decades to come. In this (deeply inequitable) world, to meet the IPCC target we would have to push the carbon content of consumption down to less than 0.03 tonnes for every thousand US dollars spent – a daunting 11-fold reduction on the current western European average.

Now, let's suppose we are serious about

eradicating global poverty. Imagine a world whose 9 billion people can all aspire to a level of income compatible with a 2.5 per cent growth in European income between now and 2050. In this scenario, the carbon content of economic output must be reduced to just 2 per cent of the best currently achieved anywhere in the European Union.

In short, if we insist on growing the economy endlessly, then we will have to reduce the carbon intensity of our spending to a tiny fraction of what it is now. If growth is to continue beyond 2050, so must improvements in efficiency. Growth at 2.5 per cent per year from 2050 to the end of the century would more than triple the global economy beyond the 2050 level, requiring almost complete decarbonisation of every last dollar.

The potential for technological improvements, renewable energy, carbon sequestration and, ultimately perhaps, a hydrogen-based economy has not been exhausted. But what politicians will not admit is that we have no idea if such a radical transformation is even possible, or if so what it would look like. Where will the investment and resources come from? Where will the wastes and the emissions go? What might it feel like to live in a world with 10 times as much economic activity as we have today?

Instead, they bombard us with adverts cajoling us to insulate our homes, turn down our thermostats, drive a little less, walk a little more. The one piece of advice you will not see on a government list is "buy less stuff". Buying an energy-efficient TV is to be

"A UK treasury official accused me of wanting to go back to cave living"

applauded; not buying one at all is a crime against society. Agreeing reluctantly to advertising standards is the sign of a mature society; banning advertising altogether (even to children) is condemned as "culture jamming". Consuming less may be the single biggest thing you can do to save carbon emissions, and yet no one dares to mention it. Because if we did, it would threaten economic growth, the very thing that is causing the problem in the first place.

Visceral fear is not without foundation. If we do not go out shopping, then factories stop producing, and if factories stop producing then people get laid off. If people get laid off, then they do not have any money. And if they don't have any money they cannot go shopping. A falling economy has no money in the public purse and no way to service public debt. It struggles to maintain competitiveness and it puts people's jobs at risk. A government that fails to respond appropriately will soon find itself out of office.

This is the logic of free-market capitalism: the economy must grow continuously or face an unpalatable collapse. With the environmental situation reaching crisis point, however, it is time to stop pretending that mindlessly chasing economic growth is compatible with sustainability. We need something more robust than a comfort blanket to protect us from the damage we are wreaking on the planet. Figuring out an alternative to this doomed model is now a priority before a global recession, an unstable climate, or a combination of the two forces itself upon us. ●