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- IDENTITÄT UND REGIONALENTWICKLUNG
- THE IDEA OF CLIMATE CHANGE
- BIODIVERSITY

A Radical View on Climate Economics

This book emphasizes the urgency for big steps in climate policy, stressing the differential effects of climate change on rich and poor people. The solutions the authors propose are unconventional and somewhat biased as they do not give full credit to other, more conservative, approaches. In particular, they suggest massive changes in agricultural practices and reforestation to achieve carbon neutrality.

Carl Christian von Weizsäcker

You may place books on climate economics on a line from left to right according to their general viewpoints. Take the *Stern Review* (Stern 2006) as the middle of that line. Then you may have books to the right such as Nordhaus' *A Question of Balance* (2008) or Sinn's *Das grüne Paradoxon. Plädoyer für eine illusionsfreie Klimapolitik* (2008), or, even further to the right, Lombog's *Cool It* (2007). To the left are books like Ackerman's *Can We Afford the Future? Economics for a Warming World* (2009). On this line, FitzRoy and Papyrakis definitely are quite a bit to the left of the *Stern Review*.

The book gives an introduction to the economics of climate change; as an introduction it uses only elementary forms of argument. It is well written and clearly has benefited from the authors' experience in teaching climate economics courses to beginning students. But it is somewhat partisan in its style. Opinions with which the authors concur are quoted extensively and in a matter-of-fact way; opinions different from those of the authors are almost always attributed to a "lobby", like the "coal lobby" or the "nuclear lobby". Is there no wind power lobby, no photovoltaic lobby? After

all, a lot of money can be made from government subsidies for these technologies.

Ethical Considerations

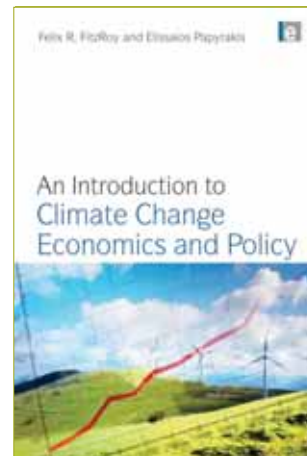
On ethical grounds, the two economists are critical of the cost-benefit approach that is taken, for example, by the *Stern Review* or by Nordhaus and many other economists. This approach is considering the costs of climate change and of climate change mitigation only, ignoring distribution effects. And, the authors argue: "(...) trying to put a monetary value on the lives of large numbers of people in future generations (who cannot participate in these decisions), and then trying to calculate their present value in order to decide how much to spend (or not to spend) on saving their lives, is both nonsensical and thoroughly unethical" (p. 140). Alternatively, the authors propose the principle of John Rawls (1971): maximise the well-being of the poorest, thus implying that saving the lives of the poorest must have highest priority for climate policy.

Empirical Considerations and a Proposal

The authors emphasise an empirical point that is connected with the above criticism of the cost-benefit analysis. Contrary to the usual assumption that climate change will cause most damage in the more distant future, they see reasons to fear that much earlier, perhaps in two or three decades, the change in climate, especially a decrease in rainfall, will have disastrous effects on agricultural productivity. This will generate changes in relative prices to the disadvan-

tage of the poor and thereby lead to mass starvation, especially in non-industrialised countries. The current official target of reducing CO₂ emissions in rich countries by 80 percent by 2050 is therefore, according to the authors, completely inadequate.

The measures the authors suggest to combat climate change correspond with the conventional line of "green" thinking: save energy by replacing the car with a bicycle, by insulating homes, and by other measures. And substitute fossil fuels with renewable energies such as wind power and solar power. The specific idea which stands out is related to agriculture. The authors propose: "the (...) innovation that would have massive co-benefits as well as substantial abatement effects is regenerative, low tillage organic agriculture, or conservation agriculture. (...) Soils under industrial agriculture are everywhere suffering progressive erosion and becoming net carbon emitters. This process can be reversed if traditional ploughing is abandoned (...) and replaced by cover-cropping with a legume that fertilizes the soil by fixing nitrogen, prevents erosion (...), retains water and smothers weeds. (...) At the same time, organic material from cover crops accumulates, and soils will thus sequester carbon, and become net 'sinks' for many decades in the future" (p. 141). The authors reckon that such changes – together with a transition to renewable energy and massive reforestation – would contribute to a world with negative CO₂ emissions (from human activities) in two to three decades.



FitzRoy, F. R., E. Papyrakis. 2010. *An introduction to climate change. Economics and policy*. London: Earthscan. 214 pp., 25.99 EUR, ISBN 978-1-844-07809-7

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Comment on the Ethics of Climate Policy

In my evaluation I shall not deal with matters of science and technology, but only with the economics of climate change.

I agree that the precautionary principle should be applied – in combination with the Rawls criterion. The precautionary principle may mean that in cases of scientific doubt one has to assume the more pessimistic hypothesis concerning global warming to be true. Authors such as Lombog put the question of costs and benefits differently, as the world may have several difficult problems to solve. For example,

The promotion of renewable energy by rich countries stimulates worldwide economic growth.

assume as a pessimistic hypothesis that democracy and human rights only survive if there were economic growth in terms of GDP¹ per capita. Is it then appropriate – as the precautionary principle would suggest – to pursue a climate abatement policy which eliminates economic growth?

A Question of Implementation

These considerations lead to more mundane questions on implementation. The authors argue against new nuclear power plants, because it takes ten years from the decision to build to the first supply of electricity. In their pessimistic climate scenario, the contribution of nuclear plants to a reduction of CO₂ emissions is therefore too late. At the same time, they claim that their policy of reforming world agriculture toward “a low tillage organic” mode of operation can be completed within 20 years. My personal understanding of the precautionary principle would cause me to hesitate to make such an optimistic assumption about the speed of reform, because the problem we face in terms of climate policy is mainly one of social inertia.

The authors decry the influence of “lobbies” which defend vested interests. Yet, our wealth – as generated in the last 200 years in the OECD² world – depends on the functioning of the division of labour in producing goods and in producing sci-

entific research results. And any specialist is the owner of some special skill. Thus, we are all owners of vested interests. This is a social law as firm as any law in science. There is then a substantial bias in policy advice, if vested interests are considered impediments for alternative policies, ignoring the vested interest impediments for one’s own policy line. The fact that the gestation period of nuclear power plants may be ten years is due to procedures of law and consensus building which allow any kind of vested interests to make themselves heard. In China, the procedures are

different, so that gestation periods are substantially shorter than ten years. Should we therefore use China as a political role model? What is the gestation period of a strategy of worldwide “low tillage organic agriculture”? Is a ten-year gestation period for nuclear energy indeed unacceptable once we acknowledge the likelihood of a substantially higher gestation period for the method proposed by the authors?

CCS – Friend or Foe?

The authors are very critical of “clean coal” (CCS³) because of its high cost relative to renewable energies. I am not convinced that their reasoning is empirically correct; but for the purpose of argument I assume it is. The main cost component of CCS is the larger amount of coal needed for a kilowatt-hour of electricity. It appears that the authors are not aware of the “green paradox” announced by Hans Werner Sinn. He says (and I agree): saving petroleum, natural gas and coal will dampen their world market price, because suppliers want to sell these materials anyway. Thus, an increased supply of wind or solar power in, say, Germany, makes it more attractive to use fossil fuels elsewhere, say, in India, because they are cheaper now. It is true that in the long run the lower price will also reduce the supply, but it is certainly true that, taking the price effect on fossil fuels into

account, the climate impact of renewables (and nuclear energy) is substantially reduced. The “Sinn effect” has the opposite sign in the case of CCS, because in any given country more coal is used up with CCS than without, whereas less coal is used with wind or solar energy. So with CCS the world market price of coal goes up. Other users of coal will therefore be discouraged to use coal. CCS thus may be the most effective way to reduce CO₂ emissions.

As an aside: in all likelihood the heavy subsidies on wind power and photovoltaic power will not reduce the worldwide use of fossil fuels in the medium term, for example for the coming 20 years or so. The authors themselves believe that the International Energy Agency overestimates the availability of petroleum and gas. So they might agree to the forecast of a supply crunch in the oil and gas markets, if worldwide economic growth comes back to the pre-crisis levels of four to five percent per annum. But then more wind and solar energy simply mean that a higher world GDP is compatible with the available supply of oil and gas. The promotion of renewable energy by rich countries therefore stimulates worldwide economic growth. It does not dampen CO₂ emissions at all in the medium term. But then, world economic growth may be a good thing for the poorest in the world.

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1 GDP: gross domestic product

2 OECD: Organisation for Economic Co-operation and Development

3 CCS: carbon dioxide capture and storage