

From Environmental Space to the Ecological Debt

# The Ecological Debt is increasing all the time

**Die Auswirkungen auf die Länder des Südens gehören zu den stark diskutierten Aspekten eines Zukunftsfähigen Deutschlands. Nach Meinung des Autors ist die Botschaft dieser Studie an diese Länder ungenügend: Es werden weder die „ökologischen Schulden“ des Nordens gegenüber dem Süden behandelt noch die „Umwelteinstellungen der Armen“ berücksichtigt. Im Gegenteil, die Studie übernehme unkritisch die These von der postmateriellen Werthaltung.**

**T**hat wealth provides the means to correct environmental damage, that wealthy people are environmentally more conscious because they can afford to care for quality of life issues, and that poverty is one main cause of environmental degradation, are the politically correct beliefs. However, for many ecologists from the South, this constellation of beliefs provokes outrage, even when the speaker comes from the South such as the Finance Minister of India Dr. Manmohan Singh, who justified programmes of trade and market liberalization on the grounds that they would generate resources for cleaning up the environment (1). In the report „Zukunftsfähiges Deutschland“ which comes from the North, we find a realistic description of the prospects for decreasing the „environmental space“ (Umweltraum) used by the German economy, which is a Raubwirtschaft which imports cheap natural resources (such as oil), and exports residues (such as CO<sub>2</sub>). This report comes in the steps of the Friends of the Earth's report on the Netherlands of 1993 (which, using appropriate assumptions, showed that the Netherlands uses an environmental space which is about 15 times larger than her own territory), and also in the steps of the report by the Wuppertal Institute, Towards a Sustainable Europe (Febr. 1995) (2). Another physical measure of environmental unsustainability (not used in Zukunftsfähiges Deutschland) is the human appropriation of net primary production (3) which, if calculated for different regions and countries of the world, would show how some of them live beyond their own biomass production, and some of them are still much below their own production. In an urban context, Rees and

*By Juan Martinez-Alier*

Wackernagel (4) have developed the notion of the ecological footprint (implicit already in the „organic“ urban planning of Patrick Geddes and Lewis Mumford). Another good idea is the contrast between „ecosystem people“ and „ecological trespassers“ (used by Gadgil and Guha with reference to India, but which could be applied to the world)

## ► Don't get frantic and aggressive

The occupation of an environmental space larger than one own's territory, gives rise to an Ecological Debt (5). If increasing wealth means – despite efforts at increasing efficiency in resource use – more use of undervalued natural resources from other territories, and also an increased production of residues, then there is an increasing Ecological Debt (which is admittedly difficult to quantify in money terms). But the Ecological Debt is not a theme developed in the report „Zukunftsfähiges Deutschland“. Such Ecological Debt is not only towards future generations (6), it is also towards the members of our own generation which are using little environmental space (6). It also includes an historical element, on account of the past occupation of environmental space – the report gives information on German historical emissions of carbon dioxide, which is relevant to this issue.

Certainly, a strict thesis of global ecological limits would reduce economic growth to a zero-sum game, and this may lead (in the rich North), not so much to feelings of guilt over the burden of the Ecological Debt as, on the contrary, to an aggressive reaction (e.g. the colonial war against Iraq in 1991, or the present emphasis in NATO towards the Southern Flank rich in oil and gas). Fortunately there are no strict global ecological limits because there is

much scope for „dematerialization“ and „de-energization“, without a decrease in living standards. Don't get frantic and aggressive! This is the main message to the Germans which comes out of Zukunftsfähiges Deutschland. However, in the meantime, the Ecological Debt which arises from excessive use of Environmental Space in piling up. Which is the message from the report for the people of the South? In this respect, I am disappointed, because the report puts no emphasis either on the Ecological Debt or on the Environmentalism of the Poor. Rather on the contrary, the report uncritically accepts the „post-materialist“ thesis. Let me explain.

## ► Postmaterialist values?

The relationship between wealth and environmental degradation varies with each factor analysed. Let us for instance consider emissions of sulphur dioxide, water quality, the production of carbon dioxide, and domestic waste. Emissions of sulphur dioxide increase with industrialisation, but diminish when a country becomes richer. Water quality is lower in poor countries and increases with wealth, but the consumption of water also increases with wealth, and thus water reserves are overexploited in some rich countries and suffer salinisation in coastal areas. Emissions of carbon dioxide increase with wealth. The production of domestic wastes increases as living standards increase, and their composition makes them harder to recycle.

There has been recently a discussion on the relations between wealth and environmental impact, in terms of the so-called „inverted U relationship“, (7). This relationship applies to sulphur dioxide. Emissions per head increase in the early stages of industrialization, and then decrease as filters are installed in metal smelters or in power stations, or by changes in fuel (from brown-coal or lignites to gas). If one defines „environmental quality“ by one indicator such as sulphur dioxide, then one might conclude that most industrialized countries are achieving substantial improvements in environmental quality, and that therefore, as much as the realities of environmental degradation, it is a cultural change towards so-called „postmaterialist“ values which makes some rich societies increasingly sensitive towards environmental issues. By providing the results of a few selected indicators, it can be argued not only that wealth increases appreciation for environmental values but also that wealth itself is good for the envi-

ronment. The report *Zukunftsfähiges Deutschland* does not agree with the view that economic growth brings its own cure to environmental degradation. On the contrary, it recommends a substantial decrease in the material and energy throughput in the economy, which will not come about spontaneously by the process of economic growth. The change will come about by changes in the fiscal system, through the improvement of technical efficiencies, and also through a feeling of „sufficiency“, in the sense that people will find that they have enough.

### ► More sensitive towards environmental issues

Which could be the reasons for this feeling of „sufficiency“? Which are the reasons for the growth of environmentalism? Some authors believe that environmentalism in the rich countries is not a materialist reaction against the „effluents of affluence“, but rather a post-1968 shift to postmaterialist cultural values. This optimistic position, which takes „dematerialization“ for granted, is known as Inglehart's „post-materialist“ thesis. It is accepted by the report. I do not agree with it. Inglehart (8a,8b) accepts that in the affluent countries there is worry about the deterioration of some environmental indicators, and about the increasing part of GNP which must be spent on „protective“, „defensive“, „corrective“ or „mitigatory“ expenditures against environmental damage (9), but nevertheless, quite apart from „objective“ environmental impacts, Inglehart's thesis is that the cultural shift towards postmaterialist values is making some societies more sensitive towards environmental issues. This was also the consensus among mainstream environmental and resource economists in the United States (10) until challenged by the new ecological economics (11). Indeed, mainstream environmental economics had proposed that the demand for environmental goods increases with income, and that the poor, are „too poor to be green“.

### ► „Postmaterialism“

In trying to disentangle the sources of support for environmentalism in various countries, Inglehart (8a) describes the environment of the Netherlands as relatively „pristine“, a most optimistic assessment since this is a country with a population density of 400 persons per square kilometre, and nearly as many cows, pigs, and

### Der Autor

Juan Martinez-Alier is Professor of Economics at the Universitat Autònoma de Barcelona.

**Kontakt:** Universitat Autònoma de Barcelona, Department d'Economia i d'Història Econòmica, Spain, Tel. 0034-3-5811200, Fax 5812012

cars as humans. This misrepresentation allows then to attribute Dutch environmentalism mostly to „postmaterialism“. The Scandinavian countries are also classified by Inglehart as relatively „pristine“ environments (ibid). They are certainly less populated than the Netherlands. Scandinavian environmentalism (i.e. the concerns expressed in Scandinavia over the state of the environment due to human action) is attributed by Inglehart mostly to „postmaterialism“, with no regard to the following facts: their economies are partly based on extraction of natural resources, one of them (Sweden) has an excessive number of nuclear power stations relative to its population, they have been subject to radiation from Chernobyl, and they have been subject to acidification from external sources. There are then enough material reason to become environmentalist in Scandinavia, as in the Netherlands or in Germany. There are even more reasons to become environmentalist in poor countries or in poor regions, whose environmental space is being used to the benefit of the rich. This is after all the well known Environmentalism of the Poor (of Chico Mendes or Ken Saro-Wiwa), potentially the best kind of support for the northern environmentalists, whose domestic task would become easier if loud voices were heard from the South asking for repayment of the Ecological Debt.

### Notes

- 1) Singh, Manmohan, Economics and the environment, Foundation Day Address, Society for the Promotion of Wastelands, New Delhi, 1991.
- 2) See also the references in Opschoor, JB, „Ecospace and the fall and rise of throughput intensity“, Ecological Economics, 15 (2), pp.137-140, November 1995
- 3) Vitousek, Peter M, Ehrlich, et al.: „Human appropriation of the products of photosynthesis“, Bioscience, 34(6), pp.368-373, 1986
- 4) Rees, William and Wackernagel, Mathis, „Ecological footprints and appropriated carrying capacity“, en A.M. Jansson et al, eds., Investing in natural capital. Island Press, Covelo. Ca., 1994
- 5) Azar, C and Holmberg, J., „Defining the generational

environmental debt“, Ecological Economics, 14 (1), pp.7-20, 1995

Borrero, José M., La deuda ecológica. Testimonio de una reflexión, FIPMA, Cali, 1994.

-Robledo, María Luisa and Wilfredo, Marcelo, Deuda Ecológica, Instituto de Ecología Política, Santiago, Chile, 1992

6) Agarwal, Anil and Sunita Narain: Global Warming in an unequal world. Centre for Science and Environment, Delhi, 1991

7) Arrow, Kenneth, et al., „Economic growth, carrying capacity, and the environment“, Ecological Economics, 15 (2), pp.91-95, 1995

-Selden, Thomas M. and Song, Daqing, „Environmental Quality and Development“, Journal of Environmental Economics and Management, 27, pp.147-162, 1994.

8a) Inglehart, Ronald, „Public support for environmental protection: Objective problems and subjective values in 43 societies“, Political Science & Politics, pp.57-71, March 1995

8b) Inglehart, Ronald, The Silent Revolution: Changing Values and Political Styles, Princeton: Princeton University Press, 1977

9) Leipert, Christian, Die heimlichen Kosten des Fortschritts, Fischer, Frankfurt, 1989

10) Barnett, HJ and Chandler, Morse, Scarcity and growth: The economics of natural resource availability, Johns Hopkins U. P., Baltimore, MD, 1963

Krutilla, JV, „Conservation reconsidered“, American Economic Review, LVII (4), 1967

11) De Bruyn, SM. and Opschoor, JB., „Is the economy ecologizing?“, Tinbergen Discussion Papers, TI 94-65, Tinbergen Institute Amsterdam, 27 pp, 1994

-Cleveland, CJ., „Natural resource scarcity and economic growth revisited: Economic and biophysical perspectives“, in R. Costanza, ed. Ecological Economics, Columbia University Press, New York, 1991

-R.B. Norgaard, 1990. Such debates on the „dematerialization“ and on the energy-intensity of the economy

-Norgaard, RB, „Economic indicators of resource scarcity: A critical essay“, Journal of Environmental Economics and Management, 19, pp.19-25, 1990

-Schmidt-Bleek, F., „MIPS revisited“, Fresenius Environmental Bulletin, 2(8), August 1993

**Anzeigenschluß**  
**der nächsten Ausgabe:**  
**15. März 1996**

**ökonomische Anzeigenberatung**  
**Dietrich Engler**  
**Tel. (069) 96206339**  
**Fax (069) 96206338**

(c) 2010 Authors; licensee IÖW and oekom verlag. This is an article distributed under the terms of the Creative Commons Attribution Non-Commercial No Derivates License (<http://creativecommons.org/licenses/by-nc-nd/3.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.