

Book Review

DECOUPLING NATURAL RESOURCE USE & ENVIRONMENTAL IMPACTS FROM ECONOMIC GROWTH by *Marina Fischer-Kowalski, Mark Swilling et al.*, Geneva: United Nations Environment Programme 2011, xviii + 152 pp.

Over the last hundred years, the worldwide extraction of construction materials grew by a factor of 34, ores and minerals by a factor of 27, fossil fuels by a factor of 12, and biomass by a factor of 3.6. This expansion of consumption and the related production had profound environmental impacts: pollution, climate change, degradation of soils and water, loss of biodiversity, to name the more prominent ones. As a consequence sustainability became a major local, national and global issue, and sustainable development an over-arching challenge. The International Resource Panel of the United Nations Environment Programme (UNEP) has applied the concept of 'decoupling' to this challenge.

In this report, the first of a series, two aspects of decoupling are differentiated, namely 'resource decoupling' and 'impact decoupling': i.e. decoupling is understood as using less resources per unit of economic output, and reducing the environmental impacts of resources used and economic activities undertaken. In chapter 1, the authors focus on only four categories of primary raw materials: ores and industrial minerals, fossil energy carriers, construction

minerals, and biomass. For a long time, the steady increase in the use of these resources has been accompanied by continuously declining prices, leading to overuse instead of resource conservation. Only recently, some of the resources show greater price volatility, what makes the authors believe that a more rapid transition towards active decoupling lies ahead. They however concede that full-scale decoupling will not only require market reactions but changes in government policies, corporate behaviour, and consumption patterns of the general public.

Having reviewed the overall trends in the use of natural resources and the accompanying environmental impacts, in chapter 2 three future scenarios are being presented: (1) 'business as usual', leading to a tripling of global annual resource extraction by the year 2050; (2) 'moderate contraction and convergence', requiring industrial countries to reduce their per capita resource consumption by half the rate for the year 2000; and (3) 'tough contraction and convergence', freezing global resource consumption at current level, and converging industrial and developing countries. While none of these scenarios will lead to absolute

global reductions in resource use, all indicate that substantial relative reductions in resource use will be necessary if the still growing world population is to expect a safe and decent life.

In chapter 3 technological and economic innovations are addressed as to their contribution to either resource saving and environmental conservation or to expansion of resource use and worsening of environmental impacts. The authors hope that these self-contradictory, inconsistent effects can be overcome with system innovations, when in future decoupling is understood as the major challenge of sustainability management. The promise is made that future reports should validate this hope.

In chapter 4 decoupling is discussed regarding international trade. The key point is that many imported resources are subsequently exported as manufactured goods, which may be interpreted as shifting part of the responsibility for decoupling to the ultimate consumer. This point is of growing importance, as internationally traded materials increased from 5.4 Gt in 1970 to more than 20 Gt recently, complicating the issue of decoupling by obscuring responsibility for it.

While many readers will appreciate these and other theoretical considerations on the decoupling concept, others will appreciate the four case studies that follow (chapter 6 to chapter 9). Germany, South Africa, China, and Japan are being investigated here, not with the same methodology but the same goal: to find out whether decoupling has taken place or not.

The results vary to a great extent, not only because resource decoupling and impact decoupling received different social priority, but also because the concepts are used in quite different ways in the respective countries. Some relative decoupling was happening, but absolute resource use reductions were a rare exception. While the two industrialised countries (Germany and Japan) had some kind of strategy but only modest successes in absolute decoupling, the two developing countries (China and South Africa) pursued no tangible strategies of absolute decoupling. The report is - the authors are - very cautious regarding major policy implications or any concrete policy advice. To make decoupling effective worldwide certainly needs more than just trust in the market forces. As this report was announced as the first in a row, as an introduction to the general theme, in the not too distant future we than may see a report on the politics and policies of resource and impact decoupling. It certainly would be good to know more about the easy chances of relative decoupling and about the ultimate conditions for absolute decoupling of resource use and environmental impacts from the future growth of the world economy, and of any national economy.

Meanwhile, one would like to see this UNEP-Report widely discussed in academia, in management schools, and in the knowledgeable and interested public.

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