

# Rethink rather than rebound: a sufficiency revolution must precede the efficiency revolution

*Commitments to efficiency are no miracle cure to ensure a transformation towards more sustainability. By means of sufficiency policies, however, even rebound effects can be limited.*

**By Wolfgang Sachs and Tilman Santarius**

Translated from the German by Judith Stenzel

Sufficiency is the strategy of omitting. Since the invention of the atomic bomb, mankind has realised that not everything that is possible should also be done. Based on this insight, Hans Jonas defined the following moral imperative in the 1970s: "Act so that the effects of your action are compatible with the permanence of genuine human life." Today, the global economy constantly violates this principle – it has become a threat to the biosphere that includes all living organisms on earth.

What is 'real human life' apart from the pure survival of the human species? A debate on social values is necessary to answer this question. In times of rapidly advancing individualisation and globalisation, it seems promising to avoid this discussion. This is why the strategy of efficiency is so attractive. It promises that, due to the extensive transformation of technology, it is not necessary to question present economic practices or lifestyles at all. Does driving a car harm the environment? It does not matter, proponents of efficiency argue, if future cars consume as much fuel per kilometre as public means of transport do today. But there is a problem with this approach. If driving is cheaper and morally acceptable, people will perhaps drive more often and longer distances. This phenomenon is called the rebound effect.

## SUVs with hybrid engines

Financial rebound effects are already well known: The money saved by using more efficient technologies is spent for more consumption or further investment – which leads to additional energy and resource consumption.

Some may find it surprising that rebound effects can even occur if an efficiency improvement does not result in savings. The point is that material rebound effects are possible because the manufacture of more efficient devices and products already eats up a share of the energy potentially saved while they are used. In addition, there are psychological rebound effects because more efficient products do not only have different technical features but also a different symbolic meaning.

Sport utility vehicles (SUV) were vilified as 'suburban tanks' or 'climate killers' until recently because of their excessive weight and horrendous fuel consumption. But once equipped with a hybrid engine, they are suddenly regarded as paragons of ecological motoring. In fact, a significant increase in efficiency of a particular product can lead to a shift of social norms and individual attitudes concerning its use. Yet, without sufficiency, this shift oftentimes leads in the wrong direction.

After all, increases in efficiency cause growth spurts and growth compulsions throughout the economy. For economists, this is a commonplace. Obviously, every increase in productivity strengthens the economy and boosts growth. And while the correlation between labour productivity and growth is unquestionable, there is a similar correlation between the increase in energy efficiency and growth.

In fact, this is one of the main arguments of the supporters of green growth. The stronger the 'carbon productivity' of the economy, the more growth can be achieved. However, if the rebound effects of these growth and demand effects are taken into account, it is impossible to avoid the insight that technology and innovation initiatives alone are not enough to reduce resource consumption and lower greenhouse gas emissions by a factor of 10 in developed countries. What is more, the promotion of 'green growth'

may result in increased rebound effects because the consumption of green products can then be misinterpreted as a personal contribution to environmental protection. It is obvious that the 'efficiency revolution' in technology has to be preceded by a 'sufficiency revolution' in social institutions. Otherwise new technologies will do no more than loosen yet another of Prometheus' bonds.

## **Capping rebound effects**

Efficiency enthusiasts rarely agree with this point of view. People who are caught in the old expansion game of the modern age perceive absolute reduction targets as a limitation of the 'consumer sovereignty' and, therefore, they aim to increase resource productivity. But an increase in productivity for whom or for what? For the great diversity of species? For the dignity of employees? For the durability of products? No, for none of them.

It is said that the consumption of resources relative to the gross domestic product needs to be more productive. The increase in resource productivity is seen as a decoupling of the growth curve, whereby the need for economic growth is often overlooked. The term decoupling also refers to the constant growth of economies. It is hence not surprising that 'absolute decoupling', a decline in resource use accompanied by economic growth, is failing. It is only occurring in some exceptional cases. Hence, the policy of sufficiency is neutral with respect to economic growth, focussing instead on the wellbeing of the population. However, the growth neutrality of sufficiency is resistant to all kinds of rebound effects.

The concept of sufficiency can be applied in many domains, but in all of them the concept of a 'cap' comes into play based on the idea of setting a 'cap' on the consumption of resources. Specifying caps on a collective basis is essential for combatting rebound effects. No matter how valuable caps may be on an individual level, they cannot replace caps on a collective level. Sufficiency is not just a matter of personal interest, but is also relevant on the institutional level. Sufficiency based merely on the level of the individual cannot ensure the avoidance of material and growth-related rebound effects. It may even cause an increased shift of resource consumption to other consumers in other countries.

On the other hand, collective agreements cannot provide effective protection against this shift in consumption or the after-effects of excessive consumption. Some of the key successes of environmental policy emanated from the spirit of sufficiency: unleaded petrol, the Montreal Protocol on Substances that Deplete the Ozone Layer, the Stockholm Convention on POPs, the German abandonment of nuclear energy, and even the designation of nature reserves – the very first environmental policy measure. But CO2 emissions are obviously of a different type because they penetrate every aspect of business and they require sustainable technologies everywhere. Only commonly agreed caps on carbon dioxide emissions, which represent one of the goals of sufficiency, can revolutionise efficiency and, at the same time successfully control the rebound effects. The widely discussed topic of taxes on energy and resources, which could compensate for savings resulting from increased efficiency, are, strictly speaking, a sort of 'light' sufficiency.

## **Capitalism can survive only if it can acquire a new operating system**

What exactly does sufficiency policy entail? In order to be prepared properly for the challenges of the coming decades, the following aspects should be taken into consideration: a resource-saving solar energy system, underpowered cars, a reduction in European air traffic, zero additional utilisation of land, organic farming and an exit strategy for floating fish factories. In addition, the following social aspects should be taken into account: the sharing, of apartments and gadgets but also all types of co-production, both electronic and manual.

Such projects already exist, but a top priority is to make them accessible for everybody. They all contribute to the culture of 'enough'. If they increase and cover entire sectors, the rebound effects will decrease.

'Exit' and 'change', 'transformation' and 'post growth' are terms which indicate that the policy of sufficiency considers itself to be a part of a larger change. In general, a policy of sufficiency only makes sense if it offers opportunities, for example, a city with low traffic that is worth living in, farming without chemistry but of a high quality or a decentralised but efficient regional economy. To put it in a nutshell, what we are aiming for is a common welfare economy that is linked to nature and that respects the needs of people. Capitalism survives only within democracy if its system changes and includes ecological and social added value, even if it does not seem possible in some areas. It is a broad field, but eventually the main point is to build a society based not only on money but also on solidarity with people and other living creatures. It is probably the most important recommendation for the framework of the efficiency enthusiasts not to forget about this aspect.

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