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Institut für angewandte Ökologie
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Working Paper

When less is more

Sufficiency – Need and options for policy action

Oeko-Institute's Working Paper 3/2013

Dirk Arne Heyen
Corinna Fischer
Regine Barth
Christoph Brunn
Rainer Grießhammer
Friedhelm Keimeyer
Franziska Wolff

Öko-Institut e.V. / Oeko-Institut e.V.

Geschäftsstelle Freiburg / Freiburg Head Office
Postfach / P.O. Box 17 71
79017 Freiburg. Germany / Germany
Tel.: +49 761 45295-0
Fax: +49 761 45295-288

Büro Darmstadt / Darmstadt Office
Rheinstraße 95
64295 Darmstadt. Germany / Germany
Tel.: +49 6151 8191-0
Fax: +49 6151 8191-133

Büro Berlin / Berlin Office
Schicklerstraße 5-7
10179 Berlin. Germany / Germany
Tel.: +49 30 405085-0
Fax: +49 30 405085-388

info@oeko.de
www.oeko.de

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Working Paper 3/2013 Öko-Institut e.V. / Oeko-Institut e.V.

October 2013

Download: www.oeko.de/oekodoc/1880/2013-008-en.pdf

This Working Paper originates from the project “Sufficiency in everyday life“ (2012/13) which was funded by the *Stiftung Zukunftserbe* (Legacy for the Future Foundation).

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Abstract

To bring about sustainable production and consumption patterns, three strategies come into consideration: efficiency, consistency and sufficiency. These strategies are complementary. We argue that the controversial one – sufficiency – is necessary in industrialized countries. While sufficiency is often regarded as a voluntary lifestyle choice we see its emergence as a system innovation which only succeeds in interplay with varied elements that are interdependent. These elements include values, markets, infrastructures and also policy.

In this working paper we focus on the political dimension, which has been neglected up to now. Sufficiency policy encompasses political measures which are geared to environmentally sustainable consumption patterns and involve a change in benefit for a substantial share of the population. We demonstrate why sufficiency policy is necessary and what measures can be envisaged – not only to replace but also to complement efficiency and consistency measures. Further expanding the focus on sufficiency policy, the challenges, an outline of sufficiency policy, the necessary communication efforts, and the need for further research are also presented.

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1. Introduction[1]

The current production and consumption patterns in industrialized countries are not sustainable. Universalized to a projected global population of over nine billion, these patterns would far exceed the limits of the Earth's ecological boundaries. The use of energy, land and raw materials, loss of biodiversity, emissions as well as water, soil and air pollution have to be reduced to sustainable levels. It is important for non-renewable resources only to be used to the extent they can be replaced; renewable resources only used to the extent they are produced; and substances released only to the extent allowed by the absorption capacity of eco-systems (Enquête Commission of German Bundestag 1994, p.23).

In principle the goal of a sustainable society can be fulfilled by using three strategies: efficiency, consistency and sufficiency. These strategies are complementary and we argue that the controversial one – sufficiency – is necessary alongside the two other strategies. The term "sufficiency" is as many-faceted as it is inconsistently defined and connoted. Diverse fears and defensive reactions (deprivation, eco-dictatorship, technophobia, a backward orientation) are contrasted by certain promises (the good life, simplification of life, liberation from over-abundance, economy of proximity). In comparison, we regard a value-neutral definition as useful. We understand sufficiency as *modification of consumption patterns that help to respect the Earth's ecological boundaries while aspects of consumer benefit change* (for a detailed derivation and substantiation of this definition, see Fischer/Grießhammer 2013).

This definition of sufficiency refers to the concept of consumer benefit or rather "bundles" of consumer benefits" since the utilization of goods and services generally involves not only one benefit, but rather an entire set of different benefits.[2] This reference makes sufficiency distinct from efficiency and consistency, since the latter two strategies are based on a lower use of natural resources not changing the consumers' bundles of benefits: with efficiency, the resource input or emission output quantitatively decreases in relation to the generation of the same consumer benefit; with consistency, the decrease in resource use is brought about by an alternative technology that is also environmentally sound when used on a large scale. Sufficiency is, in contrast, associated with changes in the cluster of benefits. To a greater or lesser extent these changes can be experienced subjectively as deprivation. Deprivation can, in turn, be perceived to a greater or lesser extent as acceptable and may be compensated by benefits of the change.

Sufficiency is a strategy which heavily affects individual consumer behaviour. The implementation of this strategy is thus usually seen as accomplished voluntarily by the individual. Yet shifting all responsibility to the judgement and the voluntary behaviour of the individual is neither fair nor constructive since our behaviour is embedded in structural contexts (see Chapter 4). A society will not become adequately sufficient by itself; it rather requires system innovation, which can only succeed when many different elements interact (co-evolution) (see Chapter 3).

In our opinion – and without lapsing into planning euphoria – political intervention is essential. In light of the fact that sufficiency and policy have rarely been considered or discussed in conjunction,[3] our paper puts options for policy action geared to sufficiency – i.e. "sufficiency policy" – to the fore. We understand sufficiency policy (based on the above-mentioned definition of sufficiency) as *policy measures which are geared to ecologically sustainable consumption patterns*

[1] This working paper of Oeko-Institut was written within the scope of the 'Sufficiency in Everyday Life' (*Suffizienz im Alltagsleben*) project (2012-13), which was funded by the German Zukunftserbe Foundation (*Stiftung Zukunftserbe*) and carried out under the project leadership of Franziska Wolff. For another working paper resulting from the project, see Fischer/Grießhammer 2013.

[2] For example, driving one's own car enables a) transfer from one place to another, b) door to door transport without needing to change; c) the time of travel can be chosen; d) those inside to stay dry, thereby distinguishing itself from rail travel in terms of aspects b) and c) and (in bad weather) from journeys made by bike in the case of aspect d).

[3] See the focus on voluntary behaviour (in Chapter 4). The German term for "sufficiency policy" (*Suffizienzpolitik*) is almost completely new. For example, a Google search conducted in spring 2013 produced only approx. 35 hits for the term.

and signify a change in consumer benefit for a substantial share of the population. Sufficient consumption actions can be directly addressed politically, as can the sufficiency-facilitating actions of companies and other service providers (see Table 1).

Table 1: Action to be promoted by sufficiency policy

1. Sufficiency behaviour on the consumer level:

- Less (resource-intensive) goods and utilization of goods:
  - complete eschewal of certain goods (e.g. owning a car, long-distance travel),
  - reduction in quantity of certain goods (e.g. meat, televisions),
  - less frequent utilization of goods (e.g. cars, televisions),

  possible substitution by means of qualitatively different, more environmentally-friendly goods (e.g. a bike instead of a car)
- Choosing an alternative of the (same) good which is smaller, has fewer functions and/or less comfort (e.g. smaller television, smaller apartment, car with no air conditioning)
- Self-production when ecologically advantageous (e.g. growing organic vegetables in the garden)
- Shared use when ecologically advantageous (e.g. sharing a car with neighbours)
- Changed user behaviour that is more environmentally-friendly (e.g. max. 120 km/h on motorways)
- Using products for longer when ecologically advantageous (e.g. mobile phones, clothing)

2. Sufficiency-facilitating actions on the company level:

- Sale and promotion of more environmentally-friendly goods with changed benefit aspects (e.g. production of smaller appliances and positioning them favourably in shops)
- Services for colloborative consumption which enable more intensive usage (e.g. tools for hire)
- Production of goods with a longer durability or services which enable longer usage (e.g. inexpensive repairs and replaceable laptop batteries)
- Reduction in quantity of new goods available each year (e.g. fashion collections)
- Making environmental information of products available (e.g. absolute energy consumption of freezer cabinets)
- Providing staff with environmentally-friendly incentives (e.g. railcards instead of company cars)

3. Sufficiency- facilitating behaviour of third parties (e.g. associations, initiatives, "prosumers"):

- Providing services which facilitate sufficiency behaviour (e.g. rental shops)
- Carrying out campaigns, providing information, awarding labels

Source: Authors' own

Taking the necessity of sufficiency (Chapter 2) as a starting point, we elaborate some basic reflections on the question of how sufficiency can emerge in society and how it can be promoted politically. Firstly, our understanding of sufficiency as system innovation is elucidated (Chapter 3) and we explain why policy plays a crucial role in the co-evolutionary process of system innovation (Chapter 4). By way of illustration, and without an in-depth analysis of specific instruments, we present a series of policy instruments for sufficiency (Chapter 5). Subsequently, challenges (Chapter 6), the first contours and the communication needs of sufficiency policy (Chapter 7) are discussed. We end with a brief chapter on the need for further research (Chapter 8).

2. Why we need sufficiency: protecting ecological boundaries, reducing costs and conflicts

There are two reasons why we regard sufficiency as an essential approach on the path towards sustainability. Firstly, while efficiency and consistency are just as necessary as sufficiency, the two strategies are – in the case of many (if not all) natural resources – not enough in themselves to reduce the use of resources of an industrialized country like Germany to a sustainable level – and certainly not when consumption is universalized to the global level.[4] Secondly, and perhaps surprisingly at first glance, sufficiency can sometimes be the simpler strategy and the one that is easier to accept in the fulfillment of ambitious targets like the decarbonisation of our economy. The following briefly explained argument is based on a comprehensive literature review conducted in the "Sufficiency in Everyday Life" project (see Footnote 1; see also Fischer/Grießhammer 2013).

A well known barrier of the efficiency strategy is the rebound effect. We understand the rebound effect as increases in consumption that *are triggered by the efficiency measure* (e.g. a new car is more economical and is therefore driven more often).[5] Faced with methodological difficulties in calculation, knowledge about rebound effects in different sectors and countries differs extensively. In the households sector in industrialized countries, the following applies in principle: there is a rebound effect but it generally remains relatively small and does not completely reverse the efficiency gains; it is often assumed that 10-30% of an efficiency measure is cancelled out. However, in addition to the rebound effects in a strict sense, there are also general increases in consumption and production. As soon as economic growth is higher than the rate of efficiency increase, the gains in efficiency begin to be cancelled out.

Yet the German Statistical Office's Report on Indicators of Sustainable Development shows a slight tendency in the direction of an absolute de-coupling of economic growth and consumption of natural resources in the German economy (German Statistical Office 2012): Since measurements began in 1994, resource productivity in Germany has risen more strongly than its GDP, as a result of which resource consumption fell by approx. 17% in the same period. Energy productivity rose more strongly than the GDP following a long parallel development, so primary energy consumption fell by approx. 6%. Greenhouse gas emissions have decreased by approx. 25% since 1990. However, these trends are not enough either to meet the productivity targets of the German government or to make the absolute consumption of natural resources sustainable. To protect the climate almost complete decarbonisation (-95% CO_2 emissions) of the economy is needed. To conserve natural resources, reductions of approx. 80% are being discussed for industrialized countries (Schmidt-Bleek 2007; Weizsäcker et al. 2010). Achieving this by means of rebound-prone efficiency gains alone is unrealistic.

The consistency strategy – with its reliance on environmentally sound technologies – also has its limits. That renewable energies and resources are limited can be seen from competitions for use: wind power plant or landscape conservation area, use of biomass for energy purposes or use as material, food or fuel. In addition the use of consistency strategies is often not without risks and side effects, as demonstrated in particular by the competition for biomass use. Finally, we are still a

[4] With regard to fairness, the well-known question posed by Singer (1971) should be mentioned: "What would happen if everyone did that?" Ott and Döring (2007) answer in accordance with the universalism argument as follows: "If, due to the expected consequences, not all people can consume natural resources in the quantities that residents of industrialized countries can, they have a moral reason to reduce their resource consumption" (our translation). If our energy and resource consumption is extended to 9 billion people in future, if that is even possible in terms of resource use, the consequences would be catastrophic. Given that developing countries have a legitimate need to make up ground, we have to reduce our own use of the Earth's natural resources to a just and reasonable amount. This is also the goal of the "budget approach" with its global, per capita equal distribution of emission rights (WBGU 2009). In 2007/2008 the German Chancellor Angela Merkel also spoke in favour of equal per capita emission rights, inter alia as a yardstick for international climate agreements.

[5] In the relevant literature a number of different effects are distinguished, e.g. "revenue effects" whereby the money saved is spent on additional consumption and "substitution effects" whereby a resource that has become cheaper substitutes another resource. A good overview can be found in Hertwich (2005).

long way off from the complete and equal-value replacement of all current goods and services – even if theoretically possible. It seems highly risky to rely on all the necessary technological advances occurring at the right time before the imminent danger of climate collapse or irreversible loss of biodiversity.

Ideally it would be possible to precisely determine, for each area in which action needs to be taken, the contribution that efficiency and consistency strategies can make to the reduction in resource use and emissions needed to stay within the Earth's ecological boundaries. On this basis it could then be derived whether and what "need for sufficiency" there is. However, this approach involves substantial methodological difficulties. The Earth's carrying capacity can, to some extent, be realistically estimated for some, but not all, environmental resources (Rockström 2009). Additionally, there are inevitably high uncertainties with regard to future technical and economic development. The best data and literature currently available is to be found in the field of energy and climate protection.[6] It would be useful to extend analyses in this field to other areas in which action needs to be taken.

Sufficiency by no means needs to be only the "last resort" or an emergency solution when efficiency and consistency strategies are not enough. Neither efficiency nor consistency can be implemented free of charge; indeed, as shown by the example of energy transformation (*Energiewende*), such measures can involve substantial investments and cost burdens. Furthermore, such measures can come into conflict with nature conservation concerns, aesthetic matters (landscape) or other desired or needed uses – like the expansion of wind power, of biomass cultivation, and of electricity networks and storage. The measures can also entail new risks – as is the case with carbon capture and storage (CCS). Sufficiency can sometimes be the simpler, cheaper, less conflict-laden, even the more elegant solution.

3. Sufficiency as system innovation

The diffusion of sufficiency in society would mean a fundamental change of consumption habits for most people. Ultimately, our behaviour and our lifestyles are at the heart of achieving sufficiency. Our behaviour depends on personal factors like values, attitudes, competences and routines, but is beyond that also highly structurally embedded (see, for example, Southerton et al. 2004; Brand 2009; Heidbrink et al. 2011). It is influenced (enabled, impeded, etc.) by social factors like general social or milieu-specific norms, by work organisation or distribution of roles, and by technical, economic, infrastructural and political framework conditions. At the same time behaviour affects structures as well as attitudes (Welzer 2013).

Given that behaviour is structurally embedded, the diffusion of sufficiency constitutes a comprehensive socio-technical innovation – referred to as "system innovation" (Elzen et al. 2004). A system innovation of this kind only comes about through co-evolutionary change in which multiple elements (and stakeholders) interact. It is possible to define and systematise these elements in different ways. According to the following analytical framework developed by Oeko-Institut a system innovation must draw on the following aspects (and within each of these aspects,consider different levels, from the individual to the social):

- **Values and guiding principles**: This includes personal and societal orientations like values, goals, norms, attitudes, visions, concept of what is "normal".

[6] How global GHG emissions would have to develop to stay within a specific "risk corridor" can be determined with a high degree of reliability. Based on the budget approach and principles of fairness, the rights to emit a certain amount of emissions can be distributed among countries (see WBGU 2009). Climate scenarios are then calculated under different framework conditions, with which measures climate targets could be met. Alongside the expansion of renewable energy generation (consistency), a specific volume of energy savings is also assumed in the scenarios. Usually it is not further reflected whether these climate protection targets can be achieved by using efficiency or sufficiency measures or whether only efficiency is assumed. At this point the analyses could go a step further and show what energy savings would be possible with the help of sufficiency measures as a complementary or additional effort.

- **Behaviour and lifestyles**: This category comprises (consumption) behaviour, everyday practices and habits – from a specific action to lifestyle.
- **Technologies and products**: This includes all the artefacts which people acquire, use and handle (including during production).
- **Material infrastructures**: This factor refers to relatively long-term physical structures which delimit the scope for action – from households to urban structures, electricity networks, roads and telecommunications networks.
- **Social and temporal structures**: Like material infrastructures, social and temporal structures are long-lasting and limit the possible scope for action. However, these structures are not material, but rather determined by how society is organised (e.g. working hours, gender roles, participation opportunities).
- **Markets**: This factor encompasses market organisation (e.g. anti-trust, liability and competition laws), market structures (e.g. degree of market concentration) as well as the supply, demand and prices of buyable or rentable goods and services.
- **Research, education, knowledge**: This factor consists of the content and scope of existing knowledge and the mechanisms and organisation of its production and communication. Knowledge about the problem (type, causes and consequences of a problem), orientation knowledge (targeted conditions which solve the problem) and knowledge for action (methods for achieving these targeted conditions) should be distinguished.
- **Policy instruments and institutions**: These include the institutional and organisational frameworks (constitution, governmental bodies, responsibilities, procedures) and instruments of policy intervention, including from non-governmental actors.

Figure 3: Elements of a system innovation[7]

Source: Authors' own

[7] The position of the puzzle pieces is coincidental and should not be understood as a statement on concrete interactions between different elements.

In specific cases of system innovation, these elements are not all equally relevant. However multiple elements are always interacting and changes of one element invariably involve changes for others. This is shown, for example, in the renaissance of cycling since the 1980s in which changes and visions (leisure and fitness wave, environmental awareness) and technical and market developments (increase in comfort, electric bikes, bike-sharing) interacted. Additionally policy and infrastructural conditions – e.g. the building of cycle paths, favourable cycling conditions in city centres and extension of commuting allowance to include cycling – supported these changes (see Fischer et al. 2013).

The history of (not) smoking is also a striking example of how different elements interact in social change. Science and research contributed to an increasing understanding and awareness of the problem. In turn, this – particularly knowledge of the problem of passive smoking – constituted an important legitimation for increasingly far-reaching political interventions, which expanded from taxes on tobacco and restrictions on advertising to regional bans on smoking. The social acceptability of smoking has also changed over time (see Stengel 2011: 306 ff). Last but not least, there is a cultural change in various societies (e.g., in Germany), particularly among young people: positive attributions for smoking ("cool", etc.) are dwindling; and the number of young smokers is at an all-time low (BZgA 2012). The shift in values and principles in turn facilitate(d) stronger policy interventions.

Also in the case of ecological sufficiency, the following applies: the more "pieces of the puzzle" contribute to changes (i.e. the more knowledge, values and visions, markets and infrastructures, policy instruments and institutions promote rather than obstruct sufficiency), the more likely and extensively behaviour and lifestyles will change. The political dimension is particularly important since policy can influence consumer behaviour both directly and – via other elements like research, products or infrastructure – indirectly.

4. Need for political action

System innovations can occur in a rather unplanned and incidental manner or innovation can be targeted – although it cannot be fully predicted or determined. Sufficiency is usually associated with voluntary changes in behaviour. According to this understanding, the role of policy is generally limited to pleas to consumers ("Eat less meat! Leave the car at home!", etc.) or, at most, the creation of favourable supply structures. A greater role for policy and active governmental intervention reaching as far as sufficiency have only been rudimentarily discussed up to now and demanded by few. The reasons for this are moral concerns associated with intervention in personal and economic freedoms and, above all, the political sensitivity of changes in behaviour that have a reputation of being deprivation-orientated ("eco-dictatorship").

Some authors even *define* sufficiency as voluntary behavioural change. Under this definition, there can be no sufficiency policy or regulation per definition. For example, Schmidt-Bleek (1994) and Stengel (2011: 131ff.) – as well as the (majority) report of the Enquête Commission of the German Bundestag "Growth, Welfare, Quality of Life" ("*Wachstum, Wohlstand, Lebensqualität*") which refers to them[8] – distinguish four strategies: efficiency, consistency, sufficiency and, fourthly, regulation. Such a juxtaposition of strategies fails to recognise that regulation is not to be separated from the sustainability strategies but rather criss-crosses them: In all three strategies both voluntary and policy-induced behaviour can occur on consumption and production levels.

Up to now the responsibility for sustainable consumption is often ascribed to the consumer. However: If someone is ascribed responsibility, it should be ensured that this responsibility can

[8] See, for example, p. 597 in the 17/13300 Bundestag paper (advance electronic version). In contrast opposition parties and some experts have voiced dissenting opinions, arguing that sufficiency should be supported by means of governmental (above all, regulatory) framework conditions (Fn 1753; p. 647; 694).

actually be assumed. There is substantial doubt that this is the case with sustainable consumption (Belz/Bilharz 2007). For example, Linz (2012: 90) writes that the tendency to appeal above all to the individual is "a dangerous and constrictive approach because the individual is given a greater burden than he or she can carry."[9] Firstly, approaches geared to the individual do not usually influence social consumption patterns on a fundamental level and engender only low environmental benefits (Seidl/Zahrnt 2012). Secondly, the consumer can lack the necessary knowledge and/or willingness to implement the desired changes. Thirdly, even motivated people who are aware of the problem often find it difficult to consistently maintain sufficiency behaviour. This is due to behaviour being structurally embedded as described above.

Political and economic framework conditions (supply structures, infrastructure, policy instruments like envionmentally harmful subsidies) contribute just as much as psychological and socio-cultural factors to the discrepancy between problem awareness and action. Additional contributing factors include socially shaped concepts ("mental infrastructures", Welzer 2013) of wealth and progress, the role of practical habits and routines in consumer decisions and the realisation of material benefits and preferences within the prevailing (consumer) culture. Usually running counter to the short-term benefit for the individual is the (often long-term) environmental and overall social damage. What results is a so-called "tragedy of the commons" (see Hardin 1968; Ostrom 1990). The individual benefit can be located in possession and use, in self-realization and – independently of the (im-)material intrinsic value – in social status. The prevailing understanding of wealth in Western societies and the associated culture of recognition is orientated towards a maximization of possessions and experience, with corresponding consequences for the environment (Stengel 2011).

The discrepancy between awareness and action can be seen, for example, in mobility: Almost everyone is aware of the environmental problems associated with car and air transport. However, only rarely does this lead to the avoidance of journeys by car or air. Similarly, there is a conspicuous disparity between knowledge and environmental impact of soil sealing and the unrestricted aspiration to have one's own house or a larger apartment (Rückert-John et al. 2013). People sometimes adopt specific sufficiency actions; however, when viewed overall there are contradictions and ambivalences ("cyclist and frequent flyer"). A "psychological rebound effect" – whereby "moral" behaviour in one area allows for "immoral" behaviour in another area – can contribute to such contradictions. Together with the financial rebound effect whereby the individual spends the money saved through efficiency or sufficiency elsewhere, a lifestyle that is sufficient on balance is thereby made more difficult.

In the German 2008 Study on Environmental Awareness (Wippermann et al. 2008) 80% of those surveyed reported that they were only willing to increase their efforts to protect the environment if everyone else did the same. Therefore the goal must be to make sufficiency behaviour mainstream (i.e. seen as "normal" and "appropriate" behaviour). Linz (2012: 101), based on Karl-Werner Brand, refers in this context to the "Münchhausen trilemma": sufficiency would have to be learnt in a society which has been pursuing the exact opposite for half a century beforehand; society would – contrary to the normative power of the factual – have to pull itself out of non-sustainability by its own hair. Experience gathered in recent decades shows that, given the urgency of many environmental problems, social change towards sustainability is occuring too slowly. Often this change is achieved only within specific social milieus or in specific areas where it is not necessarily a priority from an environmental perspective.

[9] Authors' translation.

In conclusion: Since an adequate degree and speed of cultural change are highly uncertain, the political provision of incentives, infrastructures and regulations should be part of a system innovation strategy in which the different elements mutually reinforce each other.

5. Instruments of sufficiency policy

In the following, instruments are presented which can be used in sufficiency policy. This does not take the form of an in-depth analysis; rather, an overview of instruments which *can* be used in sufficiency policy is provided. The discussion should not be understood as recommendations made by the authors. The question of which instruments would be suitable, legally permissible and socially acceptable, requires detailled discussion that is not possible within the scope of this paper.

Our focus is on instruments which address the buying and use behaviour of the general public directly, or indirectly via supply management. In accordance with our understanding of sufficiency certain measures can be experienced by some as sufficiency and not by others. For example, keen meat eaters or car fans are likely to experience a meat tax or a ban on luxury cars as a sufficiency measure (loss of pleasure, comfort, status etc.) whereas cycling enthusiasts and those with a low-meat diet would not. “Sufficiency measures“ are thus spoken of as such when they bring about actions which are viewed by a substantial share of the population as sufficiency-orientated.

Instruments promoting sufficiency (either as a goal or side effect) already exist (examples in the text mainly refer to Germany) and are thus not completely new. Given this fact, sufficiency policy may already be losing some of its “scare factor”: ultimately it has been possible to implement these instruments and they are regarded as normal today. However, it should be noted that the number and “sufficiency intensity” of existing instruments are limited and are not enough to establish sufficiency by far. For a more far-reaching sufficiency policy, the sufficiency content of existing measures can be strengthened as well as new measures introduced.

At the same time, we want to emphasise that sufficiency measures alone are not the solution. In the case of most problems, a policy mix of sufficiency, efficiency and consistency measures are necessary and useful. Alongside explicit sufficiency measures, the removal of counter-productive measures – most notably, certain subsidies and infrastructural measures – is also an important step towards sufficiency. According to calculations by UBA (2010), environmentally harmful subsidies on the national level in Germany (most notably, tax benefits) amount to almost 50 bn Euro a year alone, including 11.5 bn Euro for air transport. Much headway would be made if incentives and exceptions which engender the opposite of sufficiency – i.e. effectively causing “insufficiency”, as the failure of organs to function is termed in medicine – were removed.

5.1. Planning and infrastructure provision

Suitable infrastructure can greatly facilitate sufficiency behaviour, sometimes even enabling it in the first place. According to the concept of “nudging”, the public sector can make sufficiency the default option in consumer decisions when it is the service provider. In **regional and urban planning** an increasing number of municipalities are – after decades of following the vision of the “car-friendly city” – switching to pedestrian- and bike-friendly planning, which encourages residents to forgo car use by means of motivational (increase in cycle paths) or restrictive (fewer parking spots) measures. Similarly, a policy geared to promoting city centres rather than approving new developments for the purposes of decreasing land conversion and the need for transport (infrastructure) can also facilitate sufficiency behaviour. Without a doubt many municipalities can do more to make their roads more attractive for pedestrians and cyclists, to encourage people to switch from car use to public transport, and to prevent urban sprawl.

Furthermore, municipalities can actively promote **services for colloborative consumption**. This is especially true with mobility where car-sharing is given preferential treatment (e.g. introduction of

priority lanes and within the scope of parking space management) and municipalities are providing such services themselves. Bike rental schemes have been implemented in many big European cities. In Paris the municipal scheme has been expanded to include electric vehicles. If the public sector becomes the service provider, it constitutes a "government-to-consumer" (G2C) form of collaborative consumption. Moreover, municipalities can – subject to legal assessment – consider implementing lending services for basic items (tools, gardening appliances), analogous to public libraries. They could also make rooms available for private initiatives free of charge or at least provide potential service providers with helpful advice.

Opportunities for policy intervention by ***providing*** **products and services** are not only to be found in the field of mobility (attractive public transport options). Intervention of this kind is also possible in the food sector, e.g. with publicly owned canteen services (or ones with public sector contracts). Alongside veggi-days, canteens at universities and public authority buildings would no longer serve vegetarian dishes as the exception in terms of quantity/choice, attractiveness and their positioning. At schools and kindergartens the canteens could make vegetarian dishes the default option, with meat dishes having to be specially ordered (see Sunstein and Reisch (2013): "green default with opt-out option").

5.2. Information-based instruments

Consumer policy often makes use of instruments based on providing information and recommendations. But the focus has been on efficiency up to now, e.g. energy-saving appliances; efficient usage without a change in consumer benefit. Some sufficiency information can be found in **campaigns and websites** like EcoTopTen (e.g. switching to car-sharing and cycling, smaller appliances, eating less meat, etc.) or the Climate Seeks Protection website *Klima sucht Schutz*) (where there is only one sufficiency tip: eat less meat). Another sufficiency-orientated recommendation is made on the website for checking electricity savings in Germany (decrease room temperature by 1°). The recommendations of the German Nutrition Society (DGE), made on behalf of the German Ministry for Food, Agriculture and Consumer Protection (DGE 2011a, b) – e.g. advising staff canteens and school caterers to offer meat dishes twice a week at the most – ultimately promote sufficiency although they are not addressed directly to the consumer. Current information campaigns could feasibly be geared more strongly towards sufficiency and new information campaigns and actions (e.g. regarding vegetarian food) could be launched. Campaigns and information packs on collaborative consumption services (e.g. websites/brochures on municipal services and related products) are also conceivable.

An important component of information policy is **product labelling**. The "Blue Angel" (*Blauer Engel*) label already promotes sufficiency in those cases where absolute energy consumption limits (e.g. for refrigerators) are set or provisions on serviceability and warranty made in public procurement directives. This encourages the purchase of smaller products and longer usage of products. The EU energy efficiency label has only classified according to efficiency, rather than the absolute energy consumption of appliances, up to now. The existing energy consumption labelling for passenger cars could encourage consumers to purchase a smaller car, but the possible effect is counteracted by a weight-specific classification. When awarding any such label, a more consistent consideration of absolute energy consumption, operating costs and durability could lead to purchasing decisions that are more sufficient. Collaborative consumption services could also be classified – by collecting them under an umbrella brand; by the "Blue Angel" label (as is already the case with car-sharing) when the environmental benefit is proven; or, following appropriate testing, by a quality seal.

5.3. Economic instruments

Many existing **excise taxes and charges** – e.g. electricity tax, mineral oil tax, waste water charges and waste collection charges (if volume-based) – tend to offer an incentive for lower consumption. In principle the same is true of value-added tax. In some cases certain taxes and charges – like air transport tax, parking charges and property tax – may also lead to an avoidance of air travel, car journeys and purchase of a property (or lead to purchase of a smaller property). However, these taxes and charges are usually too low to steer consumption in the desired direction (e.g. an electricity tax of 2.05 cent per kWh increases an average household's electricity costs by less than 6 Euro per month). This is also because they are often primarily conceived as a source of governmental revenue rather than a policy instrument.

An option for achieving a greater sufficiency effect would therefore be to increase these taxes and charges or give them a progressive structure, particularly electricity and heating taxes. Another option would be to introduce new taxes. These could be created on the overall input level (e.g. a tax on resources/materials) or the final product level (e.g. kerosene and meat taxes). A resource tax would have a favourable effect not only on resource efficiency, but also on the longer and/or shared usage of products (and thereby sufficiency). Any negative distribution effects need to be considered and in some cases flanking instruments may have to be established to attentuate the social effects. In respect of charges, a congestion charge for road use in Germany (e.g. in cities or in the form of a motorway toll) are already the subject of political discussion. With regard to increases of existing charges, it should be borne in mind that these must, for legal reasons, be appropriate to that which is rendered in return.

With a higher allowance price the EU Emissions Trading Scheme could, alongside efficiency measures, also lead to sufficiency by increasing the price of energy-intensive products, including electricity and air travel (at least within Europe). Other **schemes with tradable allowances**, including ones geared to incorporation of primary energy into the economic cycle, are also conceivable. A scheme of carbon allowances for individuals is also being discussed, which addresses citizens on a specific product level or on an overall level in the form of personal carbon trading. In this way everyone would have a carbon account (e.g. with a yearly budget of 1t), from which deductions are made for purchases; extra allowances would have to be bought if the budget is exceeded.

Subsidies are another type of incentive instrument. But sufficiency behaviour that takes the form of *not* buying certain things is difficult to subsidise. Nevertheless it is certainly possible to promote a switch to more sufficiency behaviour. Some existing examples are, for instance, the reduced rate of VAT and direct subsidization of local public transport; more far-reaching options would be free local public transport and free bike rental, or a reduced rate of VAT for inter-city rail travel. Another policy area in which subsidies could be deployed is innovations and initiatives in the realm of collaborative consumption through the promotion of start-ups or a lower VAT rate for such services. As a rule, however, particular attention should be paid to the danger of subsidy instruments misfiring, resulting in free-rider effects and over-subsidization.

5.4. Regulatory instruments

Regulatory sufficiency instruments have not been very widespread to date. The most far-reaching type of regulatory instrument is a (partial) **ban** on a product or behaviour. One example is a ban on car driving in certain areas (particularly city centres) and, during the global oil crisis, on certain days of the week, too. De facto bans (implemented through efficiency standards) on certain products like conventional lightbulbs can also be regarded as sufficiency measures since the products could be substituted in principle but many consumers experienced the ban as a reduction in consumer benefit (e.g. the lighting quality of energy-saving lamps). Another legal measure is **the**

setting of limits. One obvious example is the introduction of speed limits on most roads including motorways (which is not yet the case in Germany). Setting limits on quantity of living space within the scope of the rental cost coverage of unemployment benefit claimants in Germany (*Arbeitslosengeld II*) is another example – albeit one motivated by fiscal policy. For the purposes of environmental sufficiency policy, (quantitative) restrictions or reduction requirements (e.g. the energy saving obligation) could also be used in other areas. Although here – as with bans – the question arises of whether the solutions are proportionate and conform with Germany's Basic Law (*Grundgesetz*).

Instead of addressing measures directly at the individual, measures could also take the suppliers as the point of departure. Consumers could be indirectly addressed if, for example, energy suppliers were obliged to introduce progressive tarrifs or (public) canteens were obliged to have a veggi day each week. Another way of addressing consumers indirectly is to introduce **product standards** and, in particular, make eco-design directives more sufficiency-orientated. Up to now such measures have usually only served to increase product efficiency. The measures could be made more sufficiency-orientated if progressive energy consumption standards are set, which increase in accordance with the size of the appliance or its functionality, set an absolute upper limit or include provisions on repairs and exchangeable batteries. The purchase of new products would thereby decrease. To incentivize long-lasting products the warranty laws could also be adapted to cover not only the product's condition when purchased but also premature wear as well as to extend the manufacturer's burden of proof period.

6. Challenges of sufficiency policy

Sufficiency and – even more so – sufficiency policy are topics that are often avoided and not without reason. The general, well-known challenges of environmental policy are intensified in the case of sufficiency. In the following we outline problems associated with policy intervention in this field that should be taken into account in the elaboration of sufficiency policy.

A first set of issues are governability, i.e. the extent to which the matter can be adressed by policy, and government capacity. In the case of sufficiency as system innovation the question is therefore to what extent complex social-technical and normative factors like the building stock, mobility behaviour and social understanding of wealth can be changed by policy intervention. Physical or cognitive "path dependencies" frequently play a major role in this context, making any europhia about steering in this field misplaced. Policy cannot engender sufficient lifestyles on its own, yet it will be difficult to achieve these changes without policy in our view (see Chapter 3 on system innovation and Chapter 4). What is needed is a "governmental intervention with expanded participation", which triggers "search processes" and lends direction to them by means of a suitable framework and strategic course of action (WBGU 2011). Framework conditions, resistance and the dynamics of social change have to be taken into account.

From a legal perspective, the elaboration of sufficiency measures (in particular bans, volume control and higher levies) can come up against boundaries set by **constitutional and European law**, especially with regard to fundamental rights such as freedom to act, occupational freedom and guarantee of ownership. However, with environmental protection embedded as a goal in European primary law (Art. 191 para 1 TFEU) and the protection of the natural foundations of life in Germany's Basic Law (Art. 20a Grundgesetz),[10] the legal framework does allow scope for action to pursue sufficiency policy in principle. The lawfulness of curtailing a fundamental right can only be decided on a case-by-case basis and depends on the specific legally protected right concerned and the purpose for which and intensity with which it is to be curtailed. The demands on

[10] Moreover, the Rio Declaration, which was signed by Germany, contains the following principle (Principle 8): "To achieve sustainable development and a higher quality of life for all people, States should reduce and eliminate unsustainable patterns of production."

justification for such an intervention become more strict, the higher the value of the legally protected right and the more serious the intervention concerned. In each instance, proportionality needs to be ensured. For an elaboration of sufficiency measures that complies with fundamental rights, transitional regulations may be necessary.

The **effects on economic growth and the economy overall** constitute another challenge. Sufficiency will entail – at least in some (e.g. resource-intensive) sectors – a reduction of material consumption and other consumption that is measured monetarily. Other sectors (e.g. labour-intensive services) could continue to grow. Some of the concerns associated with a decreasing GDP have already been convincingly rebutted – particularly the concern that less growth and consumption necessarily means less wealth and quality of life.[11] Other challenges arising from the dependence of key societal areas on growth (e.g. job market, social security systems and public finances) require a more in-depth search for solutions (see Seidl/Zahrnt 2010). The recent post-growth discourse is concerned precisely with this (ibid.; see also, for example, Jackson 2009; Paech 2012; Welzer/Wiegandt 2013). In any case, possible costs and risks of sufficiency should be compared with the benefits for the environment and society and the overall economic costs and risks of a "more of the same" approach.

In terms of rebound effects, there are two kinds of risks associated with policy intervention; however, they are not specific to sufficiency. Direct rebound effects are not possible with the action in question since sufficiency measures (should) bring about a reduction in consumption. Nevertheless, isolated cases of sufficiency behaviour in which money and perhaps also time are saved can lead to **displacement effects which shift consumption to other areas**. For example, money saved by not using the car can be used to purchase an air ticket. This is an argument in favour of instruments which address all (multiple) or at least the most resource-intensive areas in which action needs to be taken. In this way, displacement effects would only go in the direction of less resource-intensive or high-quality and long-lasting products and services. Cultural change can also prevent such displacement effects arising.

Furthermore, there is also the risk of a **global rebound effect** in the case of reduction measures which are only implemented by a few countries. This global rebound effect occurs when these countries' decreasing demand for resources leads to lower world market prices and is compensated by the increasing demand of other countries, provided that these countries are not obliged to decrease resource consumption based on an international agreement. At the same time an ambitious reduction strategy including sufficiency can serve as a model for other countries and increase their willingness to negotiate and make compromises in this direction.

In addition to the above-mentioned problems, there are also *acceptance problems* in the case of sufficiency policy. Suggestions and concepts that can be associated with deprivation – first and foremost with policy-induced deprivation – encounter scepticism and often defensive reactions and accusations ("eco-dictatorship"). In turn, this causes anxieties about addressing sufficiency in policy and sometimes also in research, which is exacerbated by the political logic of short-termism that arises with limited parliamentary terms.

One fundamental challenge for the acceptance of sufficiency (not only sufficiency policy) is the inherent **change in consumer benefit**. While the key benefit of sufficiency – environmental protection – is pre-eminently long-term and socially distributed, sufficiency behaviour is initially

[11] On the individual level, results of empirical research into happiness show that, when a certain level of prosperity is reached, life satisfaction no longer increases in parallel to household income/furnishings. From this level, social relationships and time ("time prosperity") become more important for increasing life satisfaction. A representative survey conducted for the Bertelsmann Foundation (2010) found that Germans view health (80%) and good relationships with their family and partner (72%) as the most important sources of personal quality of life. "More money and possessions" was specified only by 12%. Accordingly, awareness that GDP is not a good indicator of wealth (most recently in the report of the Enquete Commission of the German Bundestag 2013) has increasingly gained acceptance in society as a whole.

perceived by many as primarily a direct restriction of previously fulfilled needs, wishes and preferences. This negative perception is likely to vary strongly from person to person, but can be curbed when the necessity of a measure or its concomitant benefits ("simplify your life") are foregrounded. For this purpose, it should be remembered that the further the social values move away from the prevailing consumer culture, the more helpful and more "normal" the new behaviour will seem.

Moreover, there is a **conflict with the principle of individual freedom** in the case of sufficiency policy instruments which involve a large degree of intervention (bans, limits, or high charges). Putting limits on the freedom of the individual especially finds legitimation when it is necessary for safeguarding the integrity or the "freedom of others to pursue a similar end" (Kant). The understanding of when a government can legitimately intervene has expanded over time: from safeguarding order via social welfare to the "management of collective threats" (Habermas 1998). Beyond specific instances of causal behaviour and specific damage, collective causes and long-term "summation damage" have been increasingly addressed in policy efforts. The history of smoking policy shows how measures have gradually been introduced which, thanks to advances in knowledge and cultural change, were experienced as legitimate – measures which intervened more and more in the retail and advertising freedoms of manufacturers and the freedom of smokers to act, above all in order to prevent socially harmful behaviour (passive smoking). In the case of many environmental problems – particularly climate change – the discrepancy of cause and effect (damage) is widening with regard to time and place: it is now a matter of protecting future generations (on a national and international level) and their options for taking action. This includes the sustainability principle, to which Germany has long declared its commitment.[12]

The acceptance of sufficiency can also be exacerbated by economic effects – in two ways: far-reaching sufficiency may lead to a shrinking (sector-specific) economy and **jobs** may be lost (at least in the short term); and **distribution effects** experienced as socially unjust may arise when sufficiency policy leads to a significant increase in the prices of important goods (e.g. electricity). The latter problem needs to be taken into consideration in the choice, design and possible flanking of instruments (see the next chapter). Attenuation of the effects of sufficiency on the labour market is an important issue in post-growth discourse (see above). Deliberations in this area primarily tend to focus on the distribution of working hours.

Sufficiency policy has to face all these challenges and develop effective, legally admissible, economically feasible and socially accepted steps to meet them.

7. Outline of sufficiency policy

Even if sufficiency policy seems difficult, sufficiency and its political promotion are essential. However, given the challenges described above, it is important that sufficiency policy is designed, embedded and communicated well. In the following, we outline how this can be achieved.

As mentioned above, sufficiency measures alone are not the solution. They must be embedded in a policy mix with efficiency and consistency measures. In addition counter-productive measures, particularly subsidies that have environmentally harmful effects, need to be removed. Not only consumers but also producers and infrastructure need to be addressed by a policy mix. In addition, it is recommended that a "salami-slice strategy" is used. The history of smoking shows how ever more far-reaching policy measures were introduced and a dynamic arose whereby measures became possible within a short period of time (in this case, the introduction of extensive bans on smoking in 2006/07 in Germany) that would not have been conceivable 20 years ago. Measures

[12] According to the oft-used definition of the Brundtland Commission (1987) sustainable development is a development "which development which meets the needs of current generations without compromising the ability of future generations to meet their own needs."

can help foster a change in culture, which in turn can politically enable the implementation of measures that would not have been possible previously.

As a starting point for a sufficiency policy it is advisable to address products and actions which have high potentials for environmental benefits ("big points") and additionally seem to be strategically the most promising because they have a ripple effect or change non-sustainable structures ("key points") (Bilharz 2008; Fischer/Grießhammer 2013). When choosing and designing instruments, intervention should – not only for legal reasons – be congruous with the benefit potential. Social distribution effects must also be taken into consideration. If – particularly in the case of negative incentives – low incomes are disproportionally burdened, this must be counteracted, e.g. by implementing a progressive structure or flanking instruments. Measures and their interactions need to be repeatedly evaluated and if necessary adjusted – described as "reflexive governance" in Voss et al. 2006[13].

Despite the "salami-slice strategy" and cultural change, policy measures geared to sufficiency will not find favour among many people. Therefore the communication of and a serious dialogue on sufficiency will be crucial to improving and achieving acceptance. In the case of sustainability deploying positive communication which foregrounds personal profit motives for the consumer is often suggested. Belz and Reisch (2007: 307) recommend the communication of positive effects relating to health, fitness, money, time and social recognition instead of deprivation. However, Linz (2012: 102f.) qualifies the usefulness of this approach: "It doesn't make much sense to gloss over the loss of certain objects and experiences with cosmetic terms. … Speaking above all in terms of restrictions, frugality and modesty makes sufficiency difficult. But exclusively presenting it as profit and benefit destroys its credibility." There is, according to Linz, a third reason (alongside expectation of profit and fear of loss) which can motivate people to make radical changes to their behaviour – recognition of necessity: "The vast majority of people adapt without much resistance to that which they experience as unavoidable – subject to two conditions: that which is demanded of them must be coherently substantiated and it must apply to all, depending on capability." (ibid.)[14].

In our view, acceptance depends on getting the right mixture in communication and reasoning: the necessity of sufficiency policy and the contribution that a measure makes to solving the problem should always be key components of political communication. Additionally, the "positive side effects" and the benefits of environmentally-friendly options should be indicated in communications. Positive side effects can be, for instance, greater quality of life or possible financial savings – after all, according to the 2012 German Study on Environmental Awareness, cost saving is the key motivation for a household becoming more sustainable (Rückert-John et al. 2013). When communicating sufficiency, it can also be helpful to refer to how certain behaviours and conditions (e.g. speed limits) are taken for granted in other countries.

Without abandoning the conceptually useful term "sufficiency", it can nevertheless be beneficial in political discussions to avoid speaking of the importance and necessity of "sufficiency" and "sufficiency measures" in a generalized way. Instead it is helpful to speak in terms of necessity and the consumer benefit specific to the case at hand (e.g. reducing meat in one's diet). Furthermore, an overarching transformation narrative, a positive vision of a resource-light lifestyle which can accommodate the temptations of a consumer society, seems useful in accompanying and in the political promotion of change (Welzer 2013).

8. Need for further research

This working paper presented – alongside the understanding of sufficiency elaborated in Fischer/Grießhammer (2013) – some first considerations on a policy-supported realization of

[13] Authors' translation.
[14] Authors' translation.

sufficiency. Further research is needed on many issues relating to the development of specific sufficiency policies. We see a need for further research in natural sciences, engineering, economics and social sciences on the following issues:

- What are the ecological boundaries and the need for action beyond energy and climate protection – e.g. in terms of raw materials, biodiversity, land or water? What are the interactions, what problematic shifts could occur?
- What is the problem-solving potential of efficiency, consistency and sufficiency strategies in different areas in which action is needed, taking into account costs and rebound effects? How should the sustainability strategies be combined? In what areas is sufficiency especially needed?
- What is a suitable policy mix of specific and general sufficiency instruments in view of the potential for decreasing environmental impacts, of efficiency, of legal and political feasibility, of distribution effects and of social acceptance?
- What economic impacts of sufficiency and combined efficiency/consistency/sufficiency measures are actually to be expected? What strategies can be used to diminish the current dependence on growth?
- How can social transformation be shaped (politically)? What role do different social stakeholders play in the transformation towards a sustainable culture?

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