

**Faculty of Forestry and Agriculture
Department of Economics and Management
Institute for Consumer Economics**

**Debunking Weak Sustainable Consumption
Towards Strong Sustainable Consumption Governance**

Sylvia Lorek

Academic Dissertation

**To be publicly discussed with the permission of the Faculty of Forestry and Agriculture
University of Helsinki,**

University Main building, Auditorium XV, Unioninkatu 34, 4. floor

Friday 11.12.2009 at noon

Helsinki, 2009

Supervisors

Visa Heinonen
Professor
Consumer Economics
Department of Economics and Management
Faculty of Agriculture and Forestry
University of Helsinki

Minna Autio
Senior Lecturer, D. Sc. (Agr. & For.)
Consumer Economics
Department of Economics and Management
Faculty of Agriculture and Forestry
University of Helsinki

Chiara Lombardini-Riipinen
University lecturer
Department of Economics and Management
Faculty of Agriculture and Forestry
University of Helsinki

Pre-Examiners

Eva Heiskanen
Research Professor, National Consumer Research Centre
Adjunct Professor, Helsinki School of Economics
Finland

Oksana Mont
Associate Professor
International Institute for Industrial Environmental Economics
Lund University
Sweden

Opponent

Mikko Jalas
Research Fellow, D. Sc. (Econ.)
Organization and Management
Helsinki School of Economics

ISBN
978-952-10-5896-7 (paperback)
978-952-10-5897-4 (PDF)

Abstract

Achieving sustainable consumption patterns is a crucial step on the way towards sustainability. The scientific knowledge used to decide which priorities to set and how to enforce them has to converge with societal, political, and economic initiatives on various levels: from individual household decision-making to agreements and commitments in global policy processes. The aim of this thesis is to draw a comprehensive and systematic picture of sustainable consumption and to do this it develops the concept of Strong Sustainable Consumption Governance. In this concept, consumption is understood as resource consumption. This includes consumption by industries, public consumption, and household consumption. Next to the availability of resources (including the available sink capacity of the ecosystem) and their use and distribution among the Earth's population, the thesis also considers their contribution to human well-being. This implies giving specific attention to the levels and patterns of consumption.

Methods: The thesis introduces the terminology and various concepts of Sustainable Consumption and of Governance. It briefly elaborates on the methodology of Critical Realism and its potential for analysing Sustainable Consumption. It describes the various methods on which the research is based and sets out the political implications a governance approach towards Strong Sustainable Consumption may have. Two models are developed: one for the assessment of the environmental relevance of consumption activities, another to identify the influences of globalisation on the determinants of consumption opportunities.

Results: One of the major challenges for Strong Sustainable Consumption is that it is not in line with the current political mainstream: that is, the belief that economic growth can cure all our problems. So, the proponents have to battle against a strong headwind. Their motivation however is the conviction that there is no alternative. Efforts have to be taken on multiple levels by multiple actors. And all of them are needed as they constitute the individual strings that together make up the rope. However, everyone must ensure that they are pulling in the same direction.

It might be useful to apply a carrot and stick strategy to stimulate public debate. The stick in this case is to create a sense of urgency. The carrot would be to articulate better the message to the public that a shrinking of the economy is not as much of a disaster as mainstream economics tends to suggest.

In parallel to this it is necessary to demand that governments take responsibility for governance. The dominant strategy is still information provision. But there is ample evidence that hard policies like regulatory instruments and economic instruments are most effective.

As for Civil Society Organizations it is recommended that they overcome the habit of promoting Sustainable (in fact green) Consumption by using marketing strategies and instead foster public debate in values and well-being. This includes appreciating the potential of social innovation. A countless number of such initiatives are on the way but their potential is still insufficiently explored. Beyond the question of how to multiply such approaches, it is also necessary to establish political macro structures to foster them.

The thesis is based on the following publications:

1. Lorek, Sylvia; Spangenberg, Joachim H. (2001). "Indicators for environmentally sustainable household consumption." Int. J. Sustainable Development 4(1): 101-120.
2. Spangenberg, Joachim. H.; Lorek, Sylvia. (2002). "Environmentally sustainable household consumption: From aggregate environmental pressures to priority fields of action." Ecological Economics 43: 127-140
3. Fuchs, Doris; Lorek, Sylvia. (2002). "Sustainable Consumption Governance in a Globalizing World." Global Environmental Politics 2:1: 19-45.
4. Lorek, Sylvia. (2002). „Die Macht der Verbraucher?—In: Margarete Wohlan (Hrsg.) Die Zukunft der Wirtschaft - Landwirtschaft und Ernährung. Bonn, Bundeszentrale für politische Bildung: 8-13.
5. Lorek, Sylvia. (2003). „Haushaltskonsum als Beitrag zur ökologischen Nachhaltigkeit—In: J. H. Spangenberg. (Hrsg.). Vision 2020. München, ökom verlag: 223-238.
6. Fuchs, Doris; Lorek, Sylvia. (2005). —Sustainable Consumption Governance – A History of Promises and Failures—. Journal of Consumer Policy 28: 261-288.

Acknowledgements

Having completed my doctoral thesis, there only remains the pleasant duty of writing the acknowledgements. It allows me to remember and thank all those who helped this intellectual child on its way. In my case I am not only looking back on the last four years. In fact, work on the content of this thesis started over a decade ago and even this was part of a longer process relevant for the thesis.

However, starting with the most recent I would like to thank my supervisor Prof. Visa Heinonen for his constant encouragement and fruitful sharing of his knowledge. Similar thanks should also go to Dr. Chiara Lombardini-Riipinen, who guided the development of my arguments in the early stage of the writing and Dr. Minna Autio whose comments inspired me after a long break in the writing process. I would like to give additional thanks to Minna for all her practical help in organizing the various tasks associated with the publication and defense of the thesis. Stefan Wahlen deserves my thanks as I could always rely on him when I was lost a bit as a foreign student only visiting Helsinki occasionally.

I would like to thank the official pre-examiners Prof. Oksana Mont and Prof. Eva Heiskanen. Their constructive comments were very helpful in sharpening my arguments. A special thank you also goes to Eva, as it was initially her idea that I start a Ph.D. in Helsinki and it was her who introduced me to Visa.

Looking further back along the path that led to this thesis, the importance of Dr. Joachim Spangenberg for my academic and personal development can hardly be overestimated. His trust in my professional potential surprised me on various occasions, and due to him I took up challenges I would never have considered without him. First, knowing me as a volunteer in the German NGO community he hired me as a project coordinator at the Wuppertal Institute. Second, he insisted on publishing the research results of this project in an academic journal, and third, he continuously raised the pressure to write a doctoral thesis. Regarding the latter, he teamed up with my dear friend Prof. Doris Fuchs, a source of inspiration and academic challenge at the same time. My deepest thanks to Doris and Joachim for working with me on the projects and articles this thesis is based on and also for carrying me through a few intellectually lean times in the writing of the thesis.

Last but not least for their cooperation with my research, I would like to thank all my colleagues in the SERI network, represented here by Dr. Friedrich Hinterberger and Dr. Ines Oman, as they are the colleagues with whom I have worked together the longest. I am thankful that SERI has developed as my academic home within the past decade.

Looking back on my career, I would also like to thank all those who helped me to become involved in the German and international NGO Community on Sustainable Consumption. I extend special thanks to Dr. Christian Mittag for introducing me to the German NGO Forum for Environment and Development as well as Dr. Peter Mucke and Dr. Jens Martens for sending me to the CSD. It was the starting point for my further engagement in the UN processes.

I am also deeply grateful for the inspiring and fruitful debates and activities with my dear colleagues and friends within ANPED and the Task Force on Lifestyle in the German Forum. I should also like to thank them for all the good times we had together, which all contributed to build up the trust and create the energy required to go on towards the common goal. I must apologise for not "being there" as much as I would have liked in terms of their activist work during the writing of my thesis, and I hope I have not upset them too much.

My sincere and warm thanks to my family: here, in order of their appearance in my life. To my wonderful parents Trudel and Thomas Lorek, thanks for the endless encouragement they have given me during my entire life; to my beloved husband Jörg Bublies without whom nothing would be important in my life; to my parents in law Gretel and Günter Bublies whose love and willingness to help their family we could always count on, and finally to my marvelous children Gina and Sven Bublies, my ongoing sources of pride and joy.

Table of contents

Abstract	3
Acknowledgements	5
1. Introduction	9
2. Setting the scene	16
2.1. The systemic challenges for our consumption patterns	16
2.2. Sustainable Consumption	19
2.2.1. Some basic definitions	19
2.2.2. Optimising products and services: a Weak Sustainable Consumption approach	21
2.2.3. Requesting levels and patterns of consumption: a Strong Sustainable Consumption approach	24
2.3. Governance	26
2.3.1. Definitions and origins of Global Governance	27
2.3.2. Sustainable Development as a challenging field for Global Governance	29
2.3.3. Necessary requirements for successful Global Governance	31
3. Methodological framework of the dissertation	32
3.1. The contribution of Critical Realism to the perception of Sustainable Consumption	32
3.2. Sources	36
3.3. Methods used	38
3.3.1. Identification of environmentally relevant household consumption clusters	40
3.3.2. An actor-centred approach	45
3.3.3. Methodology to assess the influence of globalisation on consumption	46
4. Towards Sustainable Consumption Governance	51
4.1. Where households can make a difference	51
4.2. National governance: who else can make a difference	53
4.3. Globalisation as a challenging framework	56
4.4. Global Governance: actors on the global level	62
5. Towards research for Strong Sustainable Consumption	66
5.1. Some of my own contributions	66
5.1.1. Sustainable Production and Consumptions Systems	66
5.1.2. The effectiveness of Sustainable Consumption policies	67
5.2. Further research needs	70
6. Political realities and necessities	72
ANNEX	76
7. Bibliography	83

List of abbreviations

EC	European Commission
EU	European Union
GDP	Gross Domestic Product
IGO	International Governmental Organisation
IMF	International Monetary Fund
IPP	Integrated Product Policy
LCA	Life cycle assessment
NGO	Non-Governmental Organisations
OECD	Organisation for Economic Cooperation and Development
SCP	Sustainable Consumption and Production
TNC	Trans-National Cooperation
UN CSD	United Nations Commission on Sustainable Development
UN DESA	United Nations Department on Economic and Social Affairs
UN DSD	UN Division for Sustainable Development
UNEP	United Nations Environment Programme
UNDP	United Nations Development Programme
WSSD	World Summit on Sustainable Development
WTO	World Trade Organisation

1. Introduction

The major cause of the continued deterioration of the global environment is the unsustainable pattern of consumption and production, particularly in industrialized countries, which is a matter of grave concern, aggravating poverty and imbalances.

(United Nations 1992)

It was in 1992 when these words were agreed upon by representatives of (nearly) all states on Earth in the 'Agenda 21'. Little has been done since then to change this matter of concern. The opposite can be observed. Humanity is facing a variety of serious threats: on the environmental side global warming and resource scarcity, on the social side increasing inequity, and economically the threats of a peak in oil supply and the reliance on growth, innovation, and technological solutions build a locked in situation in a system increasing the problems instead of solving them. Beyond the effects on humans themselves a further burden is placed on the biosphere and biodiversity.

Unsustainable consumption and production patterns are still the core of these threats and need radical change.

So the question emerges: What kind of concept is needed to ensure a good life for everyone within the carrying and sink capacities of our planet?

The answer, formally agreed upon at the global level at the UN Conference for Environment and Development in Rio 1992, is the normative concept of Sustainable Development. It is based on the insight that resources on Earth are limited and too unevenly distributed.

From an ethical point of view, all people on Earth hold the same right to get a similar share of these resources. If natural resources as the source of materials and energy and as a sink for pollution are perceived as the common heritage of mankind assuring equity in entitlements, then every human being has the same right to access these resources. This can be called people's "fair share" in resource use.

This right to equal resource distribution does not only apply to the people living in the present (intra-generative justice), but also to those people to come (inter-generative justice).

All these aspects are included in the definition of Sustainable Development presented by the "Brundtland Committee" in its report "Our Common Future", especially in the report's full version, which explains the two concepts behind the term in detail.¹

Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts:

- *the concept of needs, in particular the essential needs of the world's poor, to which overriding priority should be given; and*
- *the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs.*

(Brundtland 1987)

¹ Frequently, the 'Brundtland Definition' of Sustainable Development that is found in publications turns out to be only the first sentence, which is a bit less precise and leaves more space for interpretation.

Quickly politicians and researchers developed different theoretical concepts as to how Sustainable Development could be achieved, basically separating into an ecological and an economic line of argument (Goodland, Daly et al. 1991; Worldbank 1992; Lorek 1993). While the former concentrated on the limited capacities of planet earth and called for accepting them as boundary conditions for economic activities the latter focussed on economic development, taking ecological considerations into account where possible.

Analysing the lifestyles of the European and American (Galbraith 1958; Schor 1998)—but increasingly also the Asian and Latin American—consumer classes (Worldwatch Institute 2004), it can be argued that they neither tend to restrict their consumption to their fair share of resource use and sinks nor care to ensure access of others to their fair share. So, how to reduce their (or more precisely our) environmental impacts? This can partly be done—and in fact is done—via technical solutions. Several environmental problems of former times have been solved in the industrial countries, mainly those involving emitting pollutants like SO₂ causing acid rain or eutrophication through detergents. Also, the energy consumption of newer household appliances has been reduced. All these important and extremely necessary contributions can be summarised under the aspect of sustainable production or sustainable products and are reflected in concepts like Ecological Modernisation (Ayres and Simonis 1993; Weizsäcker, Lovins et al. 1998), Industrial Ecology (Ayres, Ayres et al. 1996; Erkmann 1997) or Integrated Product Policy (IPP) (Rubik and Scholl 2002; Scheer and Rubik 2006). However, as it turns out, technological solutions are not enough (Beck 1986; Cohen 1997).

With the increasing rise in the standard of living most of the technical solutions for reducing pollution, and even more so for reducing material or energy consumption, turn out to be insufficient as their effects are cancelled out by economic growth processes. This is where the necessity of opening up the perspective from production and products towards Sustainable Consumption emerges. Chapter 2 in this thesis is therefore devoted to the elaboration of concepts which stand behind the term Sustainable Consumption, for example a resource consumption approach or an individual household consumption approach.

During my studies, I have become increasingly aware of the fact that Sustainable Consumption is pursued via two kinds of pathways. One is to choose products and services that are either less resource consuming, or less burdening for the environment, or less destructive for people actually producing them (fair trade aspects). This, I argue, is a Weak Sustainable Consumption approach. A second pathway is to reduce the level of consumption (Fuchs and Lorek 2005). While the former pathway has already proved to be a tricky challenge in practice and has been dealt with in thousands of research studies, campaigns and conferences all over the world, it is the latter one that seems necessary if serious problems for the Earth and its inhabitants are to be avoided (Heinberg 2003; Hirsch 2005; Jackson 2009). To highlight this pathway's importance I call it "Strong Sustainable Consumption".

This thesis is based on and combines the insights I have gained in my research on Sustainable Consumption to date and describes its coherence and interlinkages. As a major new contribution I uncover what I observe as a major pitfall of the actual (political) debate on sustainable consumption: the different understanding different actors have as to what sustainable consumption means and - resulting from these different understandings - the different strategic concepts promoted how to reach it. Being aware of these differences is highly important for those working on Sustainable Consumption. The assumption that other partners in the debate are striving for the same objective often leads to misunderstandings that are only discovered when it comes to in-depth discussion on content. The result of those discussions frequently appears to be a waste of time and is source of ongoing frustration among those engaged in Sustainable Consumption and Sustainable Consumption Governance.

Therefore, I develop further the concept of Strong versus Weak Sustainable Consumption and its Governance. The terms were first used in the paper –Sustainable Consumption Governance – a history of promises and failures” published in 2005 (Fuchs and Lorek 2005). Since then, it has become increasingly evident that there are different understandings of the term Sustainable Consumption.

One of the early conferences on Sustainable Consumption, the so called Oslo Symposium held in 1994, defines Sustainable Consumption as

... the use of services and related products which respond to basic needs and bring a better quality of life while minimising the use of natural resources and toxic materials as well as the emissions of waste and pollutants over the life-cycle so as not to jeopardise the needs of future generations.

(Norwegian Ministry for the Environment 1994)

This definition was taken up in the Sustainable Consumption Work Programme of the UN Commission on Sustainable Development (CSD) (UN Commission on Sustainable Development 1995).

Countless governmental and non-governmental meetings and publications since then refer to this definition.

Based on it I would like to introduce the following formalised definition:

Sustainable Consumption seeks to achieve a high ratio of basic need fulfilment per resource use or, in other words, is an effective contribution to human well-being per resource use.

Figure 1. Sustainable Consumption as a relation of human well-being and resource use

$\text{Sustainable Consumption} = \frac{\text{Need fulfilment}}{\text{Resource use}} \quad \text{or in other words} \quad \frac{\text{Human well-being}}{\text{Resource use}}$
--

Figure 2 displays a factor analysis, illustrating one way of how the flow from resources used to contribute to human well-being can be fragmented into various components.

Figure 2. Effective resource use for human well-being—fragmentation of Sustainable Consumption

$\text{Sustainable Consumption} = \frac{\text{physical input}}{\text{resource used}} \times \frac{\text{product produced}}{\text{physical input}} \times \frac{\text{service provided}}{\text{product produced}} \times \frac{\text{service consumed}}{\text{service provided}} \times \frac{\text{human well-being}}{\text{service consumed}}$
$\text{sourcing efficiency} \quad \text{production efficiency} \quad \text{product efficiency} \quad \text{service efficiency} \quad \text{effective provision of human well-being}$

Source: My own figure inspired by (Spangenberg and Fuad-Luke 2009)

- *Sourcing efficiency* strives, for instance, for efficient mining to generate the physical input needed for production processes.
- *Production efficiency* seeks to enhance a high ratio of products produced from the physical input.

- *Product efficiency* is about efficient service supply from the produced products (e.g. efficient appliances).
- *Service efficiency* increases the factual rate of services consumed from the services provided (e.g. sharing instead of individual ownership).
- *Effective provision of human well-being* is about the contribution of the service consumed to the well-being of the consuming individual (bio fuel versus food).

The components provide the different intervention points for Sustainable Consumption Governance and the intervention points require different approaches to increase the efficiency within each fragmentation step. Sourcing efficiency, production efficiency and product efficiency mostly focus on efficiency gains based on technological developments. The first two fall under the category of sustainable production; the third is about more sustainable products. These three aspects are already quite conventional intervention points in environmental research and policy. Service efficiency considers gains from the societal organisation of consumption and from consumer attitudes. This aspect increasingly enters the discourse and praxis on Sustainable Consumption (Mont 2000; Halme 2005; Manoochehri 2006; Tukker and Tischner 2006).

The most challenging point in the term is the effective provision of human well-being. On the first view it refers to the quality of services and the degree to which they meet human needs. The well-being effect can be expected to be quite high when the service fulfils basic needs like food or shelter. It can be strongly expected, too, to be less high if the service is one's 20th pair of shoes, however efficiently they have been produced in the previous steps.

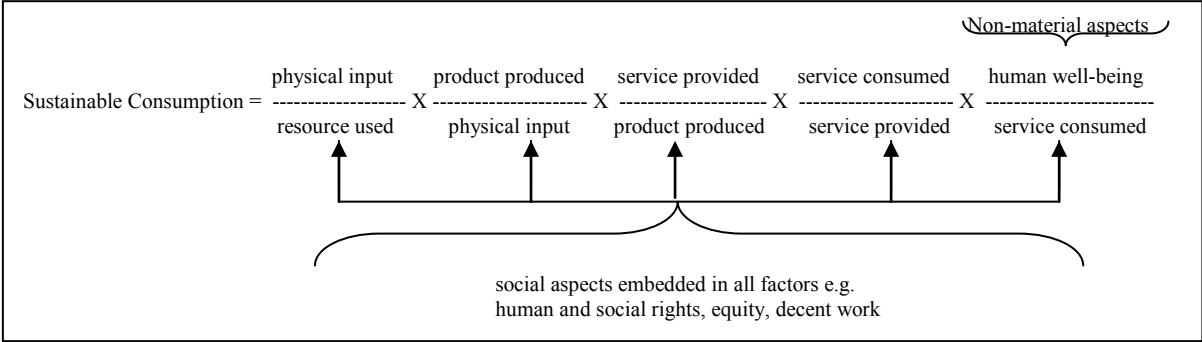
On the second view the inclusion of human well-being in the concept of Sustainable Consumption points towards two crucial questions: "For what should the available resources be used best?" and "What contributes to human well-being beside goods and their services?"

Regarding the first question the normative approach of Sustainable Consumption implies channelling resource use towards those consumers where marginal utility is highest. This indicates in turn the need to ensure that reductions in material consumption fall on those with the lowest marginal utility of consumption, the wealthy (Beddoe, Costanza et al. 2009). The factor analysis integrates the two key concepts of the Brundtland Definition as well as the Sustainable Consumption Definition of the Oslo Symposium: prioritise the needs of the world's poor within the concept of limited resources.

The latter question opens the perspective to recognise that – as soon as some basic material need fulfilment is ensured – further, non material factors gain increasing importance for the wellbeing of humans like safety, belongingness, social coherence, equity, and social relations (Scitovsky 1992; Rauschmayer, Omann et al. 2008).

The factor analysis as presented in Figure 2 appears "material" oriented. This shortcoming is only a didactic decision to reduce complexity. As the questioning of human well-being indicates, the optimisation of material efficiency alone including social aspects, will without doubt fail to meet the requirements of Sustainable Consumption (Rijnhout and Schauer 2009). Therefore in Figure 3, I prefer to highlight explicitly that social and other non-material aspects have to be embedded the term human well-being but also in all other the fragmentation factors. These social elements rank from basic social rights in general, like human rights or the right to decent work, via equity in access to production and consumption to strengthening the human and social capital for production and consumption by strengthening social inclusion and supporting more equity in societies.

Figure 3 Social and other non-material aspects of Sustainable Consumption



Note that in the whole fragmentation construct monetary values and thus markets do not play any role—neither are they being excluded, nor are they essential for this description of consumption (Røpke 2009). It reflects the actual debate on how to measure human well-being, especially the shortcoming of its restriction to monetary values (Stiglitz, Sen et al. 2009).

Throughout my thesis I refer to this formalised definition of Sustainable Consumption (using the less complex Figure 2). I reflect on how different actors show different understandings of Sustainable Consumption and indicate this by using the factor analysis. In doing so, I point out which roles different actors in Governance for Sustainable Consumption can play and which they have to play.

Embeddedness of the thesis

The argumentation developed in this thesis is based on six papers published between 2001 and 2005. They in turn were developed in two major working relationships. First, the general findings about the priorities of consumption and how to tackle them best in an actor approach were developed during my time at the Wuppertal Institute when carrying out a project on “Priorities, Tendencies and Indicators of Sustainable Consumption” on behalf of the German Federal Environmental Agency (UBA). In this context credit has to be given to Joachim H. Spangenberg who supervised the project and contributed valuable hints for the direction of the work. Secondly, the insights into how globalisation influences Northern consumption and the analysis of Sustainable Consumption Governance are built on co-operative work with Doris Fuchs, meanwhile Chair of International Relations and Development Policy at the University of Münster, Germany.

Each of the research themes had their own research questions.

In response to the questions “Which areas of consumption are of priority relevance for the environment?” and “In which consumption clusters do households have sufficient influence on the environmental performance?” my research lead to the profound answer that it is housing, food and mobility which matter most (Lorek 2001; Spangenberg 2002). These findings are confirmed by various other studies which emerged in parallel or later on (Noorman, Biesiot et al. 1999; Vittersø, Strandbakken et al. 1999; Gatersleben, Steg et al. 2002; Lähteenoja, Lettenmeier et al. 2007; Nissinen, Grönroos et al. 2007). Chapters 3.3.1 and 4.1 elaborate on the methodology and summarise the results.

There is less agreement – or rather it is a matter of ongoing debate, is “Who has the capability and carries responsibility for influencing consumption options and consumption behaviour to become more sustainable?” To contribute here my research focused on answering the question “How can the relative influence of a specific group of actors in relevant areas of change be

elaborated and made visible?‘ Our findings show that in any case concerted actions are needed, with regulatory incentives and business engagement playing a major role (Lorek 2001; Spangenberg 2002). Research methods and more detailed results can be found in chapters 3.3.2 and 4.2.

On another research track – trough inspired by the restraints national actors face in shaping consumption patterns – I asked ‘How do specific characteristics of globalisation impact the possibilities of Sustainable Consumption decisions in the developed countries, directly or indirectly?’

The results of this research showed that crucial decisions are made long before the consumer purchases a product. It is mainly capital concentration and shift in political power that lead to a shift in transport options from public to private transport, the centralisation of energy provision, and a vertical concentration in the agro-food system influencing production and products and thus the choice in the (super) markets. (Fuchs and Lorek 2001; Fuchs and Lorek 2002). Consequently, reaching Sustainable Consumption requires much more than just giving information to the consumers about which (labelled) goods to put into their shopping baskets (Moisander 2001; Autio, Heiskanen et al. 2009). Rather, a fundamental shift of structures and framework settings is needed: that is, Global Sustainable Consumption Governance. Chapters 3.3.3 and 4.3 provide more detailed answers.

But ‘who are the relevant and responsible agents for such a shift, and what could they do?’ The answer I found was not the most encouraging one. Business in this context mainly equals multinationals and in contrast to small-size, local-based, family-owned businesses they are less interested in Sustainable Consumption. Instead, they are streamlined to profit-making and serving shareholder interests or short-term management goals. Consumers worldwide are concerned that reduced consumption implies a reduced quality of life. Governments depend on business power and taxes, and on the consumers‘ opinions as citizens and voters in such a way that they do not see that they see they have much of a mandate to foster Sustainable Consumption. International organisations like the UN, who initially pushed for Sustainable Development and Sustainable Consumption, in turn depend on governments. As a result, Sustainable Consumption is a high-hanging fruit and thus low on the political agenda. The only agents to bring Sustainable Consumption forward are scientists and civil society organisations (Fuchs and Lorek 2005). The argumentation and the information these findings are based on can be followed in chapter 4.4.

Further on, the argumentation in this thesis is influenced by more recent work.

My research on the evaluation of the effectiveness of policy instruments for Sustainable Consumption led to the finding that the general perception and instrument canon is still dominated by informational instruments with less emphasis on mandatory or economic instruments.

Our research results clearly indicate that most instruments and bottom-up initiatives work most effectively regarding the environment when they are guided by clear and reliable administrative frameworks (Lorek, Giljum et al. 2008; Lorek, Spangenberg et al. 2008).

Research I carried out on production-consumption systems complemented the experiences and efforts of sector-, place-, product- and consumer-oriented approaches with analytical perspectives and practical initiatives treating production and consumption jointly. This systemic view should help to tackle sustainability failures in a system at those point(s) which are most effective (Lebel and Lorek 2008; Lebel and Lorek 2010).

Both research projects are described in chapter 5.1.

Institutionally, this thesis is embedded in the research effort of the Institute for Consumer Economics, Department of Economics and Management, Faculty of Agriculture and Forestry at the University of Helsinki. The institute has contributed to the multidisciplinary approach of consumer economics, ecological economics, political economics and institutional economics, in combination with historical and sociological research on the one hand, and in the development of a holistic view about how consumption has developed (in Northern societies and beyond), how it might develop in the future (Timonen 2002; Autio and Heinonen 2004; Autio and Wilska 2005; Autio and Heinonen 2007; Autio, Heiskanen et al. 2009) and how it may have to develop in the light of environmental requirements on the other hand (Moisander 2001).

Further on, as a vital element of an academic dissertation, I elaborate in detail the various methods used in my previous research. This will clearly show the characteristics of method triangulation (Webb 1978; Flick 2007). For instance, my research certainly contains elements of action research (Lewin 1946; Reason and Bradbury 2007) since my scientific findings frequently influence the work, positions, etc., of NGOs and politicians engaged in policy processes whilst the results (and stagnations) of the relevant political processes influence the further development of my research. Further methodologies I used (and still use) are policy analysis and content analysis (Holsti 1969; Krippendorff 2004). All methods are based on literature review and the use and collection of primary and secondary data (chapter 3.3). Additionally, I introduce the methodology of Critical Realism (Bhaskar 1978; Bhaskar 1979; Lawson 1997) as a valid approach to analyse the problem of Sustainable Consumption and Sustainable Consumption Governance (chapter 3.1.).

The structure of the thesis

The thesis is structured in the following way: Chapter 2 introduces the terminology and various concepts of Sustainable Consumption and of Governance. The third chapter is devoted to methodological aspects. There, I briefly elaborate on the methodology of Critical Realism and its potential for analysing Sustainable Consumption. The rest of the chapter describes various research methods I have used in my studies. The fourth chapter summarises the findings of my work and their contribution to scientific insights into Sustainable Consumption Governance. Chapter 5 reflects how the results of my work have either been taken up by other scholars or are in other ways related to more recent research. Finally chapter 6 sets out the political implications a governance approach towards Strong Sustainable Consumption may have.

2. Setting the scene

Humanity is facing a variety of serious threats: on the environmental side we know about global warming and resource scarcity, on the social side we observe increasing inequity, and economically the threats of peak oil and the reliance on growth, innovation and technological solutions build a locked in situation in a system, increasing the problems instead of solving them. Beyond the effects on humans themselves further burden is placed on the biosphere and biodiversity. All this calls for radical changes (Tukker 2008).

This thesis strives to sharpen the discussion on how radical the changes have to be. It is based on two major concepts: Sustainable Consumption and Governance. They complement each other in so far as Sustainable Consumption refers to content, while Governance is about the process behind the content. Only the combination of both envisions the full picture for change: *what* has to be done and *how* should it be done.

Highlighting Sustainable Consumption and Governance already indicates that, when talking about Sustainable Consumption, Governance is challenging in so far as Sustainable Consumption as well as Governance are terms which subsume a broad variety of meanings. Both terms are so general that they allow different interpretations of the underlying concepts. This frequently leads to misunderstandings among political actors as well as scholars using the same words but having substantially different concepts in mind.

Sustainable Consumption is used with different meanings by its proponents, depending on whether they see economic and market aspects or the limitations of the Earth's resources and carrying capacity as the core of Sustainable Consumption.

Governance, on the other hand, not only holds different meanings for different actors, but also different opinions can also be found about the necessary conditions to make governance processes successful.

In chapter 2.1, I briefly highlight some of the various challenges our lifestyles – and the systems providing them – are facing. In chapter 2.2, I describe the different interpretations of the term Sustainable Consumption during its short history and explain why I consider it necessary to distinguish between the concepts of Weak and Strong Sustainable Consumption. Regarding Governance, elaborated in chapter 2.3, the focus of consideration is on Global Governance. I also reflect on the historical conditions of its appearance and elaborate the challenges it faces as an instrument of decision making. Emphasis is given to Global Governance in the context of Sustainable Development, the overarching political strategy in which Sustainable Consumption is embedded.

2.1. The systemic challenges for our consumption patterns

Climate change

The threat most discussed is climate change or more precisely the possibility of a climate disaster. It now seemed to be agreed in global political circles, at least in terms of wording, that the average temperature on Earth should not increase by more than two degrees Celsius and that global greenhouse gas emissions should be substantially reduced by 2050 (Group of 8 2009). While this consensus in words may already be a political success it is far from reflecting the urgency of the measures that need to be taken to reach this target.

To stay within the limit of a two-degree warming, scenarios are calculated in which the atmospheric concentration of emissions is stabilized at 450 parts per million (ppm) in CO₂

equivalent terms. The World Energy Outlook 2008 published by the International Energy Agency clearly points out that even if the OECD countries were to reduce their emissions to zero, it would not be sufficient to put the world onto a 450-ppm trajectory (International Energy Agency 2008). Strong measures have to be taken and they have to be taken right now. The Intergovernmental Panel on Climate Change (IPCC) calculates that governments only have until 2015 to manage the turnaround to decreasing greenhouse gas emissions (IPCC Intergovernmental Panel on Climate Change 2007). Not much time for such a radical change. A website initiated by the New Economics Foundation alarmingly warns us that there are one hundred months to save the planet² (with the countdown starting in August 2008) (New Economics Foundation 2008).

Overuse of resources

While greenhouse gas emissions reflect the limits of the sink capacity of planet earth its production capacities are also overstressed. The Global Footprint Network regularly calculates the availability of renewable resources measured in the amount of biologically productive land and their overuse.

They found out that in 1986 humanity for the first time used more resources in a year than nature can generate within one year. The overuse of resources has reached an alarming dimension since then. The resources available for a year are consumed earlier year by year. Meanwhile, the day when human beings start living beyond the annual reproduction capacity of the globe is annually calculated as the Earth Overshoot Day. In 2008 Earth Overshoot Day moved forward already to September 23. And the economic crisis did not change the picture. However dramatic the change for the financial markets has been, resource (over) use was not touched significantly. Earth Overshoot Day in 2009 was September 25.

This means that humanity used about 40% more resources in one year than nature could regenerate that same year. In other words it takes over a year and three months for the Earth to regenerate what humanity uses in one year (Global Footprint Network 2009).

These use patterns are quite uneven around the world. In Europe³, around 36 kg of resources are extracted per person per day but every European consumes 43 kg per day in average. This indicates that Europeans need resources from the other regions of the world to maintain their level of consumption. This unbalance is even higher in other world regions. An average North American consumes around 90 kg per day; inhabitants in Oceania about 100 kg per day. In Asia, resource consumption is about equal to resource extraction at around 14 kg per person per day. The average resource consumption of an African is only 10 kg per day and thus lower than the extraction of 15 kg per day. This means in Europe we consume three times as many resources as an inhabitant of Asia and more than four times as much as an average African. Inhabitants of other rich countries consume up to 10 times more than people in developing countries (SERI, GLOBAL 2000 et al. 2009).

Peak oil

At the centre of the global industrialized economy is a specific non renewable resource: crude oil. It is not only that transport depends on it but also the production of the petro-chemical industries, the origin of for example pesticides, fertilizer and fibers. For quite a while already it has been predicted that oil production will peak in the near future and will then decline. This

² Onehundredmonth.org

³ Europe excluding Russia

shrinking supply faces an increasing demand from growing developing but also developed economies. The effects are foreseeable: rising prices and potential conflicts about access to available oil reserves.

Peak oil has been the subject of debate by scientists for a long time. Meanwhile the International Energy Agency (IEA) is calculating alarming figures, too. A detailed assessment of more than 800 oil fields in the world, covering three quarters of global reserves, has found that most of the biggest fields have already peaked and that the rate of decline in oil production is now running at nearly twice the pace as that calculated just two years ago. Newly discovered oil fields are smaller and in most cases the oil is more difficult to extract (Campbell and Laherrère 1998; Hirsch 2005; International Energy Agency 2008). According to Fatih Birol, chief economist at the IEA 'we will one day run out of oil, it is not today or tomorrow, but we have to leave oil before oil leaves us, and we have to prepare ourselves for that day' (Connor 2009).

Renewables, efficiency and new technologies: limits of the easy solutions

Given that the problems presented by the earth's limited capacity are taken seriously new technological developments bringing efficiency and building on renewable resources are often held up as the solution. Doubling wealth with a halving of resource use is a popular concept in this context promoted as 'Factor 4' (Weizsäcker, Lovins et al. 1998). To reach this it is envisioned that resource use can be decoupled from economic growth.

While relative decoupling can indeed be observed (the pressure is growing but slower than economic growth), an absolute decoupling where ecological pressures are stabilised independent from a monetary growth of economies is not in sight. The rebound effect regularly undermines technological efficiency gains, for example in cars: the km driven per liter of fuel is nearly at the same level as in the 1980s due to heavier cars, air conditioning in cars, etc. But what is necessary in the long run is a progressive decoupling where the pressure is significantly reduced (Watson, Carlsen et al. 2008). And this is not insight so far, at least not economy side. Relying on efficiency will quite likely not work, and even less likely in context of growing economies.

There are high hopes – quite a few initiatives have already been set in this motion – for the further use of renewable energy sources. Optimistic estimates expect 35% to 50% of German energy provision for example could come from renewable sources in 2050. But what about the rest (if we remember that even a reduction of GHG emissions to zero in the developed countries is not enough)?

"Renewable Energy cannot sustain consumer society" is the title of a book by Ted Trainer (Trainer 2007). Critical minerals needed for example for photovoltaic energy production are scarce and their calculated demand is up to 6 times higher than current extraction rate (Institute für Zukunftsstudien und Technologiebewertung 2009). Photovoltaic energy production is far from having an efficient energy balance as enormous amounts of energy are used for production. Hybrid powered cars do not look better. Also bio-fuel will be not able to satisfy world energy demand. There is simply not enough land and anyway it will compete with land needed for food production (Heinberg 2003; Kunstler 2006).

All this shows that the technologies praised for potentially overcoming the limits on growth are themselves subjects to limits. "Forget large scale conversion towards renewable energies!" and "Forget large scale electrification of transport!" recommends A.M. Diederer, a researcher working not on environmental but on defense issues at a large Dutch research institute. And he goes on: 'The stakes are too high to gamble on timely and adequate future technological

breakthroughs to solve our problems. The precautionary principle urges us to take immediate action to prevent or at least postpone future shortages. As soon as possible we should impose a co-ordinated policy of managed austerity, not only to address metal minerals shortages but other interrelated resource constraints (energy, water, food) as well (Diederens 2009).

Structure of the global economy

With foreseeable limits of (cheap) oil and the lack of alternatives our energy based highly industrialized and globalized lifestyle is obviously under strain. It is not just a matter of how to produce goods with less energy or how to transport them around the globe. It also challenges our suburban lifestyle where we live, work, recreate and shop in different places and thus have to travel constantly between them.

Based on experience truckers blockade of oil depots in the UK Simms painted a worrying picture of the vulnerable dependence of developed economies on the oil distribution network, which had been organized along just-in-time delivery principles. ‘ If the provision of gasoline within an economy is blocked, the supermarket shelves could be bare within three days. With this in mind he provocatively suggests that we are nine meals from anarchy (Simms 2008).

2.2. Sustainable Consumption

This section describes the development of the term Sustainable Consumption and the different ways in which it is understood. Some basic definitions are provided in chapter 2.2.1. I then explain the difference between Weak Sustainable Consumption based on a product and partly service efficiency approach in chapter 2.2.2 and Strong Sustainable Consumption that considers levels and patterns of consumption in chapter 2.2.3 (Fuchs and Lorek 2005).

2.2.1. Some basic definitions

The way of perceiving and approaching Sustainable Consumption in a political context has changed over time (Autio and Heinonen 2007; van den Burg 2007; Mont and Plepys 2008). It mainly follows the argumentation – and interests - of those who have the power to define the direction of the discourse (Zenóbio Gunneng 2006).

Since the UN Conference for Environment and Development in 1992, unsustainable consumption patterns have been identified as the major cause of unsustainable development. Chapter 4 of Agenda 21, “Changing Consumption Patterns”, called on all countries to strive to promote sustainable consumption patterns, with developed countries taking the lead (United Nations 1992).

This represented a shift from earlier times when the production side was mainly the focus of environmental concerns. Since the greening and cleaning of the industries and broad adoption of the end of the pipe technologies have become mainstream in industrialised countries consumers were shift in the focus of environmental policies and increasingly regarded not only as victims of environmental pollution but also their cause.

However, the term Sustainable Consumption on a political agenda can carry different meanings (Princen 1999; Røpke 1999).⁴

⁴ This collection of understandings of the term Sustainable Consumption lists three aspects only. It jumps from efficient resource consumption to demand aspects. What is left out is the step of production efficiency, which is, for example, in the center of industrial ecology.

- First, Sustainable Consumption can refer to sustainable resource consumption, taking into account the complete product life cycle. In this context, the term stands for limiting the consumption of depletable resources, often via more efficient use or by their substitution with renewable resources and the use of renewable resources limited to their reproduction rate. Sustainable resource consumption involves the consumption patterns of industries, Governments, households and individuals. (United Nations 1992).
- Secondly, Sustainable Consumption can be used in the sense of macro economics as aggregate term of public and private consumption. In this context it focuses on the demand by public and private households and its responsibility for the ecological consequences of consumption decisions. This neglects the responsibility of business and industry and instead awards them the function of mere providers of more sustainable consumption options (European Commission 2008).
- Third, Sustainable Consumption can be limited to private consumption only, as reflected in the concepts of sustainable household consumption or sustainable consumption behaviour (Thorgersen and Ölander 2003; von Geibler, Kuhndt et al. 2004; Lucas, Brooks et al. 2008). Here emphasis is given to case studies and single product advice to consumers. Only this third understanding in most cases explicitly includes the social aspects of Sustainable Consumption mainly manifested in the support of fair trade products (Raynolds 2002; Smith 2007).

Agenda 21 mainly argues in the sense of sustainable resource consumption and thus calls for significant changes in the consumption patterns of industries, governments, households and individuals (United Nations 1992).

I intend to support this argument which seems to be the most useful not only for strategic reasons but for conceptual ones, too. Only such a broad understanding helps to bridge between individual consumption and resource management in the light of life cycle thinking (Mont and Bleischwitz 2007). Additionally it overcomes the partly artificial distinction between production and consumption which is rooted in the economic distinction between business and households and helps to include resource use which is provided without entering the market like food provision from subsistence production (Røpke 2009).

Within the term of Sustainable Consumption introduced in chapter 1, this understanding of consumption emphasises that resource use should be reflected in how far it contributes to human well-being. Specific attention should be given to using resources where they fulfil basic needs in the Brundtland sense and thus provide an especially effective form of resource use for human well-being. In other words, sustainable consumption considers using resources there, where the marginal utility per resource is highest (Beddoe, Costanza et al. 2009). Figure 4 illustrates the core of this definition with the effective provision of human well-being in the centre and all the other factors playing a supportive role.

Figure 4. Sustainable Consumption as an effective contribution to human well-being

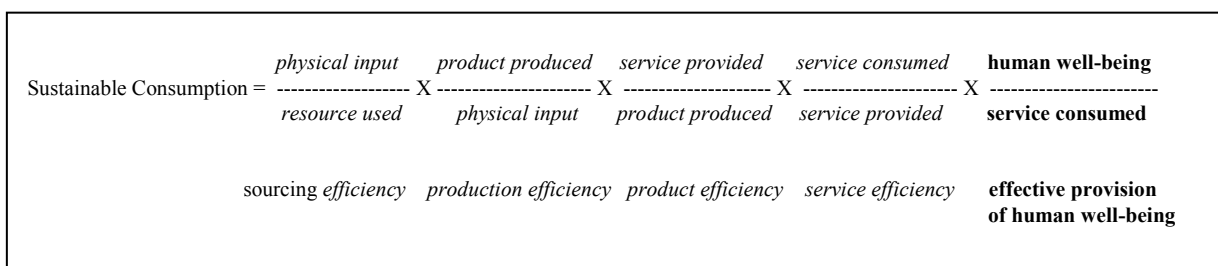


Figure to be read the following way: **bold** = main emphasis; *italics* = efficiency expected; normal = fragmentation factor neglected

The Oslo Symposium definition of Sustainable Consumption clearly argues in line with the Brundtland definition of Sustainable Development as it highlights that a focus on eco-efficiency would not provide a sufficiently comprehensive framework for identifying, understanding and changing unsustainable consumption patterns but referred to basic needs, limits and future generations.

However, with its specific mentioning of products and services the Oslo definition provided the floor for a systematic narrowing of the ambitions of Sustainable Consumption. In this way, the more comprehensive understanding silently disappeared from political agendas.

2.2.2. Optimising products and services: a Weak Sustainable Consumption approach

As a result of the narrow focus on products and services, one of the major elements of today's Sustainable Consumption discourse is to encourage consumers to play their roles as active market actors and to take responsibility to buy green or more sustainable products.

This can predominantly be observed in those strains of the political and scientific discourse coming from production efficiency, which originally talked about sustainable production.

Product and production efficiency is, for example, used in the approach of Integrated Product Policy (Rubik and Scholl 2002; Scheer and Rubik 2006; Rehfeld, Rennings et al. 2007). Here, the environmental impacts of products have to be reduced along the life-cycle of the products from cradle to grave. This is also a major topic for proponents of ecological modernisation, who emphasise the possibility of decoupling economic growth from resource use through technological innovation (Ayres and Simonis 1993; Weizsäcker, Lovins et al. 1998), and proponents of industrial ecology (Ayres, Ayres et al. 1996; Erkman 1997). A good overview on these debates provide Dryzek or Garner (Dryzek 1997; Garner 2000).

Only recently was the term consumption added visibly to these concepts, for instance by renaming the bi-annual “European Roundtable on Cleaner Production” (ERCP) as the “European Roundtable on Sustainable Consumption and Production” (ERSCP), or the “Cleaner Production Centre” as the “Cleaner Production and Consumption Centre”.

I argue that such a perception roughly reflects a Weak Sustainable Consumption concept as it asks for relative improvements, but does not refer to absolute limits such as those for CO₂ emissions at a country or regional level.

For instance, the third meeting of the so called “Marrakech Process”—the international support process for the development of a “Ten Year Framework of Programmes for Sustainable Consumption and Production” as assigned in the Plan of Implementation of the World Summit on Sustainable Development (WSSD) in Johannesburg 2002 (United Nations 2002)—highlighted the “role of informed consumers in driving change towards more sustainable products and production” in its meeting report and the co-chairs' summary (UN DESA and UNEP 2007). Similar notions can be found in documents of the European Commission; for example, in its “Sustainable Consumption and Production and Sustainable Industrial Policy Action Plan” (European Commission 2008). This action plan talks about “smarter consumption”, “better products”, as well as “global markets for sustainable products”.

This Sustainable Consumption concept is referred to as SCP in recent political documents. While officially this serves as abbreviation for “Sustainable Consumption and Production” in fact it reflects on “Sustainable Consumer Procurement” (Fedrigo and Hontelez 2010).⁵ The

⁵ I do not intend to adopt the SCP notion in this thesis.

assumption is that several green and sustainable alternatives are available on the market and that production of these alternatives should be supported and encouraged by consumers through their purchasing decisions. Additionally, increasing demand should induce innovation for more sustainable products and services. This is supposed to lead to changes within the current economic system towards sustainable growth (Ricci 2008). The appearance of this perspective does not come as a surprise. Instead, it is rooted in the fact that the task of working on SCP in opinion-leading countries rests in national ministry departments that formerly dealt with integrated product policy (IPP). As a result, the perception of Sustainable Consumption as an aspect of product policy is quite understandable.

There is indeed some evidence that changes in consumer demand can lead to changes in the markets. Water saving appliances and so-called “white goods” like washing machines and refrigerators are typical examples here. Still, other appliances have failed to become less resource consuming over time, like TV sets and cars for which other criteria than efficiency are major selection factors for consumers.

Without doubt such a product-based (and partly service-based) approach relying on technological development and its success in the market is a necessary step towards Sustainable Consumption. Within the formalised term of Sustainable Consumption this is reflected in the concepts of product efficiency, production efficiency and sourcing efficiency with specific attention given to service efficiency as the active contribution of consumers.

Figure 5. Contribution of a product-based approach to Sustainable Consumption

$$\begin{array}{cccccc}
 \text{Sustainable Consumption} = & \frac{\textit{physical input}}{\textit{resource used}} & \times & \frac{\textit{product produced}}{\textit{physical input}} & \times & \frac{\textit{service provided}}{\textit{product produced}} & \times & \frac{\textbf{service consumed}}{\textbf{service provided}} & \times & \frac{\text{human well-being}}{\text{service consumed}} \\
 & \textit{sourcing efficiency} & & \textit{production efficiency} & & \textit{product efficiency} & & \textbf{service efficiency} & & \text{effective provision} \\
 & & & & & & & & & \text{of human well-being}
 \end{array}$$

Figure to be read the following way: **bold** = main emphasis; *italics* = efficiency expected; normal = fragmentation factor neglected

However, this approach has two major shortcomings, rendering it of limited success only within the rational boundaries of efficiency for a specific product, but not economy wide (Graus and Worrell 2009).

One of these drawbacks is the monetary aspect. Via the rebound effect (Berkhout, Muskens et al. 2000; Greening, Greene et al. 2000; Binswanger 2001) the money saved—for instance through reduced electricity costs—is spent on other items such as other electric goods (EEA 2006). More services are demanded, more products have to be produced, more physical input is needed and thus more resources are used. Additionally, due to economic growth in general, more money is available to be spent and obviously, each euro, dollar or other currency spent is related to additional resource use. The key concept in the Weak Sustainable Consumption approach is decoupling, more precise to decouple economic growth from resource use. The limited success of decoupling was described already in chapter 2.1.

Secondly, along with the increasing consumption demand in developed countries also Earth population in general and the global consumer class are increasing.

The I=P*A*T equation (Ehrlich and Holdren 1971) illustrates the problem involved. According to the equation the (environmental) impact (I) is a function of the population (P), affluence (A), and technology (T). In more detail, A is defined here as GDP per person and T as the efficiency improvement per unit of GDP.

There is ample evidence that the impact of consumption has to be reduced if sustainability is ever to be achieved ($I=\downarrow$). According to all the forecasts the world's population will grow ($P=\uparrow$). The product-based Sustainable Consumption approach explicitly relies on a concept that promises and encourages growing affluence ($A=\uparrow$). This indicates that the implicit key assumption of the product-based Sustainable Consumption approach is that technological innovation will provide the necessary solutions. A product-based understanding of Sustainable Consumption solely relies on T (Chertow 2000).

The development of future technology, however, is insecure ($T=?$). The environmental impact in the form of pollution has indeed been reduced and efficiency has been increasing, at least concerning single products or specific production processes. Yet, the development of new products may induce the purchase of more products (for instance in information technology). Additionally, technology is closely connected to affluence, since better technology often contributes to an increase of GDP. In fact, it seems to be a matter of belief whether technological development can meet the challenge of reducing environmental impacts despite counter developments concerning population and affluence (optimistic view) (Weizsäcker, Lovins et al. 1998) or not (pessimistic view) (Heinberg 2003; Hirsch 2005; Trainer 2007).

Costanza suggests that in order to reach sustainability the event of insecure technological development we should strive for the best, but maintaining a pessimistic view (Costanza 1989). Only in this way can disasters can be avoided, even if it is at the price of only moderate (economic) development. Figure 6 illustrates the argument.

Figure 6. Pay-off matrix for approaches of environmental uncertainty

		Development state of the world	
		optimists right	pessimists right
Type of policy	technologically optimistic policy	high	disaster
	technologically pessimistic policy	moderate	tolerable

Adapted from (Costanza 1989)

This implies the following for the $I=P*A*T$ equation: to reduce environmental impact (I) given a growing population (P) and a unforeseeable development of technology (T), it is recommended to decrease affluence (A) to avoid disaster in the event that technology fails to solve the problems.

To summarise, considering the ecological challenges we face, slight adjustments within the system relying mainly on technological solutions and a product-based Sustainable Consumption approach runs the risk sooner or later of encountering long expected disasters from a peak in oil supply to climate change. At best, this approach can postpone disasters (Garner 2000). Thus, relying on a product-based approach can only lead to weak sustainable consumption patterns. In fact, it is rather a greening approach for selected products, for some individuals or a few lifestyle groups than a coherent concept (Hartmann 2009).

2.2.3. Requesting levels and patterns of consumption: a Strong Sustainable Consumption approach

That the product-based approach of Sustainable Consumption that focuses on product availability falls short has broadly been explored in the rich academic literature on Sustainable Consumption. Several edited volumes of academic journals (Noorman and Uiterkamp 1998; Westra and Werhane 1998; Cohen and Murphy 2001; Princen, Maniates et al. 2002; Røpke and Reisch 2004; Jackson 2006), special issues (Ecological Economics 1999; International Journal of Sustainable Development 2001; Journal of Industrial Ecology 2005; International Journal of Innovation and Sustainable Development 2007; Journal of Cleaner Production 2007; International Journal of Consumer Studies 2009) and countless individual books and conferences include contributions highlighting the systemic weaknesses of the “weak” approach and emphasise the need for a stronger approach towards Sustainable Consumption.

Therefore, in this section, I introduce the concept of Strong Sustainable Consumption.⁶ As opposed to its weak form, Strong Sustainable Consumption covers a broader scope that includes products and efficiency, but also goes beyond these concerns.

First of all, in the original Agenda 21, consumption in this concept is understood as resource consumption. This includes consumption by industries, public consumption and household consumption. Additionally, the concept explicitly values all contributions to enhance product-, production- and sourcing efficiency.

However, in the Strong Sustainable Consumption approach it is not the markets, the economy and the support for proactive entrepreneurs that are focused upon, but rather the resources available (including the available sink capacity of the ecosystem) and the manner of their distribution among the Earth’s population. In this sense, this concept refers back to the roots of the Rio conference in 1992: environment and development.

Strong Sustainable Consumption includes giving specific attention to the levels and patterns of consumption. In doing so, it also recognises consumers as responsible citizens and accepts the social embeddedness of behavioural decisions. Additionally, it strengthens social developments to perceive well-being as independent from material commodities (Layard 2005; Marks, Simms et al. 2006) and to increase human well-being through social structures (Hofstetter and Madjar 2003). Figure 7 illustrates the focus of the concept of Strong Sustainable Consumption.

Figure 7. The comprehensive concept of Strong Sustainable Consumption

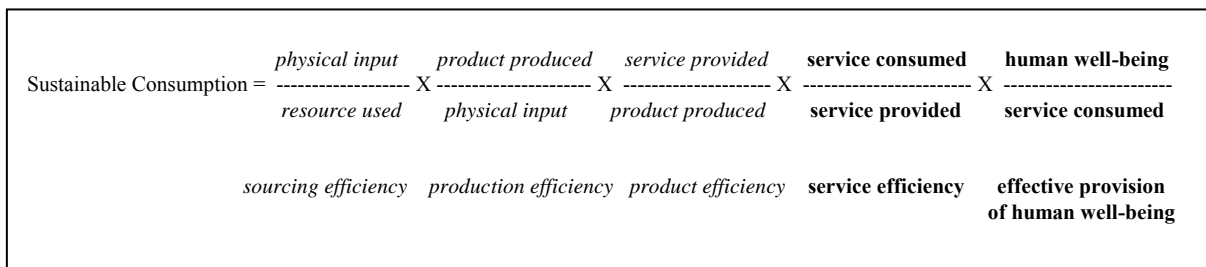


Figure to be read the following way: **bold** = main emphasis; *italics* = efficiency expected; normal = fragmentation factor neglected

Opportunities for Strong Sustainable Consumption obviously presuppose radical changes, social innovations and thinking out of the box. As Hunter phrases it: simple things won’t save the world (Hunter 1997).

⁶ This should not be confused with the concept of strong and weak sustainability (Pearce, D. W., A. Markandya, and E. B. Barbier. 1989. Blueprint for a green economy. Earthscan).

On the political level the most remarkable approach pointing in the direction of Strong Sustainable Consumption is laid out in the UNEP publication “Consumption Opportunities” (UNEP 2001). There, efficient consumption (dematerialisation) is explicitly distinguished from different consumption (changing infrastructure and choices), conscious consumption (choosing and using more consciously), and appropriate consumption (questioning levels and drivers of consumption). In doing so, the report explores perspectives of Sustainable Consumption beyond the weak one and points to steps necessary to complement the product-based dematerialisation strategies which Weak Sustainable Consumption is limited to.

A Strong Sustainable Consumption approach reaches beyond consumption as an economic activity taking place in markets based on monetary values. For example, it also reflects the way time is used (Jalas 2002; Spangenberg and Lorek 2002a; Maniates 2010) (Jalas 2002; Spangenberg and Lorek 2002a; Maniates 2009). Strong Sustainable Consumption patterns rely much more on activities like neighbourhood exchange, community or subsistence work (Manzini and Jégou 2003). This concept thus involves social dimensions as it helps to integrate, for example, questions of social coherence or gender issues (Schultz, Empacher et al. 2001). Further on, it regards people not only in terms of their function as consumers, but as citizens as such. In this sense, it is also directed towards sustainable lifestyles (Reusswig 2010).

The sufficiency concept elaborated in the societal discourse fits this context of Strong Sustainable Consumption quite well. It complements the efficiency approach in so far as it not only asks how to do things right (efficiency) but how to do the right things (Sachs, Loske et al. 1998). In other words, there can be enough and there can even be too much (Princen 2005). While sufficiency is predominately interpreted as an individual approach, Princen argues that the idea of sufficiency can be an organising principle for society (Princen 2005). Such a structural perception of sufficiency does indeed seem to be necessary. Alcott points out that resource consumption avoided through individual acts of sufficiency is quite likely made up by other groups of the emerging consumer class and does not increase the amount available for those who need an increase in consumption most (Alcott 2008; Beddoe, Costanza et al. 2009).

Other prominent example of practical experiments with Sustainable Consumption is the voluntary simplicity movement (Elgin 1993; Maniates 2002; Doherty and Etzioni 2003) which has recently gained attention in marketing concepts such as LOVOS —“Lifestyle of Voluntary Simplicity” or voluntary downshifting (Hamilton 2009). These approaches form an important contribution to Strong Sustainable Consumption in affluent, over-consuming population groups.

All this may, to some extent, create the impression that Strong Sustainable Consumption is about voluntary personal sacrifice. Yet, this would be to misinterpret the concept. While personal values—as well as cultural and societal ones—do indeed play a vital role in Strong Sustainable Consumption, the focus of the argument is on the structural changes that are required. This is where governance becomes important. Several scientific approaches have already started to explore these kinds of substantial structural changes that seek to go beyond the inclusion of external costs into prices or other market-related approaches. Such changes are reflected in the concepts of System Innovation (Tukker 2008), Evolutionary Economics (Boulding 1991), or Critical Realism (Bhaskar 1978; Archer 1998), the latter of which I will elaborate in chapter 3 with regard to its potential contribution to Strong Sustainable Consumption.

In my own argumentation on how to foster Strong Sustainable Consumption I take what was formerly called a “Northern” perspective (Galbraith 1958; Schor 1998) and is nowadays called

the perspective of the global consumer class. As seen above, I am mostly talking about the reduction of consumption and the environmental and social burdens that consumption causes (Dauvergne 2008). However, I am fully aware that for a large share of the world's population consumption can only become sustainable if it is increased to a sufficient level first (Sen 1999). The situation of those people with low consumption capacities is taken into account in my argumentation in so far as the reduction targets of the affluent have to be high enough to leave resources and ensure sustainable consumption for the poor, too.

To summarise, the line of distinction between Weak and Strong Sustainable Consumption is a sharp one. In fact, I argue that Sustainable Consumption is a misleading term when used in the product-based 'SCP' context. Instead, the term 'greening the markets' or 'Sustainable Consumer Procurement' better describes what the proponents of Weak Sustainable Consumption seek.

In order to achieve the changes necessary for Strong Sustainable Consumption adequate governance is highly important. The next chapter will reflect on this.

2.3. Governance

This chapter provides the basis for my considerations about Sustainable Consumption Governance. To do so, it first gives some definitions of Global Governance, explains its origins in the historical context, gives reasons for its uptake in scientific debates and political realities and discusses the challenges that Global Governance processes face (chapter 2.3.1). Specific attention is given to Global Governance in the context of Sustainable Development. Besides some general reflections, detailed elaborations focus on the challenges that appear in the practical application of Global Governance in Sustainable Development (2.3.2). The chapter concludes with some requirements perceived as important for successful Global Governance (2.3.3).

Very generally, governance is about rules and institutions in which steering mechanisms are employed to frame and implement goals that move communities of whichever kind in the direction they wish to go, or that enable them to maintain the institutions and policies they wish to maintain (Rosenau 2005). Governance concepts can appear in different contexts. For example, *project governance* in this sense is the process that needs to exist to carry out a project successfully. In the context of firms, *corporate governance*, for example, addresses the various kinds of management tools needed to lead companies through uncertain markets, dynamic stakeholder relations and legal principles, whilst *economic governance* reflects the institutions which create and maintain markets (Bleischwitz 2003; Van Kersbergen and Van Waarden 2004).

Broad attention is given to governance in the sense of the interaction and interrelationships between governments and other actors. Here governance is the process of organising decision making within and among countries where governments play a role, but not the only role. Stoker introduced five propositions of governance: (1) a set of institutions and actors that are drawn from but also beyond government; (2) the blurring of boundaries and responsibilities for tackling social and economic issues; (3) the power dependence involved in the relationships between institutions involved in collective action; (4) autonomous self-governing networks of actors; and (5) the capacity to get things done which does not rest on the power of government to command or use its authority (Stoker 1998).

Since 1989, the World Bank has been promoting the term good governance. In the context of good governance a positive concept of governing that is able to avoid negative influences on economic development is constructed. From this starting point the Bank developed an operationalisation with a narrow focus on promoting privatisation and liberalisation. It is not always clear, however, whether good governance is understood as good government.

The European Union, as another example, published a White Paper on governance where governance is understood as a negotiation method to solve controversial problems among political and non-political actors in the EU (European Commission 2001). This reflects a *participatory governance approach* describing governance as a bottom-up and top-down processes, and is usually multi-level governance with diverse and disagreeing actors.

The governance focus in this paper is on *Global Governance*. What distinguishes Global Governance from governance in general is its task to solve problems that affect more than one state or region. Thus, Global Governance builds on the political interaction of trans-national actors. As will be argued later on (see chapters 3.3, 4.3 and 4.4) Global Governance constitutes a major factor in the search for Strong Sustainable Consumption.

2.3.1. Definitions and origins of Global Governance

The Commission on Global Governance, a high level international committee initiated by Willy Brandt, summarised governance as *‘the sum of the many ways individuals and institutions, public and private, manage their common affairs’* (p. 2 (Carlsson, Ramphal et al. 1995). Their report –Our global neighbourhood” pointed out that effective global decision-making is not restricted to governance processes in the international arena but needs to build upon and influences decisions taken on all levels locally, nationally and regionally (multi-level governance).

In fact, Global Governance is a highly disaggregated and only minimally co-ordinated patchwork of governance initiatives and processes at all levels of practical decision making (Rosenau 2005). It thus meets the necessities of increasing globalisation with its increasing dependence and relationship between global and local developments (Robertson 1995).

In a very general sense, Global Governance can be understood as multi-actor, multi-level political decision making. The multi-actor perspective clearly distinguishes it from governmental decision making, and highlights a sharing of political functions between state and non-state, sub-state and supra-state actors (Fuchs 2005).

Inter-Governmental Organizations (IGOs) as supra-state actors in particular have gained an authoritative decision-making capacity in Global Governance processes due to their ability to reach across national borders. Traditionally, IGOs have fostered the articulation and aggregation of interests, supported data gathering, analysis and exchange, and provided a forum for negotiation and decision making. Meanwhile, some IGOs have developed a level of rule-setting and enforcement capacity themselves. Other IGOs, however, still depend on the opinion or majorities of those states which constitute the IGO, especially the powerful ones. These powerful states determine the budgets of IGOs and influence, if not determine their policies and organisation. The UN is a frequently cited example of the perceived weakness of IGOs in this context.

Setting Global Governance in context

The concept of Global Governance arose at a time of historical changes.⁷

First, and maybe most prominent, the end of the Cold War fostered expectations that common problem solving would replace old conflicts. Therefore, visions of a new era characterised by the common pursuit of common goals became popular and the global resources were considered to be a “peace dividend” (Fuchs 2005). At the same time, the globalisation of markets gained speed, including commodity markets as well as financial markets. This resulted in a shift of power away from national governments to international players like IGOs, but also to business in the form of Trans National Corporations (TNC). Later on, the development of information technologies started to transform the world into a global village. Finally, and the focus of the considerations of the following section, increasing awareness emerged from the global nature of many pressing problems, such as environmental or developmental concerns. The combination of all these developments leads to a perception of novel circumstances with a need for new political approaches.

As a further aspect it has to be considered that Global Governance was appealing to different political philosophies. Neo-liberal norms and ideas promoted an emphasis on the role of non-state actors in global and national politics rather than governmental cooperation (Harvey 2007). They enhanced claims of a lack of feasibility and desirability of state intervention and instead trusted problem-solving by market-based institutions and the ability of non-state actors to take over governance functions. On the other hand, the concept also served social-democratic values as the choice of the title “Our Global Neighbourhood” indicates. It visualises the underlying perspective that humankind can learn how to deal with global problems and pursue collective goals through cooperation (Fuchs 2005).

General challenges in Global Governance processes

Having described the opportunities and hopes resting on Global Governance, this section reflects on its shortcomings.

In theory, civil society participation is regarded as essential to Global Governance. Efforts to link stakeholder practices with formal intergovernmental decision making and negotiating on arenas are seen as a key principle. However, critics argue that the new participatory governance paradigm is just a neo-liberal regulatory model dressed in the language of participation, which privileges powerful actors and consolidates sovereign, capitalist and modern power structures (Backstrand 2006).

In fact, there is a gap between the ideal type of stakeholder democracy and the contemporary structures of Global Governance. Fuchs relates this to the lack of attention given to the most fundamental political questions during the early days of the concept’s formulation who decides, how and in whose interest (Fuchs 2005). This lack of attention is rooted in a restrictive frame of political problem solving and the resulting ontological biases and blind spots.

From a critical perspective, ignoring questions about the distribution of power in Global Governance means ignoring the unipolar world that existed in the 1990s, which was

⁷ The popularity of the concept in the 1990s, however, neither appeared out of nowhere nor settled into unprepared terrain. In fact, long-term developments prepared the ground for the adoption of this particular concept at that specific time. For further elaborations, see Fuchs, D. (2005). Understanding business power in global governance, Nomos, Baden-Baden.

characterised by (1) American hegemony and an international institutional structure that favoured the interests of the G7 and their corporations (Wilkin 1997), (2) the global diffusion of a selected Western set of values and social practices (Sinclair 1999), (3) the distributional effects of reform in the governance of markets and societies (McGinni 1999), and (4) the social, ecological and gender inequities associated with Global Governance (Wichterich 1998; Young 1998), referred to here on the basis of Fuchs (2005). All this resulted in a shift in political power which represents one of the core characteristics of globalisation (see chapter 3.3.3).

Rather than harmonious cooperation among equals reality revealed a “club quality” of Global Governance arrangements typified by changing, informal membership rules, leading to seemingly biased agenda setting and decision making (Fuchs 2005).

2.3.2. Sustainable Development as a challenging field for Global Governance

It was mainly in the context of Sustainable Development that the necessity for an expanded perspective of Global Governance became obvious (Kemp, Parto et al. 2005). Peace may be a topic mainly negotiated between states. Developmental and environmental problems happen on a community level. Various environmental problems are global in scope, but the environmental circumstances of different communities vary considerably. This calls for the multi-level perception of the Global Governance approach which allows one to address sustainability in a host of diverse conditions and to approach solutions on the level best able to contribute to solving the problems (Rosenau 2005).

Sustainable Development—emerging in parallel with the uptake of Global Governance at the end of the 1980s as a new domain in itself—provided a good terrain for experimenting with new modes of governance. In the global politics of Sustainable Development, Global Governance was especially prescribed in the context of Rio and Agenda 21. One outcome of the Rio summit was that the responsibility for the implementation of Sustainable Development was not given to governments alone but was diffused among societal actors such as Non-Governmental Organisations (NGOs) and industry. Agenda 21 explicitly devoted separate chapters to nine major groups in the governance process for Sustainable Development: women, children and youth, indigenous people, non-governmental organisations, local authorities, workers and trade unions, business and industry, science, and farmers (United Nations 1992). The UN’s CSD (Committee on Sustainable Development), established in the follow-up to the Rio conference, and explicitly included these nine major groups in its working structures. Collaborative multi-stakeholder forums, dialogues and public–private partnerships brought together representatives from non-state groups and governments.

Ten years later, the Johannesburg partnership initiative, which entails voluntary public–private agreements between state and non-state actors (mostly business), also reflected the move to broader responsibility and “self-government” for realising Sustainable Development (Backstrand 2006).

Challenges for Governance for Sustainable Development

What has been characterised above as a club mentality amongst players on Global Governance can be readily observed in Global Governance for Sustainable Development. Stakeholder participation in theory is associated with a shift in governance from top-down steering to informal bottom-up and voluntary approaches. The CSD provides an excellent basis for

reviewing some of the challenges of Global Governance; for example, how to secure values such as representation, transparency, responsibility and effectiveness in trans-national governance arrangements (Backstrand 2006).

To begin with, representation is a crucial issue in the multi-stakeholder dialogue. Formally, each major group is given the responsibility to coordinate and select their representatives in line with their internal organisation, skills and networks. However, the multilateral process lacks formal representative and electoral mechanisms. Instead, the CSD secretariat regularly picks focal organisations, often according to the criterion of who is regarded as the leader among a major group. Additionally, in practice, major groups are often dominated by Western professional advocacy organisations due to their better personal and technical capacities, while representatives from grassroots movements, especially those from developing countries, are often marginalised.

The question of who is representing a major group could be of secondary importance as long as position building and input into the process is developed in a democratic way and transparency is ensured in terms of how decisions are made. However, this again favours organisations with access to fast information technologies.

Closely linked to the aspect of representation is the question of responsibility. First, it is important that those acting in the name of a stakeholder group act responsibly within their group. Information, documents and open points for discussion have to be circulated in a timely manner to allow those interested in the process to contribute. Business representatives are responsible to national and international business associations as well as to individual companies; NGO representatives are responsible to the diverse global NGO communities, to Northern as well as Southern groups, to grassroots movements as well as professional lobbyists. The same can be stated for all the major groups. Second, the representatives are also responsible for the process. They have to function not only as communicators to make the process transparent and report its results, but they also have to ensure that contributions to the change processes requested from their major group really materialize.

All this already indicates that the question of effectiveness is a very critical aspect—specifically regarding the multi-stakeholder dialogue and the CSD process in general.

In general, greater participation and the establishment of transparent structures can slow down decision making and can make achieving a consensus more difficult as well as increasing the challenges for collective action (Bernstein 2005). Thus, engagement in the CSD process requires time and the efforts are not necessarily valued with satisfying results or appreciated in the major group.

Yet, the greater challenge of effectiveness emerges for another reason. The purpose of the multi-stakeholder dialogue is to identify the different values and positions of stakeholder groups and national delegations. This clearly indicates that it is to supplement and inform decision making, but not to replace it. Governance for Sustainable Development takes place within a system of multilateral negotiations between states. Whatever is argued in plenary sessions, lobbies and side events, in the end, the national representatives decide about the final results of negotiations. This leads to the critique that stakeholder dialogues are cosmetic, symbolic and pseudo-participative only (Backstrand 2006). Whether the dialogues are successful or not depends on the openness and engagement of the official delegates to take up arguments made by the major groups. And this appears as the bottle neck, because dialogues are often marginalised, as high-level officials do not even participate. This way the position papers presented by major groups do not receive substantial attention, let alone a response from government delegates.

What arises from this is the question of how effective engagement is—in general and for a single organisation (Backstrand 2006). Already at the beginning of the Rio process, NGOs were considering the problem of “participation overkill” where limited personal and financial resources of non-governmental organisation were spent on increasing governance and lobbying activities with unsecured results at the cost of campaigning (Spangenberg 1993).

All these facets are typical for stakeholder democracy. They reflect the ongoing debates among and between stakeholders in other processes and well illustrate the practical challenges for Global Governance. The example from the international, in fact UN, level has parallels on other levels of Global Governance, too, be they national (Nooteboom 2001), regional or local.

However, despite all the obstacles reported, Global Governance in the context of Sustainable Development is widely perceived to be among the most transparent, participatory and accessible realms. It asks for improvement, but is a step in the right direction compared to the decision-making power play in the WTO, for example (Bernstein 2005).

2.3.3. Necessary requirements for successful Global Governance

As described above, Global Governance intends to divide responsibility between states (governments) and non-state actors. But as experience over the last decades shows, Global Governance is a power play where the most powerful actors appear to be from business. Thus, whether Global Governance promotes sustainability, or any other topic, on a global scale it requires the development of steering mechanisms that evoke regulation as binding as those between states after agreements are made. Such regulating mechanisms need to include tools for ensuring the responsibility, or, to be more precise, accountability of corporations. (Clapp 2005; Rosenau 2005).

Steps towards a legally binding instrument for corporate accountability have failed so far, despite various attempts and activities by environmental and other NGOs in the context of Rio, the CSD, and the run up to the Johannesburg summit (NGO Task Force on Business and Industry 2001). The few efforts made towards such mechanisms were on a voluntary basis only, for instance with the Global Compact, launched by the UN (Global Compact 2000), and the OECD Guidelines for Multinational Enterprises (Gordon 2001).

Whether governments enforce legally binding, regulatory frameworks for corporate accountability seems to be primarily a question of the strength and willingness of governments. Binding multi-lateral agreements are not an obscure idea dreamt up by promoters of sustainable development. They are in fact already established in other contexts, mostly in the sense of de-regulation with the purpose of ensuring free markets. These agreements frequently influence the affairs of sovereign states, national and local markets, as well as the opportunities of (often small) corporation and business. The major question is whether governments accept the threats of unsustainable development as something that they have to respond to actively and use their framework-setting power to steer (economic) development in a sustainable direction.

With these basic reflections on Sustainable Consumption as well as on Governance, in this chapter I have prepared the ground for the more specific perspective on Strong Sustainable Consumption Governance. I will come back to this in chapter 4 when I reflect on the results of my research in the light of Sustainable Consumption Governance, as well as in the concluding chapters 5 and 6.

Prior to this, the following chapter is devoted to the methodologies I have used to develop my arguments.

3. Methodological framework of the dissertation

My argumentation about why Strong Sustainable Consumption Governance is necessary is based on solid scientific reasoning that emerged throughout my research work. Various methodologies have been used to develop my results. In order to present the methodologies in a coherent chapter some cuts had to be made to distinguish the methods from the results, which are presented in chapter 4.

In the following chapter 3.1, I first introduce Critical Realism as a challenging opportunity to locate Strong Sustainable Consumption in a broader context within the philosophy of science. In chapter 3.2, I specify the sources used in my studies. Chapter 3.3 first reflects in a more general way on how I used the methodologies of action research, policy analysis and content analysis in my overall work. More specifically, I describe those methods, which allowed me to identify the most important and relevant aspects of household consumption (chapter 3.3.1), the actor-centred approach to analyse actor influence on relevant household consumption aspects (chapter 3.3.2), and the methodologies to assess the influence of globalisation on consumption (chapter 3.3.3).

3.1. The contribution of Critical Realism to the perception of Sustainable Consumption

Critical Realism is a philosophical movement which developed in response to the problems with the dominant approaches in the philosophy of science of the 1960s and 1970s.

Part of the discussion at the time centred on the question to what extent society can be studied in the same way as nature and whether there was a common methodology valid for both the natural and the social sciences. This makes Critical Realism interesting as a multidisciplinary approach for sustainability research in general and Sustainable Consumption research in the context of this thesis.

On a general level, all sciences have many aspects in common. Both the natural and the social sciences describe and analyse structures and causal mechanisms or complexes. Not unlike forms of energy and mechanisms in physical systems, human actions and social structures have causal effects, through not necessarily deterministic ones. However, social actions and structures are frequently changing, either by agents taking unpredictable decisions, or due to learning processes induced by the social sciences. Subject and object are separate but related in complicated ways, and they can communicate with each other. Sociology is concerned with the relations between individuals and the relations between these relations. The social sciences also deal with individual and societal relations to nature, as well as the effects of such relations see for example (Sayer 1992).

Critical Realism claims to be able to explain and overcome both the failures of positivist research programmes and those of constructivism. The rationality of positivism treats knowledge simply as the accumulation of impressions or scientific experiences (Giddens 1974; Giddens 1990). Constructivism, on the other hand, regards the biophysical world as well as the social world—and our knowledge of it—as human constructs which are socially and historically determined (Hacking 1999; Kaboub 2001). It postulates that society is made possible through language and meaning, since both the objects and the subjects of reality are exclusively socially and linguistically constructed. In this respect, there is no way of separating the world from our interpretation of it. What results from this is the fact that there are as many natures as there are conceptions of nature (Murphy 2004). According to this strong form of constructivism, knowledge is entirely determined by social processes and therefore tells us nothing whatsoever about external reality (Huckle 2007). The weak form of

constructivism at least admits that reality cannot be reduced to a social construct and that social action occurs in the context of nature's dynamics (Murphy 2004).

Critical Realism makes an important distinction between the way things are (ontological questions) and what our knowledge claims about these objects of knowledge (epistemological questions). The basic understanding of critical realists is: reality exists independently of us and of our knowledge and/or perception of it. The failure to distinguish between reality and our conception of it is called the “epistemic fallacy” (Bhaskar 1979).

A simple example from the context of sustainability may illustrate such an epistemic fallacy: ozone layer depletion had been taking place long before it was discovered and discussed.

Bhaskar distinguishes between mechanisms (general underlying laws), events (something is happening according to the law), and experiences (the individual or scientific experience of events), and he reflects the appearance of the three aspects in the domains of the real, the actual and the empirical.

Table 1. Perception of reality according to Critical Realism

	Domain of the real	Domain of the actual	Domain of the empirical
Mechanisms	X		
Events	X	X	
Experiences	X	X	X

Source: (Bhaskar 1978)

Huckle describes this concept in the following way:

At the “deep” or “abstract” level the real powers of objects, structures and processes are at work in the biophysical as well as in the social worlds (the real domain).

At the “intermediate” level more contingent factors are specific to given historical and social conditions—they determine whether or not objective powers are realised and whether processes cause events (the actual domain).

At the “surface” level lie experienced phenomena which arise out of the combination of objective powers and contingent factors and can be observed at a given place and time (the empirical domain) (Huckle 2007).

To summarise, Critical Realism accepts reality as an open system, which exists independently of our knowledge of it. But this reality can only be experienced by us through the lenses of culture, history and practice (Carolan 2005)—both in the natural as well as in the social sciences.

Sustainability through the lenses of Critical Realism

In the context of sustainability this suggests that human action does not approach nature as such (ontological objective) but by our perception of nature, of risks, and of necessities (epistemological definition of objectives). This explains the concept of Weak Sustainable Consumption, which sets economy in the centre of its perception—for cultural, historical or other reasons.

The wrong perception (epistemological fallacy), however, can lead to actions which cure symptoms but do not address causes. The result is a re-emergence of problems until the causes are finally recognised and cured.

Plant illustrates this aspect of reality and its perception in the following way. People come to know nature as a socially constructed concept in two senses: (1) They shape nature by social practices (from agriculture via genetic engineering to global warming), and (2) nature is experienced and given meaning through the mediation of cultural discourses and representations. However, common sense tells us that the various manifestations of nature like landscapes, trees, mountains, etc. are not solely constructed by society, but are materially created by real structures and mechanisms in the biophysical world. Thus, even if man may wish to ignore or overcome these structures and mechanisms, he will be unable to do so. Instead, he will be helpless without nature's laws and can neither escape from them nor destroy them (Plant 2001).

An observable positivist understanding of science often leads researchers—and politicians and other decision makers—to assert that no environmental problem exists until there is unequivocal scientific proof of its existence (Murphy 2004). In fact, a reassuring belief in the compatibility of democratic consumer capitalism and ecological sustainability has become hegemonic amongst economic decision makers. This is backed by a faith in technological innovation, market instruments and managerial perfection as means to sustainability (Huckle 2007). This could, for instance, be observed in the negotiations for the EU Action Plan on Sustainable Consumption and Production and Sustainable Industrial Policy⁶ (European Commission 2007) mentioned in chapter 2.

In contrast to this, Critical Realism examines science and technology as social constructions shaped by particular cultures and powerful groups. These constructions not only manipulate nature but also society and cultural beliefs. Technological manipulation of nature has led modern societies to believe in their omnipotence and invulnerability, as well as to be focused on the present to the exclusion of the future. Critical Realism regards these beliefs as problematic because there is a real world —which exists and acts independently of our beliefs about it” (Murphy 2004). In this real world humans and nature are actually inseparable.

A scientific and political Sustainable Consumption approach based on Critical Realism therefore seeks to understand ecological change through epistemological scepticism combined with ontological realism. It accepts that biophysical structures and processes are real and that our knowledge is always subjective to a certain degree (Huckle 2007). Thus, Costanza and his recommendation of politics for a pessimistic technology path (see chapter 2) can be interpreted as arguing in terms of Critical Realism, and so can other researchers on Ecological Economics (Luks and Hammer 2003), as well as the studies of the IPCC discussing the vulnerability of societies and communities (Schneider, Semenov et al. 2007).

Critical Realism for setting “natural disasters” in context

An example about an analysis of the effects of an ice storm in Canada in the late 1990s illustrates the substantial difference a critical realistic view can bring. Although the ice storm seemed to be a natural disaster, there are compelling reasons to believe this is an oversimplification. The disaster resulted not from freezing rain per se, but rather from the vulnerability of the infrastructure that modern society had constructed and upon which it had become dependent (Murphy 2004).

This example can be generalised. Seen in this light, it is important to think of illnesses, diseases and epidemics as being more than purely biophysical events. Rather, we need to expand our understanding—of both the being and becoming—of such phenomena to include social and cultural variables (Carolan 2005).

Nonetheless, environmental engineers still tend to respond to environmental problems as though they are technical issues requiring better technology and management within the prevailing economic and social order (Plant 2001). Consider in this context, for example, the research and pilot projects of carbon capture and storage.

Murphy recommends following the example of disaster sociology as it can teach environmental sociology about errors of expectations concerning nature's dynamics, about the material consequences of such errors, and about social barriers to learning from the prompts of nature (Murphy 2004). The avoidance or mitigation of disaster requires an awareness of vulnerabilities. Many disaster sociologists who have studied technological disasters no longer investigate only the period during and after a disaster, but also the incubation period of disaster. What they have documented is a failure of foresight. With this —sociology of mistake” it can be shown how socially constructed conceptions inappropriate for nature's dynamics have led to unperceived risks and underestimations of danger, and hence to practices that lead in fact to man-made disasters (Murphy 2004).

Critical Realism challenging neoclassical economics

Parallels can be made to the “constructed environment” called economics (Hausman 1992; Spangenberg 2005). At the turn of the century, Tony Lawson addressed this failure of mainstream economics to explain (economic) reality and proposed Critical Realism as an alternative approach. He supported the debate with two books studying Critical Realism in the context of economics (Lawson 1997; Lawson 2003). He examined the various ways in which mainstream economics is rooted in positivist philosophy, as well as the problems this causes. He showed that formal, mathematical models are unsuitable for the social realities economists purport to address (Mäki 2001; Mäki 2002; Spangenberg 2005).

Even more, a lack of understanding about the real world's social and ecological processes bears the risk of causing irreparable harm to the environment and societies. Maier-Rigaud regards this as the search for the “*economically optimal ecological disaster*” (Maier-Rigaud 1992) (translation Sylvia Lorek).

In terms of Sustainable Consumption, the following picture appears. According to the proponents of Weak Sustainable Consumption the unsustainable side effects of permanent economic growth can be compensated for by transforming growth into what they call sustainable growth. Still, the hope built on sustainable growth is justified only within a concept of technological optimism (see section 2.1) and can be seen as an epistemic fallacy, as technology so far has not changed the fact that the natural capital is still being over-exploited, that the world's climate is still changing, biodiversity is being decreased and social equity is not being enlarged.

Critical Realism as a basis in higher education for Sustainable Development

As one way to increase the necessary awareness of Sustainable Development (and Strong Sustainable Consumption), Huckle and others have called for the establishment of Critical Realism as a philosophical basis for environmental education (Huckle 2004).

Within the positivist scientific approach that dominates many fields of science, risks are only perceived as such if they are a topic of public debate. As underlying reason, Plant argues that this is caused by the academic divisions of labour which alienate people from nature. Plant complains that the “management” strain in environmental education courses reduces the opportunity for developing alternative educational approaches capable of showing better ways

of dealing with escalating environmental and social problems (Plant 2001). Reconnecting people with nature partly depends on a realistic interdisciplinary education system that focuses on causes rather than on solutions.

Indeed, Bhaskar already described Critical Realism as a philosophy *for* science, not just *of* science (Bhaskar 1991).

The key requirement for institutions that seek to promote sustainability is a philosophy of knowledge that integrates the natural and social sciences as well as the humanities, accommodates local knowledge, supports critical pedagogy and continues to regard education as a form of enlightenment linked to a vision of a more sustainable future. Huckle suggests that Critical Realism is a philosophy that fosters the ability to identify and analyse problems and find solutions instead of providing tools to develop solutions for the wrong problems (Huckle 2004).

In my own work the perspective of Critical Realism was, for instance, applied in the search where environmental (household) consumption can make a difference. I explicitly based it on a data analysis of resource flows and not—as suggested in the beginning of the project—on expert interviews or even consumer surveys. Chapter 3.3.1 reflects on the methods adopted in more detail. Before that, I will briefly introduce the data sources I have used in my research.

3.2. Sources

To carry out the research, I gathered primary sources and used different types of secondary sources. They were quantitative as well qualitative in nature and came in written form from scientific publications and from political documents, as well as from oral presentations and interviews.

Primary data were developed partly through the interpretation of the secondary sources, partly gathered through own research. Regarding the latter, for the development of the actor-centred approach primary data were generated from expert group discussions. Details are described in the chapter on methodology (3.3.2).

Most methods were applied using rich sources of secondary literature analysis including a content analysis of books, articles and policy documents. The selection of relevant literature in general was made by back-tracking through the sources. Starting with the latest relevant articles in peer-reviewed journals, I identified further relevant readings from their reference lists. This was especially the case in the analysis of globalisation and consumption. The initial set of journals I used for the consumption side were

- Ecological Economics
- Journal of Consumer Policy
- International Journal of Sustainable Development

For the globalisation aspects the relevant journals were

- Global Environmental Politics
- Global Governance
- Review of International Political Economy.

The basic set from each journal included the issues of the previous 24 months.

Further important sources were the two edited books

- Noorman, K. J. and T. S. Uiterkamp (1998). Green households? Domestic consumers, the environment and sustainability, Earthscan.
- Westra, L. and P. H. Werhane (1998). The business of consumption: Environmental ethics and the global economy, Rowman & Littlefield Publishers.

The conference proceedings from “the Second International Symposium on Household Consumption in Paterswolde in June 1999” were also used for the study on globalisation and consumption. Further arguments derived from two major research projects devoted to foster research exchange on Sustainable Consumption. First, a series of conference funded by the Japanese National Institute of Advanced Industrial Science and Technology (AIST) produced the following relevant proceedings

- Sustainable Consumption: Life-Cycle Approaches to Sustainable Consumption, International Institute for Applied Systems Analysis, Laxenburg, Austria, November 2002;
- The First International Workshop on Sustainable Consumption, AIST, Tokyo, March 2003;
- The Second International Workshop on Sustainable Consumption, AIST, Tokyo, December 2003;
- International Workshop: Driving Forces of and Barriers to Sustainable Consumption, University of Leeds, UK, March 2004;
- The Third International Workshop on Sustainable Consumption, AIST, Tokyo, October 2004;
- Sustainable Consumption – The Contribution of Research, February 2005, Oslo.

The second set of research projects comprised the conference proceedings gathered from the two conferences including 32 workshops carried out under the EU FP6 research project SCORE!

A detailed list of the books and articles used for the identification of the determinants of consumption in the cluster housing, food and energy, as well as for the characteristics of globalisation can be found in Annex I.

Although most of the data were qualitative or semi-quantitative, quantitative secondary data were also used. These data laid the ground for the identification of the consumption clusters most relevant for the environmental impacts of household consumption in Germany. The most relevant sources were statistics of the Federal Statistic Office of Germany in case of data for energy use and land use, and data files on material flow analysis gathered at the Wuppertal Institute in the course of the project “Sustainable Germany”.

Qualitative and semi-quantitative data were used for the identification of relevant activities and related indicators within the relevant consumption clusters (Coffey and Atkinson 1999). They were of written form, like publications of the Federal Environmental Ministry and the Enquete Commission of the German Bundestag, but also included expert discussions within the various divisions of the Wuppertal Institute and other research institutions.

3.3. Methods used

To carry out my studies on Sustainable Consumption I made use of several scientific methods. Most of them were qualitative research methods that included some elements of quantitative research. They are combined in a triangulation of data, methods and theories (Denzin and Lincoln 2005; Silverman 2005).

First, my research contains elements of action research (Lewin 1946; Reason and Bradbury 2007). This methodology distinguishes itself from a positivist understanding of science and the postulates of the value-neutrality, objectivity and universal validity of research. Instead, it emphasises the subjective involvement of the researcher in the given social and historical context.

My interest fits Kurt Lewin's description of action research as —moving beyond reflective knowledge created by outside experts towards an active inquiry in the midst of emerging structures". The —spiral of steps", containing planning, action and fact-finding about the result of the action (Lewin 1946), which I use in my research, can nowadays be found in the formulation of NGO positions (planning), lobbying (action) and scientific analysis (fact-finding).

For example, my active participation in political processes has led to the analysis of promises and failures in Sustainable Consumption Governance (see chapter 4.4) (Lorek 2003). The insights gained in research in turn influenced further position building and NGO contributions to the debate: for example, into the European regional consultation within the Marrakech process (ANPED, EEB et al. 2004) and the contribution to the consultation process for the EU SCP Action Plan. Within Germany the research on relevant consumption clusters (see chapter 4.2) sharpened the input and the demand catalogue of NGOs regarding the further development of the National Sustainability Strategy (Lorek and Vogelsang 2004).

A further development of my work on priority consumption clusters (Michaelis and Lorek 2004) using European data formed the starting point for the extension of the EEA's work on Sustainable Consumption (SCP) (EEA 2005). In 2008, the EEA has set up a European Topic Centre on SCP. I am involved as a consulting expert in their projects on indicators of and on driving forces for Sustainable Consumption.

In addition, some insights in terms of the need for better exchange and coordination between the different levels of Governance appeared from the action research about NGOs and their relation to the official Sustainable Consumption processes. Insights were drawn from recent studies on stakeholder involvement in the international political process and from a series of surveys and semi-structured interviews. By analysing NGO activities in Sustainable Consumption and the obstacles they faced we identified lessons for policy makers seeking to engage civil society and made recommendations on how academics can co-operate more effectively with civil society. NGO efforts towards Sustainable Consumption should (1) be planned more strategically, (2) link Sustainable Consumption to current priorities, (3) ensure better links between global and local level, and (4) establish better links to other interest groups (Church and Lorek 2007).

Further relevant methodologies I used are policy analysis (Hogwood, Gunn et al. 1984; Dunn 1994) and, as part of that, content analysis (Holsti 1969; Krippendorff 2004) based on a broad literature analysis of the sources indicated in chapter 3.2.

Policy Analysis, which in itself uses multiple methods of inquiry, seeks to identify and evaluate alternative policies or programmes that may be utilised in political settings to resolve policy problems. Policy analysis is established as a tool when there is still a chance that the policy can be revised. It traditionally contains instruments like the definition of a problem, the

development of evaluation criteria for assessing alternative policies, the identification of alternative policies, and their assessment, the selection of the best alternative and the implementation, monitoring and evaluation of the policy. An important question in the context of policy analysis is, what works for whom in which circumstances (Pawson and Tilley 1997).

Approaching the concept of process evaluation (Hilden, Lepola et al. 2002) I, for example, analysed the processes of the global policy agenda on Sustainable Consumption and Production: who is involved and which roles and aims do the various stakeholders hold and how much influence do they have. Further important evaluation criteria in this context have been the evaluation of goal achievement, and side-effect evaluation (Vedung 1997).

The research on the influence of globalisation characteristics on the determinants of (sustainable) consumption, on the other hand, was more guided by a policy analysis that focused on the meta level: the identification and interpretation of the political, economic and socio-cultural factors influencing the meta-structures of consumption opportunities in globalised markets.

Further on, content analysis was part of my studies. Content analysis in general can be described as a research tool used to determine the presence of certain terms or concepts within texts or sets of texts (Krippendorff 2004). In my research the texts included, among others, political documents like official documents, protocols of meetings, and position papers; scientific documents like journal articles, books, book chapters, essays, as well as oral forms of communication like interviews, discussions, speeches, or informal conversations. Nowadays internet sources are of increasing interest also, not only when they provide easy access to the documents mentioned above but also for example, as an indication of how seriously Sustainable Consumption is treated in the websides of the relevant IGOs, NGOs and governmental organisations regarding updates, the focus of announcements and newsletters etc. In most cases the emphasis was on qualitative analysis identifying how Sustainable Consumption is understood and is constructed by various stakeholders through, for example, the conceptualisation of Sustainable Consumption as an element of Integrated Product Policy within the EU environmental discourse or the uptake of and massive support for LOHAS (Lifestyle of Health and Sustainability) in marketing campaigns.

For identifying determinants of consumption and the characteristics of globalisation (chapter 3.3.3) a semi-quantitative content analysis was carried out. The emphasis here was not on quantitative results in the sense of the intensive counting of words or their coding. However, we especially searched for similarities of words or phrases in consumption as well as in globalisation literature to identify similar lines of argumentation. On this basis we were able to cluster the arguments to develop a concept so as to better link the scientific discourse between research on globalisation and research on (sustainable) consumption.

The next sections elaborate in more detail the methodological tools I used to develop substantial parts of my research: the identification of the most environmentally relevant clusters of household consumption, the actor-centred approach concerning the relative influences on sustainable consumption choices, and the influence of globalisation on the determinants of consumption.

3.3.1. Identification of environmentally relevant household consumption clusters⁸

The starting point of this part of my research was to identify those household activities which are of high importance regarding their environmental relevance. Additionally, indicators were developed to measure whether impacts from those activities pointed towards a sustainable direction or not. The indicators we identified were intended to provide information for consumers and political decision makers in the field of Sustainable Consumption.

The funding organisation for the study, the German Federal Environmental Agency, also provided a preliminary list of potential indicators expected to be relevant. This list contained elements like car use, meat consumption, cadmium containing batteries, and phosphate free detergents. The list thus represented a loose collection of topics frequently discussed under the rubric of Sustainable Consumption in the middle of the 1990s.

However, the list lacked any conceptual criteria. The products or consumption habits considered in the list could hardly be compared to each other regarding their impact on the environment. I mention this as it illustrates the epistemic fallacy of the discourse on environmental household consumption, expecting those aspects of consumption as especially unsustainable which are frequently discussed in studies and media. Most of the products on the list had come to the public's attention as their use had revealed various problems.

What appeared as a problem was that the environmental burden caused by batteries, car driving, detergent and meat consumption could hardly be compared in terms of their environmental effects. Considering and comparing all the several thousands of products and substances potentially harmful for the environment would have made it impossible to give clear, easily understandable and systematically effective recommendations about what to concentrate on in the pursuit of Strong Sustainable Consumption.

Thus, to better assess the relevance of household consumption, be it in form of habits, activities or products, a systematic approach had to be developed. We chose to target the problem from the aspect of resource use.

An input-based approach

To get towards a systematic analysis, we first screened a set of reports on sustainability or 'state of the environment' from several EU countries. The analysis showed that besides some environmental problems emerging from the specific characteristics of some substances emitted in relatively small quantities (CFCs, pesticides, toxins), a topic for chemical policy and health and safety regulations, they listed a rather coherent set of acute environmental problems including, for instance, acidification, eutrophication, loss of biodiversity, global warming, ozone depletion, erosion, and waste. Via the analysis of causes for the problems (for example, emission of CO₂, NO_x and SO₂) and the sources of the causes (for example agriculture, settlement habits) we identified three key resources which use influences the state of the environment. The majority of environmental problems were caused by the use of energy, material and the patterns of land use.

Reducing the consumption of these key resources would lead to a reduction of environmental problems, although not necessarily a proportional one. However, reducing resource consumption was perceived as an at least directionally secure measure, indicating with

⁸ The section is based on the study "Prioritäten, Tendenzen und Indikatoren nachhaltigen Konsumverhaltens" I carried out at the Wuppertal Institute from 1998-1999. "We" in this section refers to Joachim Spangenberg and Sylvia Lorek.

decreasing inputs, the level of environmental damage would be decreasing with a high probability (Schmidt-Bleek 1994).

Table 2 summarises how key resources relate to environmental problems

Table 2. Environmental problems and the use of key resources causing them

Environmental problem	Cause	Source	Key resource
Acidification	SO ₂ , NO ₂	fossil fuels	energy
Biodiversity loss	habitat degradation	agriculture	land use
	fragmentation	settlements, roads	land use
Erosion	use intensity	agriculture	land use
Eutrophication	P	agriculture	land use
	N	agriculture	land use
		airborne, fossil fuels	energy
Global warming	CO ₂	fossil fuels	energy
	CH ₄	ranching	land use
	N ₂ O	agriculture	land use
Ozone depletion	CFCs	cooling solvents	n.a.
Waste generation	throughput	consumption volume	material flows

Source: (Lorek and Spangenberg 2001)

Assessing the influence of specific household consumption activities on the environment

Having identified energy, material and land use as the environmentally relevant factors of consumption we went on by searching for data about how households relate to these factors. This turned out to be a second methodological challenge.

What we found was that to date basically two models had been applied to measure household contribution to resource use, one of which is based on household economics, the other one on statistic accounting. Unfortunately, those models provided different, widely diverging results. Household consumption as defined by macro-economics perceived households as final users and thus holds them accountable for all direct resource use plus the indirect resource use embedded in the products they buy. Household economics account for in-house consumption only, and is mainly concerned with energy use, water use and household waste generation.

The methodology of national economic accounting is based on the premise that goods and services are produced to meet the demands of final users: production is no end in itself. Consequently, all upstream environmental impacts are allocated to the consumer/household. As a result, this approach allocates a much higher share of environmental impacts to households than the latter are able to influence actively. In this sense the methodology used in national economic accounting does not sufficiently reflect the limited capability of households to induce changes.

Household economics deals with individual consumer behaviour within the household. It is based on domestic science and is a standard approach in educational and consultancy efforts of environment and consumer organisations. This approach measures electricity and water

consumption, the number of electrical appliances, the ownership and purchase of products with environmental labels, yet without accounting for the upstream environmental impacts. Although it is not possible to derive a comprehensive, life cycle wide assessment of environmental impacts on this basis, the information is used to develop green consumer guides, shopping lists and household consumption statistics (see, for instance, SustainAbility 1994; UBA 1994).

While the macro-economic approach does not deliver advice to the consumer that would inform her or his day-to-day decision making, the approach of accounting for in-house consumption cannot bridge the gap between counter and kitchen on the one hand and the environment on the other.

At first glance, it seemed plausible to define a third level in between the two established ones, reflecting household consumption of energy, material and land resources based on what households can influence and thus have responsibility for. This, however, turned out to be impracticable on a general level because

- environmental impacts and the role of agents differ between different consumption activities;
- households are not the only agents influencing environmental performance in a consumption cluster.

The tasks that emerged from this insight were (a) to cluster household consumption activities, (b) to identify the most environmentally relevant consumption clusters, and (c) to identify the consumption clusters that households had a significant influence in.

a) Clustering consumption activities

Clustering consumption activities has already been applied in various ways in academic research, depending on the purpose of the respective studies. Perhaps the most familiar example can be found in national statistics reporting on the spending of household budgets.

For our purpose, we searched for literature where consumption was clustered according to environmental impacts. What we found was systematic clustering in publications on environmentally sound household consumption, published by research institutions, individual researchers, environmental organisations and consumer organisations.

Surprisingly, most authors had chosen rather similar approaches. Comparison of the cluster sets of the different origins showed broad overlap and only few differences. Based on these sources we systemised the results, modified them (see below) and defined ten consumption clusters: cleaning, clothing, education, food, health care, housing, hygiene, mobility, recreation, and social life. The criteria for their selection were (a) to cover the consumption-related resource use as comprehensive as possible and (b) to avoid overlap of the clusters.

Two consumption clusters are especially worth mentioning as they appear to be different in our set than in most of the others. Some authors suggested “energy” to be a consumption cluster on its own. Instead, we recognised that energy is an inherent part of each of the other clusters and that it would be quite impossible to separate energy from the other components in all the clusters to establish a comprehensive and calculable energy cluster. Therefore, energy is not considered as a separate cluster in our set. A second cluster under discussion was “recreation”. After gaining an overview, we realised that most environmental burden from recreation is caused by the related mobility. As comparable leisure/holiday activities can be undertaken at different places without widely different mobility needs, we decided to allocate

leisure and holiday travel to the mobility cluster. The remaining environmental burdens of recreation are energy and material consumption, as well as land use impacts at touristic destinations, which, however, only add up to a comparatively minor impact.⁹

b) Environmental relevance of consumption clusters

Having developed the methodology so far, data about the environmental relevance of the different consumption clusters was relatively easy to gain. According to our input-based approach, we now had to identify how much energy, material and land, respectively, was consumed by the different clusters based on physical input-output models for the German economy.

The data delivered a clear picture of which consumption clusters can be seen as environmentally significant and which as less environmentally relevant. The margin we set to recognise a cluster as relevant was 10% of the overall use of one of the input resources. Four consumption clusters did not meet the relevance criterion: cleaning, clothing, hygiene and recreation. All of them scored far below the margin of relevance with regard to energy and material use.

c) Assessing household influence

Besides the environmental relevance, we had to take a second aspect into account before we could make a final selection of clusters of environmentally relevant household consumption.

The responsibility of households for their environmental performance within a consumption cluster—as well as the responsibility of all the other actors—depends on their capability to induce changes. It had to be recognised that not all clusters and their respective environmental performance can be equally influenced by household decision making. As a rule of thumb, in clusters representing state consumption, households have only a minor influence on the sustainability of consumption. This is the case in the clusters of education, health care, as well as social life. In the case of health care, what appears in the energy and material consumption data is the consumption of supporting infrastructure like hospitals and other care facilities. Regarding education, it is the energy, material and land used by schools, the university system, and so on. Social life includes, among others, resource consumption of the police, the judicial system, and even the military.

These examples show that the degree of sustainable or non-sustainable consumption of these clusters is hardly in the hands of households.

Thus, households do have responsibility for those clusters where they both can (having influence) and should (having relevance) act. Those clusters are food, housing, and mobility. Table 3 serves as an illustration of the cluster selection.

⁹ Impacts on biodiversity were not considered at this stage of the work.

Table 3. Where households can make a difference

Consumption clusters	Environmental relevance	Influence of private households
Cleaning		x
Clothing		x
Education/training	X	
Food	X	X
Health care	X	
Housing and construction	X	X
Hygiene		x
Mobility	X	X
Recreation		x
Social life	X	

Source adopted from (Lorek, Spangenberg et al. 1999)

Indicators measuring the development of relevant consumption activities

The identification of the consumption clusters representing priority fields for action was a major methodological step. However, to come from analysis to recommendation, two more steps were necessary: identifying the environmentally dominating activities of household consumption within the relevant clusters and defining indicators to measure their development.

To do this we searched for specifically relevant activities within the relevant clusters having a high impact on resource use and at the same time can exert sufficient influence through household decision making.

Some activities could be identified as dominating a certain consumption cluster immediately. This, for instance, was the case for heating, as part of energy consumption as *the* major factor in the housing cluster. It covers about 80% of all household energy consumption in Germany. Meat consumption played a similar role in the food cluster as did car use in the mobility cluster.

Other priority factors were more difficult to identify. This was especially the case for all those activities related to the material use of the consumption clusters. The key reason for that was the limited availability of quantitative data coherent enough in terms of our research question at the time of the investigation. To compensate for this, extensive consultations with relevant experts were held. The experts consulted partly contributed general overarching insights derived from material flow analysis and decomposition of national statistics, and partly had specific material flow related knowledge in the clusters of food, housing and mobility. A precondition for the selection of activities was the ability of households to influence the development of this activity in a relevant way.

For the priority activities selected we finally developed indicators adequate to measure the consumption activities' grade of development in or away from a sustainable direction.

I will present and discuss the findings in chapter 4.

3.3.2. An actor-centred approach¹⁰

Having identified the priority actions that the consumer could influence, the next question was to discover the size of this influence as compared to that of other agents in any given situation. Household decisions are always embedded in multiple social contexts and become more or less effective due to the fact that the spheres of influence of the different agents involved overlap. Thus, we tried to semi-quantitatively assess the relative strength of influences and the shared responsibilities resulting from them.

Information regarding relevant actors and their influence was gathered in an iterative process of four steps with the results being presented in an actor matrix. The first step was to develop a first draft list of actors and influences based on plausible reasoning within the project team. The next three steps comprised group discussions with experts from various disciplines. The first expert group was a multidisciplinary team of consumption research experts. The members of the group were given as we dealt with those consumption scholars working in related projects of the same funding organisation (Federal Environmental Agency). The second expert group consisted of sustainability researchers working at the Wuppertal Institute. One selection criterion for this group was a specific competence in at least one of the priority clusters under discussion. The third round of group discussions took place in a multidisciplinary team of relevant stakeholders consisting of members of the societal advisory board for the project. It comprised representatives of the Federal Environmental Agency, the Federal Statistic Office, Consumer Organisations, Environmental Organisations, Chemical Industry, Retailers, Trade Unions, and expert researchers.

In each group the results of the actor influence estimate was presented and modified following a discussion with the previous group. The group members had the possibility to discuss the set of suggested actors and to add or delete an actor. The main task, however, was to estimate the relative strength of actors in influencing the decisions and trends. The experts were asked to distinguish between three levels of influence: strong influence, relevant influence and minor influence. Each group kept discussing the level of influence of all actors for all activities until agreement was achieved. This led to a basic version of a matrix for an actor-centred approach with strong influence marked with (++), relevant influence marked with (+) and minor influence marked with (0).

Despite the very different composition of the groups, the results converged towards shared lists of actors and only minor differences in assessing their influence. We therefore decided to take this as a final result since additional group discussion would not have added any significant new information. The final matrices are thus considered to be—with a small degree of error—representative for the consumption patterns and the power relations in Germany in the late 1990s. Rather obviously, the results must change with place (the respective society) and over time.

Some of the final results that came about by using this method are presented and discussed in chapter 4.2.

¹⁰ The section is based on the study "Prioritäten, Tendenzen und Indikatoren nachhaltigen Konsumverhaltens" I carried out at the Wuppertal Institute from 1998-1999. "We" in this section refers to Joachim Spangenberg and Sylvia Lorek.

3.3.3. Methodology to assess the influence of globalisation on consumption¹¹

The influence of globalisation on consumption patterns in developed countries was identified, based on a comprehensive and systematic literature analysis of the topics. We reviewed the discussion and research evidence about the link between globalisation and sustainable household consumption both from the perspective of Sustainable Consumption and of globalisation. We identified core elements of globalisation as well as the relevant determinants for sustainability in three consumption clusters. Based on this analysis, we delineated the various relationships between globalisation and the sustainability of household consumption, differentiating between direct and indirect influences of globalisation.

According to the research design for this analysis, the clusters appear to be slightly different from those defined before. What is called energy in this chapter is a sub-aspect of the cluster housing. It solely considers the direct energy use of housing, namely energy for heating, cooking and electricity consumption. The consumption cluster housing also includes the buildings themselves and their construction.

Identifying characteristics of globalisation

The first step was to review the literature on globalisation. Priority was given to those sources already linking globalisation and sustainability aspects, with emphasis on the environmental component. Literature selection took place via identification of relevant recent papers in peer reviewed journals. Based on their reference we identified earlier relevant papers as well as standard literature on globalisation. Additionally, we used the proceedings of relevant conferences to reflect our findings in the light of current work of other researchers (more detailed information about the literature selection has already been given in chapter 3.2 and can be found in the Annex). A close reading and content analysis of these identified text sources led to the identification of some of the main characteristics of globalisation.

The literature on (sustainable) consumption was then selected in a similar way: recent papers in peer reviewed journals, back-tracing references to earlier papers, back-tracing references to standard literature, and finally scanning conference proceedings.

What we found was considerable agreement on the core influences of globalisation on the sustainability of consumption, both in the Sustainable Consumption literature as well as in the literature on globalisation. In the Sustainable Consumption debate, the influence of globalisation is attributed to a handful of developments: trade integration and liberalisation, capital concentration, shifts in political power, the diffusion of information and increases in the overall volume of consumption. From the globalisation perspective, similar elements appear to be central. Again, the debate concentrates on trade, capital concentration, political power and information. In addition, however, the globalisation debate attributes some of the influence of globalisation to the acceleration of technological innovation. Table 4 illustrates the findings.

¹¹ The section is based on the study ‘An Inquiry into the Impact of Globalization on the Potential for Sustainable Consumption’ in Households” carried out on behalf of ProSus Norway in 2000. ‘We’ in this section refers to Doris Fuchs and Sylvia Lorek.

Table 4. The core influence of globalisation on the sustainability of consumption

Influences according to globalisation literature	Influences according to consumption literature
trade	
capital concentration	
political power	
information	
technological innovation	increasing overall volume

The characteristics identified in globalisation literature are clear distinguished aspects. Yet, during further analysis we became aware that they are closely related. Capital concentration, for example, has more than a little influence on political power. However, they are separate aspects of globalisation with different implications.

Identifying the determinants of consumption in relevant consumption clusters

From the analysis of the Sustainable Consumption literature, we derived another type of results: we identified the dominant determinants of consumption in general, as well as in the relevant consumption clusters.

The analysis of various empirical studies identified a broad range of factors influencing the sustainability of consumption for the three consumption clusters. We grouped them within the typical categories that regularly appeared in the literature analysed (Fuchs and Lorek 2001).

For each of the three clusters, socio-demographics and economics are important determinants. For food, the additional relevant factors are agricultural production conditions, the burdens imposed by different sections of the product chain, the characteristics of the different food groups, and technology. For mobility, the additional determinants are the living situation (urban form and dwelling characteristics) and transport options. Finally, for energy, the additional factors are dwelling characteristics, household technology, supplier characteristics and climatic factors.

The findings are presented below in more detail.

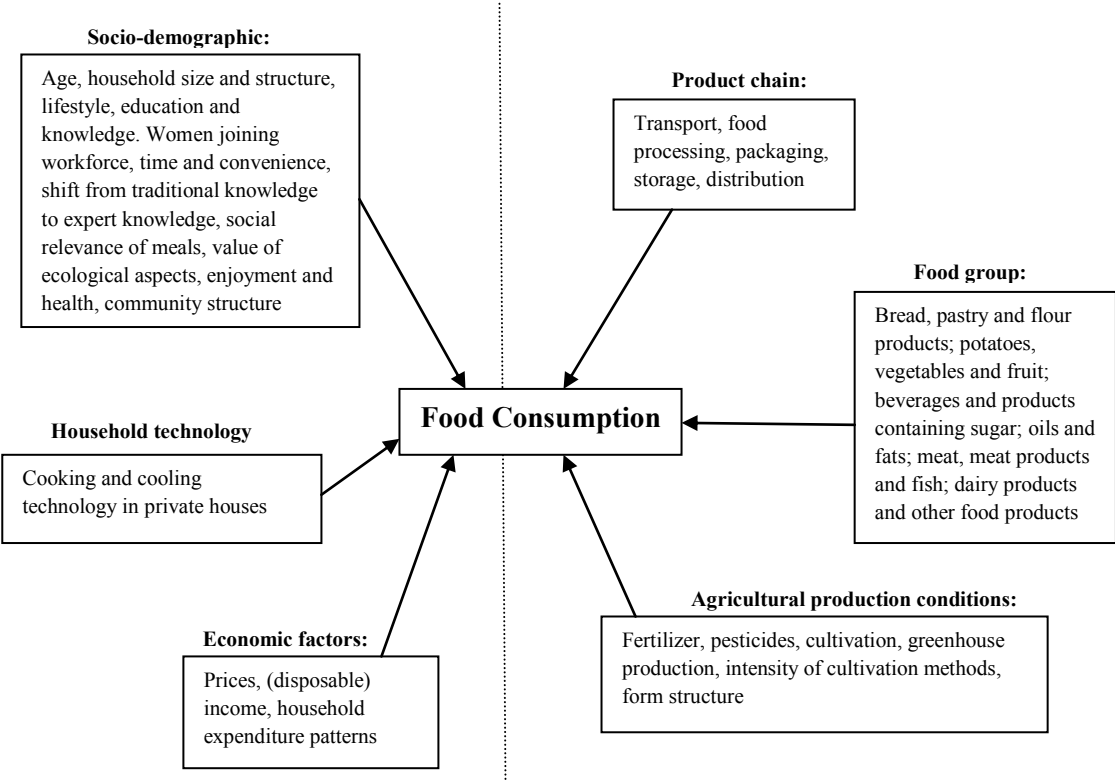
Determinants of food

The relationship we found between food and sustainability is complex. There are ecological, economic and social aspects related to food consumption. Scholars have inquired into different aspects of this relationship. There are two prominent approaches in food studies concerning Sustainable Consumption. On the one side, scholars deal with the determinants of the sustainability of food products. They reflect about the product chain, the sustainability of different food groups and agricultural production conditions. On the other hand, they analyse the determinants of the consumption behaviour of households with respect to food, as there are socio-demographic aspects, household technology and economic factors to be considered.

Agricultural conditions refer, for example, to the intensity of cultivation, the use of fertilizers and pesticides, and farm structure. Studies analysing the product chain point to the importance of the environmental burdens imposed by processing, packaging, transport and storage. The categorisation of food groups differentiates between bread, pastry and flour products; potatoes, vegetables and fruits; beverages and products containing sugar; oils and fats; meat, meat products and fish; dairy products; and other food products. Important socio-demographic factors are household size and structure, age, education and knowledge, lifestyle, and gender issues, as well as values attached to food and meals. Economic factors include disposable

income, prices and household expenditure patterns. Finally, household technology primarily refers to technological capacity and efficiency in cooling and cooking. Figure 8 summarises the findings.

Figure 8. Determinants of food



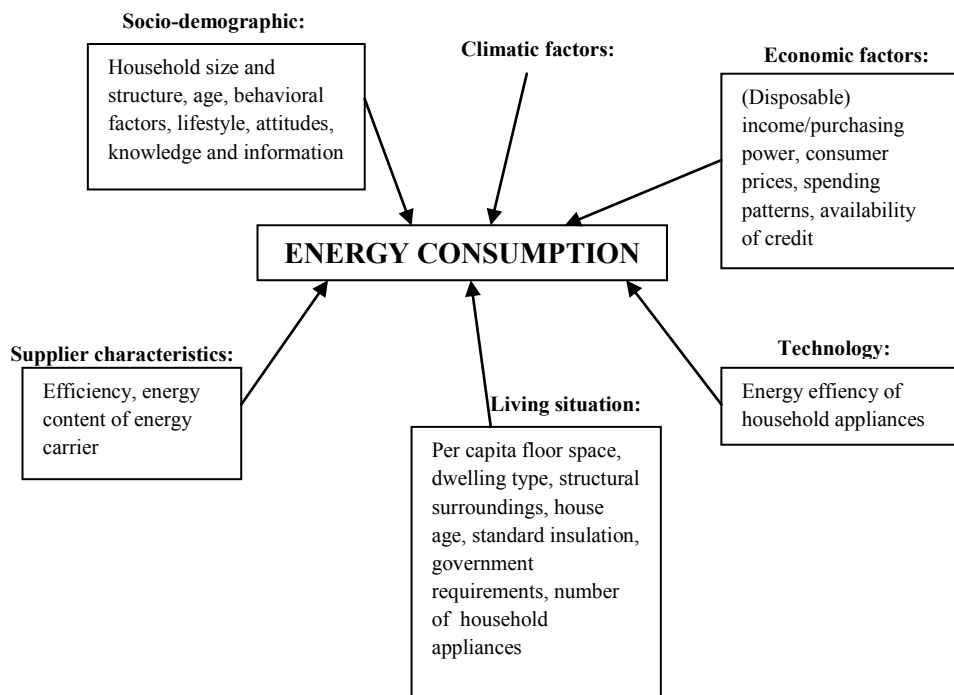
Source: (Fuchs and Lorek 2001)

Determinants of (direct) energy consumption (in housing)

The relevant determinants of energy consumption we identified were socio-demographic factors, economic factors, dwelling characteristics, household technology, supplier characteristics and climatic factors.

Socio-demographic factors here include household size and structure, age, behavioural factors and lifestyle, attitudes, as well as knowledge and information. Economic factors, in turn, include disposable income, prices, and spending patterns, but also the availability of credit and ownership structures. Dwelling characteristics refer to per capita floor space, dwelling type and age, its structural surroundings, insulation, construction and energy efficiency regulations, as well as the number of household appliances. Supplier characteristics are important because of questions of technological efficiency and energy sources; household technology matters in terms of the energy efficiency of household appliances. Finally, climatic factors influence household energy consumption. Figure 9 summarises the determinants of direct energy consumption.

Figure 9. Determinants of energy use



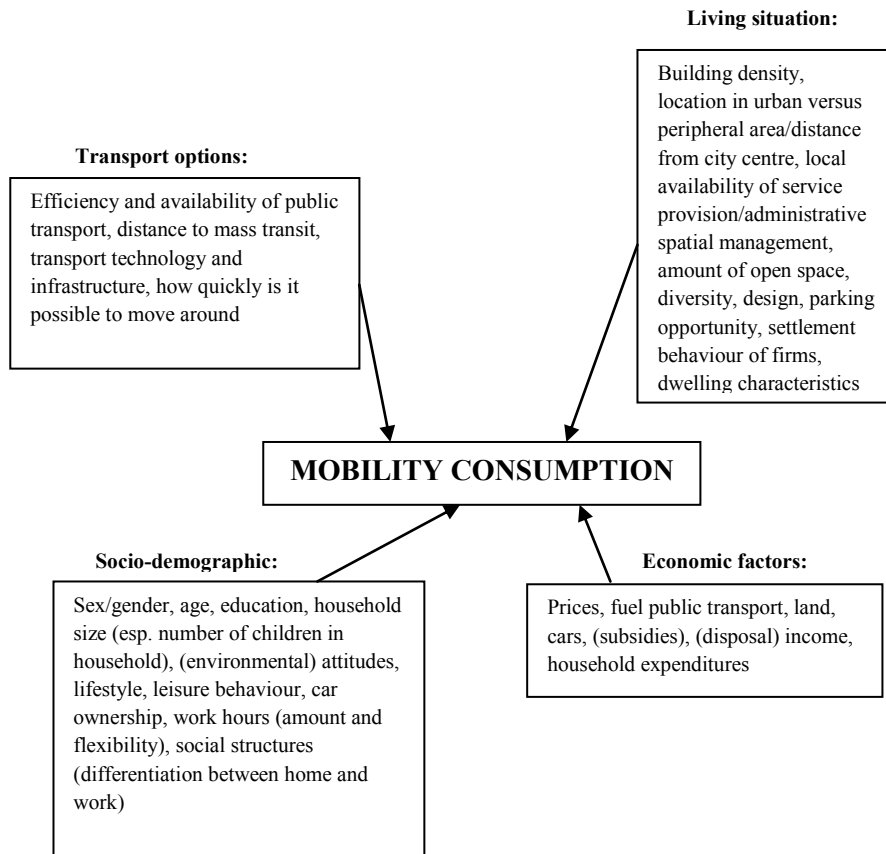
Source: (Fuchs and Lorek 2001)

Determinants of mobility

Several empirical studies have tried to establish the most important determinants of household mobility. Frequently, scholars focus on similar factors.

Again, the determinants include the economic factors of disposable income, prices, and expenditures patterns. The relevant socio-demographic factors include gender, age, education, household size, lifestyle and leisure behaviour, environmental attitudes, work patterns, as well as car ownership. The determinants summarised under the term “living situation” refer to dwelling characteristics and urban form, such as building density and location in urban centres versus peripheral neighbourhoods or rural areas. Finally, transport options and infrastructure such as the efficiency and availability of public transport form the fourth important set of determinants of the sustainability of household mobility. Figure 10 summarises the findings.

Figure 10 Determinants of mobility



Source: (Fuchs and Lorek 2001)

With the identification of the core determinants for Sustainable Consumption in the clusters, we then moved on to identify how globalisation affects these determinants.

Structured assessment of globalisation on determinants of consumption

Based on the previous findings, the next research step was a structured assessment of if and how the observed characteristics of globalisation influence the determinants of consumption in the consumption clusters. We identified the relevant relationships on the basis of prominent scholarly discourse and evidence provided by empirical research.

The selection of relationships was based on the extent of the impact of globalisation on the respective determinants of consumption patterns. We differentiated between direct and indirect influences. The direct influences are those affecting socio-demographic characteristics including lifestyles, tastes and knowledge. These factors are closely linked to household consumption choices.

The indirect influences are those affecting the sustainability of household consumption before the household even makes a decision. These indirect influences have received less attention in the Sustainable Consumption literature. Our findings, however, indicated that a substantial part of the impact of globalisation on the sustainability of household consumption occurs this way, that is, by influencing the supply of products and services and thereby the spectrum of consumption choices available to households. Therefore, we highlighted the most important of those relationships, too.

The results are presented in chapter 4.3.

4. Towards Sustainable Consumption Governance

This chapter summarises the key findings of the articles this thesis is based on (Lorek 2001; Fuchs and Lorek 2002; Lorek 2002; Spangenberg 2002; Lorek 2003; Fuchs and Lorek 2005). Specific emphasis is given to those aspects which provide a significant contribution to the development of the concept of Strong Sustainable Consumption Governance. Additionally, the chapter reflects on the findings in the light of research done by other scholars.

In chapter 4.1, I present my findings regarding the priority fields of action for Strong Sustainable Consumption. Beyond identifying food, housing and mobility as the most relevant consumption clusters, I point out the main aspects within the clusters. In chapter 4.2, I identify which actors have to contribute in order to change processes from a national, German perspective. Chapter 4.3 turns the attention to globalisation and explores how its key characteristics influence the determinants of consumption. Finally, chapter 4.4 opens up to the aspects of Global Governance for Sustainable Consumption and describes what hinders actors for the time being from moving on with any form of Sustainable Consumption Governance.

4.1. Where households can make a difference¹²

Clear recommendations about where households can make a difference form a cornerstone in the debate on Sustainable Consumption in general and Strong Sustainable Consumption in particular. As described in detail in the previous section, the contribution my research provided to the debate was to identify food, housing and mobility as the most relevant consumption clusters (Lorek, Spangenberg et al. 1999). They account for over 80% of overall resource consumption. Our results were based exclusively on data from Germany, but other researchers applying other methods soon came up with comparable results for other countries as well (Noorman, Biesiot et al. 1999; Vittersø, Strandbakken et al. 1999; Gatersleben, Steg et al. 2002; Lähteenoja, Lettenmeier et al. 2007; Nissinen, Grönroos et al. 2007).

Within these areas the following activities have been identified as dominant:

- Food: reducing meat consumption; the choice of organic and regional products.
- Housing: in the use phase, energy for heating (and cooling), in the construction phase, resource use dependent on size, place and style.
- Mobility: car mobility and/or its alternatives as well as aviation.

Starting from these dominant activities, we devised a set of 13 indicators suitable for measuring progress in the most relevant activities of household consumption. Following the explicit goal that these indicators should give households the possibility of checking their own consumption this indicator set varied from other sets developed by other institutions and organisations (OECD 1998; UN DESA 1998; Bentley and de Leeuw 2000). Nevertheless in most cases similarities to other indicator sets were certainly given even when in some cases a clear distinction was missing between indicators derived from a macro analysis (average energy consumption per capita) and those from a micro household perspective (households equipment level with microwaves or other appliances) (OECD 1998).

¹² The section is based on the study –Prioritäten, Tendenzen und Indikatoren nachhaltigen Konsumverhaltens” I carried out at the Wuppertal Institute 1998-1999. ”We” in this section refers to Joachim Spangenberg and Sylvia Lorek.

Table 5. Indicators for sustainable household consumption

Food	Meat consumption
	Organic products
	Food transportation
Housing	Heating energy consumption
	Resource intensity
	Living space
	Private investment in existing houses/erection of new houses
	Settlement area
Mobility	Transport distance for shopping/recreation
	Transport patterns for vocational purpose
	Transport patterns for shopping and recreation purpose
	Number of passenger cars
	Average energy consumption of passenger cars
	Holiday flights

Source adopted from: (Lorek, Spangenberg et al. 1999)

The identification of the most environmentally relevant consumption clusters and their core activities provided clarity in what had been a fog of fragmented data on environmental household consumption provided in the 1990s in general (Statistisches Bundesamt 1996; B.A.U.M. (Hrsg.) 1997). The environmental relevance of such reporting often remained unclear or at best unquantifiable. Instead of 1,000 pieces of advices for the environmentally friendly household, clear priorities could now be defined (Bilharz 2008).

Unprioritised information and awareness campaigns bear two kinds of risks. First, the risk of consumers and households selecting tiny activities but still perceiving themselves as responsible ecological consumers (Autio and Wilska 2005). On a closer examination quite often these contributions are not even targeted for their environmental impact but rather at their effect on health, for example, avoiding specific household chemicals, in order to avoid allergies.

Some scholars have argued that this is not such a bad start after all, since consumers necessarily have to begin with small steps in the right direction. These aspects rely on a “foot in the door” strategy that assumes that consumers once have started to be aware of the environment they will continue in that direction and take larger steps later (Thøgersen 1999). Unfortunately, this hope for a spill-over effect has proven to be an illusion (WWF-UK 2009)

Besides provoking an epistemic fallacy (the self-perception as a “green household” without a factual justification), overloading households with unsystematic recommendations can even have outright negative effects: the refusal to accept and follow any of those pieces of advice.

Another risk is the crowding-out effect. Information on environmentally friendly behaviour is only a small part of a great range of information that consumers are confronted with in our information society. It takes a lot of effort before consumers “get a message”. The following example illustrates this: A structured inquiry among members of Friends of the Earth Germany (BUND) asked them for the most environmentally friendly activity of consumers. Highest priority was given to the answer “avoiding spray cans containing substances dangerous for the ozone layers”. The alarming aspect is that the survey was carried out in 1998 but the respective substances had already been banned from spray cans in 1990 (Bodenstein, Elbers et al. 1998). It is therefore highly important to choose the most effective

topics for communication campaigns carefully —especially because as soon as the consumer has got the message, it will stay in his/her memory.

Nowadays, the identification of food, housing and mobility as priority clusters of household consumption can be seen as the current consensus in scientific debate. One of the latest contributions to the topic was the EU project on the “Environmental Impacts of PROducts”. EIPRO assessed and compared the results of seven studies identifying environmentally harmful products. They were based on different methodological approaches and data from different countries but all came to results that pointed towards housing, mobility and food as being tremendously important for change (Tukker, Huppel et al. 2005).

Nonetheless, one may discuss whether this selection of indicators we developed is still relevant a decade after the research was carried out. In fact, an up-to-date indicator set on sustainable household consumption might look slightly different due to changes in consumption patterns and better data regarding resource flows. Yet, the method I had developed remains valid, and the difference in results would be slight. For example, the aspect of food transportation might be replaced by an indicator reflecting the broader approach of product carbon footprint (Wiedmann and Minx 2008).

Still, the clear identification of priorities of environmental household consumption remains a cornerstone of a science-based Strong Sustainable Consumption approach.

They are reflected in later work, for example, Bilharz’ work on “key points” for communicating Sustainable Consumption to households (Bilharz, Lorek et al. 2008). He carried forward the focus on priorities for sustainable consumption and argued that public sustainability communication should concentrate on advice for a Sustainable Consumption that not only matters (Lorek, Spangenberg et al. 1999) but is also appealing. This means only those activities that can be effectively approached by communicating with households. The others will have to be targeted by other instruments, such as regulatory and economic ones (Bilharz, Lorek et al. 2008). With similar intent, but different in approach, though still in line with my findings is the ‘eco benchmark’, which is used as a tool to easily communicate to consumers where the major problems of consumption are (Nissinen, Grönroos et al. 2007). Reference to my findings are also made in the FIN- MIPS project calculating the ecological rucksacks, the indirect and therefore hidden resource use, of various consumption activities (Kotakorpi, Lähteenoja et al. 2008).

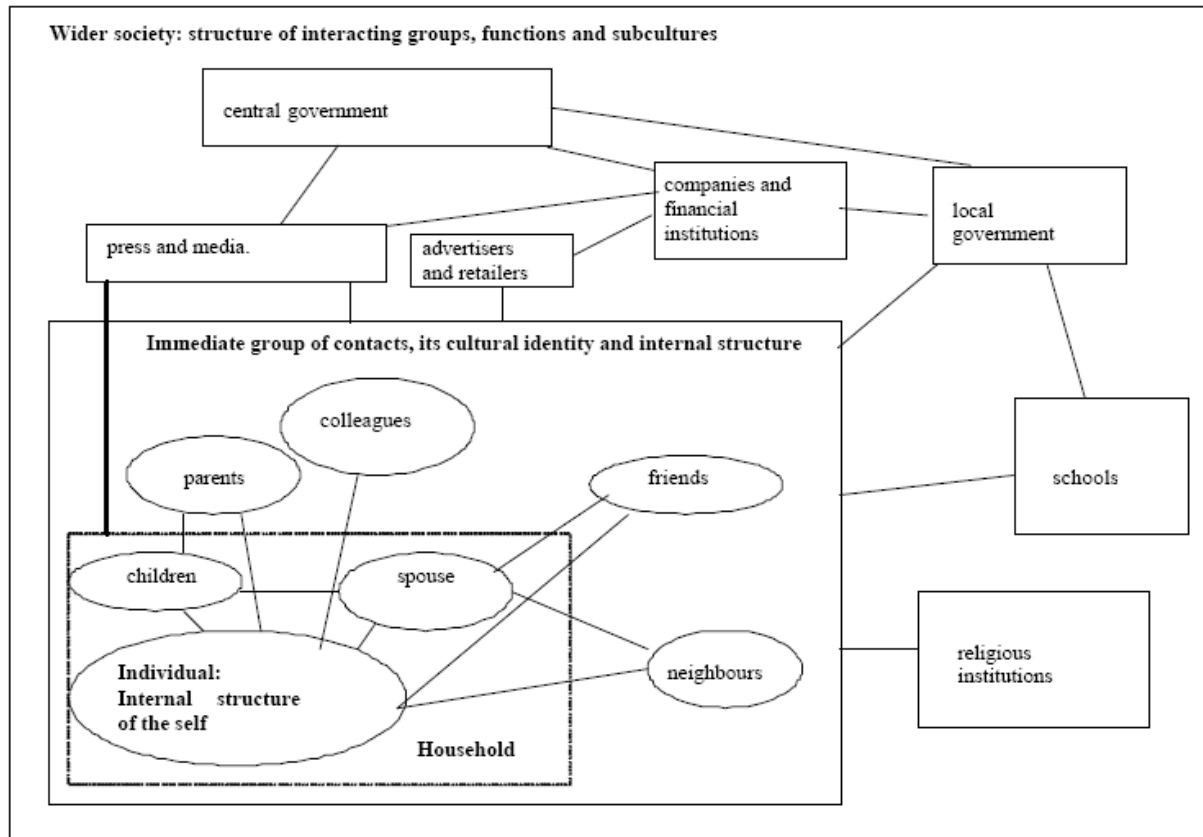
4.2. National governance: who else can make a difference¹³

With the identification of environmentally relevant clusters of household activities, we pointed out where households can make a difference. However, households are not as sovereign in consumption decision making as economists’ assumption about rational utility seeking suggests. This critique of mainstream economic theory can frequently be found (see e.g. Veblen as a frequently cited author in this context (Veblen 1899)). Researchers rooted in consumer economics, sociology and psychology frequently point out how consumption decisions are embedded in countless structures on various levels (Michaelis and Lorek 2004). Figure 11 presents an example of the need to distinguish between individual influences,

¹³ The section is based on the study “Prioritäten, Tendenzen und Indikatoren nachhaltigen Konsumverhaltens” I carried out at the Wuppertal Institute from 1998-1999. “We” in this section refers to Joachim Spangenberg and Sylvia Lorek.

respectively, household influences, the influences of peer-groups, and the settings within wider societal structures. All these influences determine whether consumption patterns are sustainable or not.

Figure 11. Structures and networks influencing consumption patterns



Source: (Michaelis and Lorek 2004)

If households cannot drive change in isolation, who else can or in fact has to make a difference?

As the sustainable governance theory indicates, various actors have to be active to drive change. Business has to provide the opportunities for different forms of consumption and governments have to provide incentives. Sustainable Consumption literature in this context refers to the “triangle of change” (UK Sustainable Consumption Roundtable 2006). As elaborated in some detail in the methodology section, this led us to identify other actors of importance to foster change in each consumption cluster.

However, unlike to the identification of consumption clusters, which proved to be valid in other developed countries (and possibly beyond), too, the actor influences vary from country to country as well as over time. Thus, our results based on discussions with national actors and based on data taken from national German statistics are representative only of Germany in the late 1990s. It is quite likely that the situation differs in other countries where actors like housing companies or local governments hold stronger or weaker positions in society. To illustrate this, I will present the actor matrix of food and reflect on possible differences in today’s situation.

In Table 6 (++) refers to a strong influence, (+) to a average influence and (o) to a minor influence.

Table 6. Actor influences in the consumption cluster of food

	Private households	Retailers	Farmers	Food industry	Politics	Restaurants and caterers
Meat consumption	++	+	+	+	+	+
Organic products	++	+	++	+	+	++
Food transportation	+	+	0	+	+	+

Source adopted from: (Lorek, Spangenberg et al. 1999)

The influence of households on the environmental impacts of their food consumption goes far beyond the patterns of cooking and cooling. By expressing their preferences at the shopping counter, households have a significant influence on the kind of food produced, the mode of production and thus the environmental impacts in general. This renders the role of households particularly important, although other actors play significant roles as well. Household influence is limited regarding the transport distance of the food purchased due to the lack of information (labelling) about where the products come from and due to the absence of substitutes.

Retailers have a specific influence. On the one hand they pre-select the product range available for consumers and influence their choices via advertising and promotion. On the other hand, retailers themselves depend on the supply structures ranging from limitations in regional organic food provision to the vertical concentration of the global agro-food business (see chapter 4.3). Therefore, the food industry has the same influence regarding all three aspects, too.

Farmers can improve the availability of organic products by converting to organic farming. This influence was estimated as potentially a strong one regardless of the fact that the farming sector is at least partly dependent on the market conditions and cost structures determined by politics, in this case particularly by the European Union’s Common Agricultural Policy (CAP). Influence by farmers was identified regarding meat consumption with the main argument being that farmers decide on the conditions of meat production and thus determine whether cheap, low-quality or high-quality, more expensive meat is produced. The latter leads to less, but more conscious meat consumption. No farmer influence was seen on food transportation.

With the ability to offer organic dishes, a vegetarian menu and to buy their ingredients at local markets, restaurants and canteens form another but not dominant actor on the supply side. The column “restaurants and canteens” is a good example of how estimates on the strength of influence develop over time. The reason for estimating restaurants’ influence on meat consumption as not strong (as in the case of organic products) was the widespread habit of German customers to have a meat dish when dining out. By now, expert discussions quite likely would see the possibility of this sector having a strong influence on meat consumption by offering of a variety of tasty vegetarian dishes.

Within Germany these findings have found their way into the project —Pathways towards a sustainable future” which analysed the link between Sustainable Consumption, innovation and labour conditions in a transition towards Sustainable Development in detail (Hans-Böckler-Foundation 2001; Lorek 2003) and a study on how to overcome the putative conflicts between quality of life, consumption and environment (Spangenberg and Lorek 2003).

One result emerging from the expert consultation in Germany which can be expected to be relevant for other countries too is the strong influence derived from the changing provision of consumption goods created by globalisation. The next section presents our results of the analysis of these influences.

4.3. Globalisation as a challenging framework¹⁴

How does globalisation affect the sustainability of household consumption in industrialised countries? To find answers our analysis of Sustainable Consumption in a globalising world linked the various elements of globalisation with the determinants influencing consumption in the three consumption clusters (Fuchs and Lorek 2001; Fuchs and Lorek 2002). We arrived at the following results.

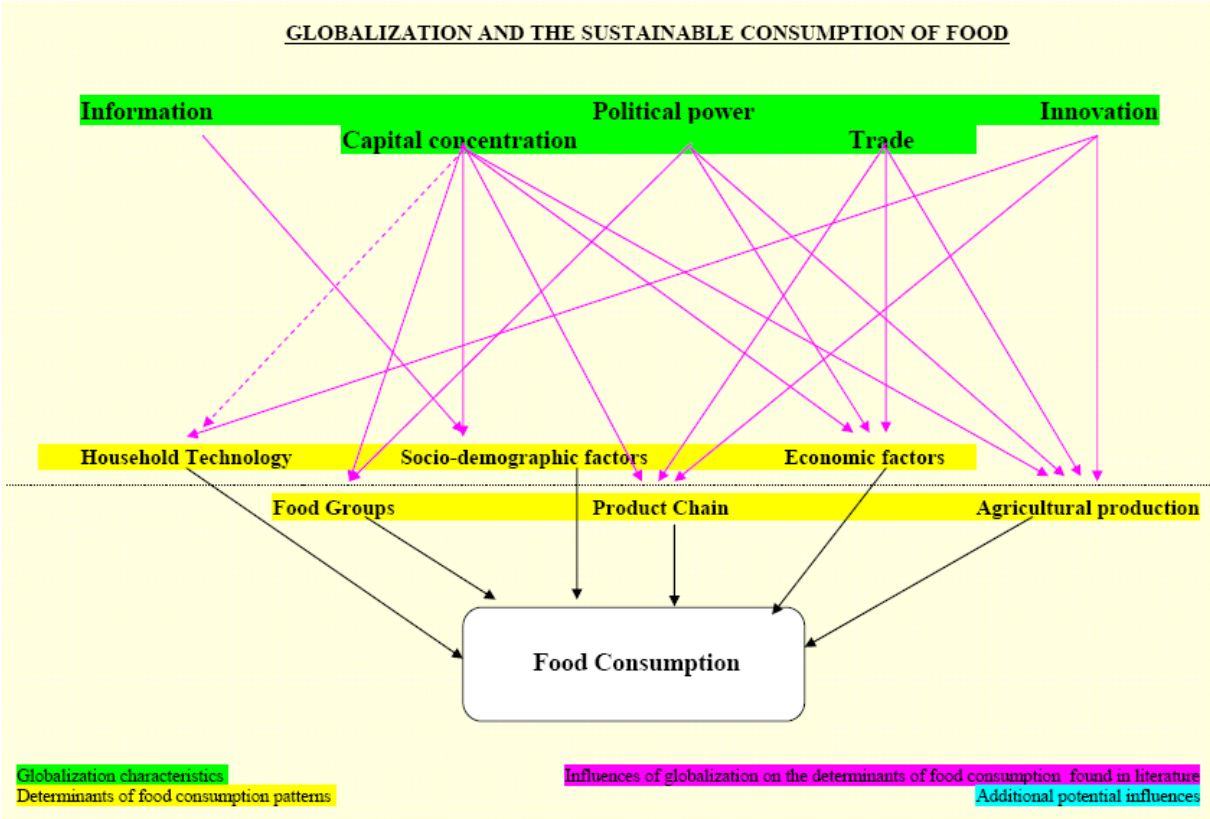
Direct influences of globalisation on each of the three consumption clusters exist through the impact of the globalisation of the information flow about socio-demographic factors (Ropke 1994; Røpke 1999; Princen, Maniates et al. 2002). Besides this direct influence, which has received substantial attention in the literature, indirect influences exist that appear to be at least as powerful as the direct ones. The indirect influences trickle down to the sustainability outcome of household consumption due to their market power, and further to the influence on the supply of products and services from which households have to choose (Haake and Jolivet 1997; Goodland 1998; Mayer 1998).

However, what we also identified was the existence of a tremendous gap between references to the influence of globalisation on Sustainable Consumption in political and academic discussions on the one hand and empirical evidence on the reality and strength of such an influence on the other. Thus, in addition to the influences reported in literature based on empirical findings we completed our analysis of this influence by considering issues under discussion but not yet validated by empirical research. The next three figures 12-14 illustrate our findings. They are organised as follows: The green fields at the top list the elements of globalisation likely to have an influence on the sustainability of consumption. They are the same for all the consumption clusters. The yellow fields at the bottom identify the determinants of Sustainable Consumption in the cluster. They differ between the clusters to some extent. The pink arrows between the globalisation characteristics and the consumption determinants reflect the specific relationships identified by empirical research. The blue arrows indicate relationships that we consider to be potentially important in addition to those already discussed.

¹⁴ The section is based on the study ‘An Inquiry into the Impact of Globalization on the Potential for Sustainable Consumption’ in Households” carried out on behalf of ProSus Norway in 2000. “We” in this section refers to Doris Fuchs and Sylvia Lorek.

Structured assessment of globalisation in the food consumption cluster

Figure 12. Structured assessment of globalisation in the food consumption cluster



Source: (Fuchs and Lorek 2001)

The density of the pink arrows shows that each of the elements of globalisation influences most of the determinants of food consumption. This density is a function of the extent of previous research on the topic of food, but also of the overlap between the determinants of the sustainability of food consumption identified in the debate. The factors agricultural production conditions, product chain and food groups obviously all partly cover similar aspects. Given the number of relationships between globalisation and the determinants of food consumption discussed in the literature, there was not much need (and hardly any room) for the identification of additional relationships the debate may have neglected to date.

Turning to the specific arguments for the relationships identified, the influence of the diffusion of information and values indicates, for instance, the internationalisation of consumer tastes brought about by globalisation. This is an example of a direct influence of globalisation on sustainable consumption household behaviour. In particular, the increasing replacement of traditional food by mass-produced non-perishable food reflects this influence (Bonnano, Busch et al. 1994; Lowe, Marsden et al. 1994). Furthermore, the diffusion of North American consumption patterns is leading to an increased reliance on processed food, produced to create and serve a common popular taste worldwide (Carlsson-Kanyama 1997; Ward and Almas 1997; Warde 1997; Carlsson-Kanyama 1999). Global information and value flows also have implications for consumers' concepts of meals, gender issues and the structuring of lives between home and work. Thus, the rising consumption of exotic/foreign dishes as well as the trends towards eating out are being fostered by the diffusion of specific bits of information and values.

In addition, global information flows also have implications in terms of the type of information that is spread. Some information contents may be favoured over others. Global information flows do not necessarily help the consumer in knowing more about all of the characteristics of a product, for instance. While marketing and advertising are quite capable of spreading messages globally, information on the environmental and social characteristics of products, especially those related to the production process, is often left behind.

Although the Internet gives individuals or groups relatively cheap and easy access to the information highway, it is still far from providing a true democratisation of information.

An additional direct influence of globalisation on household consumption decisions results from the impact of capital concentration, that is, from the dominance of Trans-National Corporations (TNCs) in marketing and advertising. Relying on global marketing networks, TNCs spread their messages worldwide. Owing to their financial capacity, they purchase a huge share of advertising time on television. The concentration of network stations in a handful of global media companies means that capital concentration favours the global diffusion of certain values and information over others. Besides these direct influences of globalisation on the sustainability of household consumption, however, the figure depicts numerous indirect relationships, which trickle down to the sustainability of household consumption through the supply of goods and services. The relationship between capital concentration and economic factors results from declining farm employment and squeezed farm incomes, for instance (McMichael 1997; Ward and Almas 1997). While not explicitly discussed in the literature, capital concentration is also likely to influence the prices of food products for producers and consumers. In addition, capital concentration tends to primarily favour the economic interests of investors, and thereby leads to changes in income distribution within and between countries.

Yet, capital concentration not only influences economic factors, but also the sustainability characteristics of the product chain and food groups, and especially agricultural production conditions. Indeed, capital concentration has been linked to the increasing intensity of cultivation due to heavier uses of fertilizers, pesticides and heavy machinery, and to a decrease in the organic content of food. Likewise, capital concentration is responsible for the increasing dominance of corporations over producers' input choices and especially for the promotion of biotechnology (Ward and Almas 1997). The global sourcing of TNCs also influences the sustainability characteristics of food in terms of transport, of course. Finally, capital concentration is extremely important for the latter stages of the product chain such as food processing and retailing, since these stages have a substantial influence on the consumers' sets of choices (Fine 1994; Goodmann and Michael 1994; Busch and Juska 1997).

The acceleration of technological innovation due to globalisation clearly affects the sustainability characteristics of agricultural production as well as other phases in the product chain. Innovation in biotechnologies affects crop varieties and characteristics, and technologies of logistics influence transport and storage. For households, technological innovation affects cooking and cooling technologies.

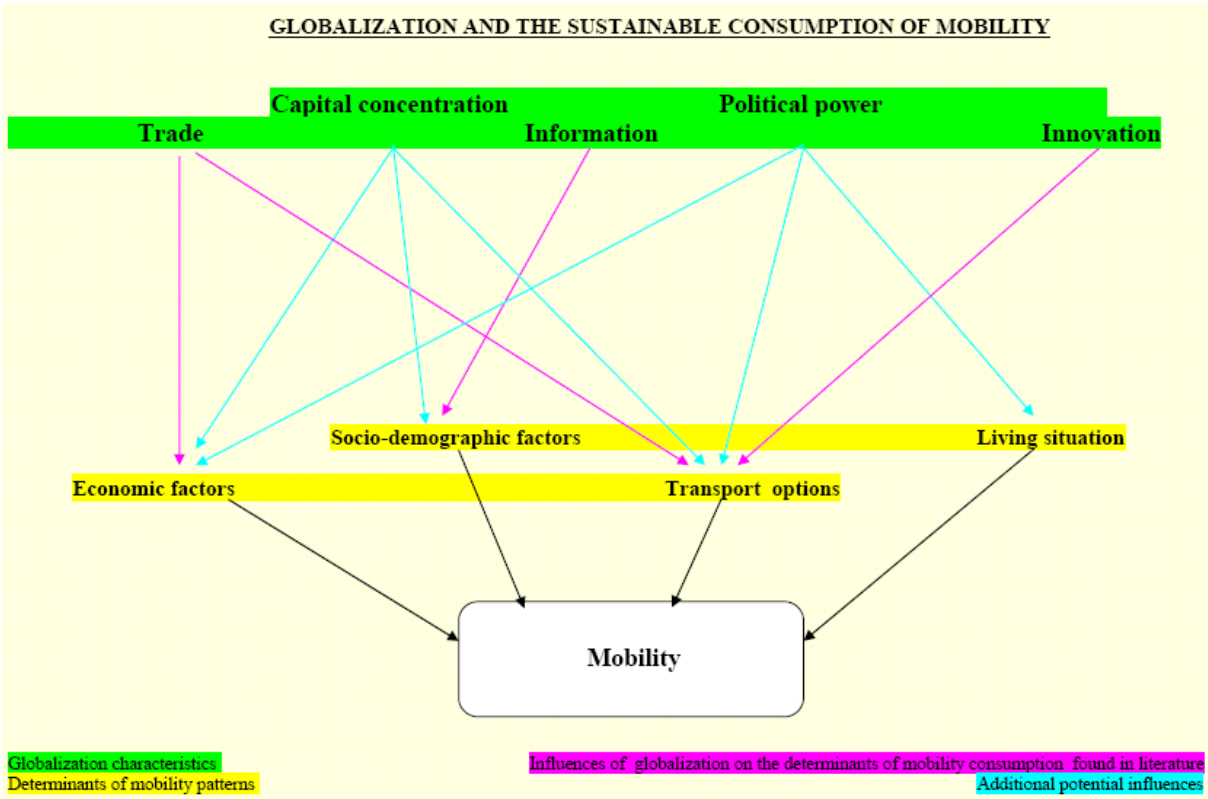
Trade liberalisation and its associated deregulation pressures have implications for the supply side of the sustainability of food products as well as for economic factors. The opening of markets for certain products such as genetically modified food due to WTO regulations, for instance, as well as the prohibition of process standards by the WTO, impact the sustainability characteristics of food products supplied in the market (Friedmann 1994; Hedemann-Robinson 2000). At the same time, trade can allow the relocation of production to environmentally more efficient places. Most fundamentally, trade has the potential to change the price of food. Less clear is the influence of trade on incomes. While standard economic

theory proclaims that trade leads to a bigger “pie” for all, it says little about the “slice of the cake” for the individual country and the distribution of income changes (Hedemann-Robinson 2000).

The role of the WTO in trade liberalisation is related to a shift in political power. Thus, international organisations (including international financial organisations) have an increasing influence on the types and characteristics of food exports and imports (McMichael 1997; Tonner 2000). The IMF and the World Bank, for instance, are well-known for having advocated agriculture of mono-crops for export in developing countries for decades (Ward and Almas 1997), although they may now be modifying their position due to persistent criticism of such practices. Clearly, a shift in political power also affects economic factors in so far as the increasing inability of national governments to provide public goods and to support the redistribution of income affects household budgets.

Structured assessment of globalisation in the mobility consumption cluster

Figure 13. Structured assessment of globalisation in the mobility consumption cluster



Source: (Fuchs and Lorek 2001)

As Figure 13 illustrates, there are only a limited number of influences of globalisation on the determinants of mobility. The global diffusion of information and values via the media clearly holds implications for the socio-demographic determinants of the sustainability of mobility consumption. The media influence consumers’ perceptions of the appropriate mode of travel, especially concerning desirable cars, but also of desirable living situations. Trends to move into the countryside or ideas of the “appropriate” living space are frequently a function of the spread of information and values through the global media (Frank 1999; Quist, Knot et al. 1999; Schor 1999). This role of the diffusion of information also reflects the power of capital

concentration, which dominates global marketing and commercial media time. Finally, the global diffusion of information influences holiday travelling to distant destinations. Again, numerous indirect influences of globalisation on mobility consumption exist as well, affecting the sustainability of household mobility through their impact on the sustainability of products and services offered to households. In the globalisation debate the influence of trade on economic factors, for instance, is a topic of concern. Besides the question of how trade affects incomes, the pressure to deregulate due to trade liberalisation is affecting the price of various transport options. Recent pressures to reduce subsidies for public transport are paralleled by demands for the introduction of private competition. Similarly, the deregulation of the airline market has affected the cost of air travel. Trade liberalisation and its associated deregulation pressures do not just affect prices, though. National subsidies for public transport, for instance, may also determine the general availability of transport options.

The acceleration of technological innovation due to globalisation affects transport options. Especially since one of the most influential determinants of mobility choices is “how quickly one can move around”, technological innovation is of crucial importance. Currently, the technological innovation most prevalent lies in the area of individual private transport and fast long-distance transport, as this is where money can be made. In addition, technological developments in other areas such as the multi-media evolution are likely to change physical mobility needs.

Besides these relationships, we also perceive a potential effect of globalisation on the sustainability of mobility consumption through the impact of shifts in political power on living situation and the impact of capital concentration on economic factors and transport options. Thus, shifts in political power may influence the extent to which sustainability characteristics rather than private economic interests will be considered in urban design.

The influence of capital concentration on economic factors is similar to the impacts discussed for food, in that capital concentration changes income distribution within and between countries. Furthermore, it has implications for the prices for car and air travel. Likewise, capital concentration may affect transport options in general, especially international air travel and to some extent how much cars are used for private mobility.

It is also important to note that the influences of trade discussed above can also be attributed to shifts in political power. Here, the interaction between these two elements of globalisation is very clear. Just as trade liberalisation is related to demands for deregulation and the abandonment of subsidies for different modes of transport, the shift in political power underlines the shrinking willingness of governments to protect public transport systems.

Thus, shifts in political power also affect economic factors and transport options. In order to select the most important relationships between globalisation and the sustainability of household mobility, again, both direct and indirect influences need to be considered. Direct influences might be even more important for this consumption cluster than for food and energy consumption, since the dramatic growth in household mobility is predominantly a function of socio-demographic changes. Among these various indirect influences of globalisation on the sustainability of mobility consumption, the effects on transport options appear the most interesting for future research. According to our analysis, transport options are affected by capital concentration, shifts in political power, technological innovation and trade.

Structured assessment of globalisation in the energy consumption cluster

In the energy cluster, a direct influence of globalisation on the determinants of the sustainability of energy consumption once again exists due to the implications of the diffusion of information and values. This spreading of information and values affects people's concepts of what constitutes an adequate living space, that is, the appropriate size of the house or flat, or the "need" for a waterbed or swimming pool, as well as the desirable family size.

Furthermore, consumers' choices of electricity sources may be influenced by information flows and exchanges about values. Yet, the increasing liberalisation of energy markets within Europe (just as in the United States) also leads to a stronger relationship between capital concentration and socio-demographic factors. Since in many countries consumers can now choose their energy suppliers, the large electricity corporations are investing substantial amounts in advertising. Thus, again, consumers receive selected information from large corporations trying to influence them, while small suppliers have a hard time competing.

Marketing and advertising may not yet be as important in the energy sector as they are in the food sector or for car producers, but it certainly has started to enter the game. In terms of indirect influences on the sustainability of household energy consumption via the spectrum of consumption choices available to households, the influence of trade on supplier characteristics, for example, due to the recent liberalisation of energy markets is identified in the literature. The implications of trade for the sustainability of energy production are being widely discussed. Trade as well as the ongoing shift in political power also influence supplier characteristics in terms of efficiency standards or demand-side management requirements. The importance of shifts in political power in this field is signified by the role and membership of the World Energy Council.

Both trade and capital concentration affect economic factors. Trade influences the price of energy. This is the general relationship between trade and product prices discussed in the literature. Capital concentration, the role of which does not receive as much attention in academic literature on energy, affects income levels and distributions as discussed above, and also has the potential to affect prices. As large corporations have more market power and can also balance different cost structures within their firms, they can be and are more flexible in their pricing policies than small suppliers.

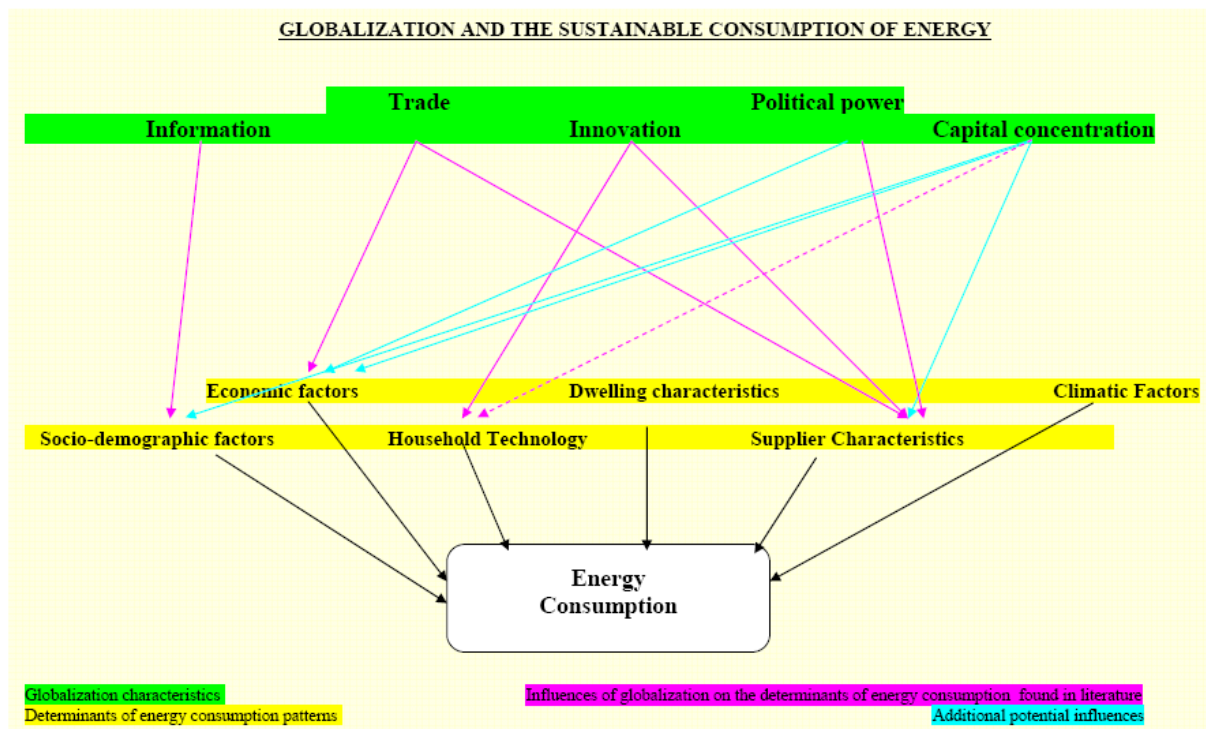
The acceleration of technological innovation affects technology on both the supplier and the consumer side. Thus, the relationships between innovation and household technology on the one side and innovation and supplier characteristics on the other side need to be considered. While the supplier may be more immediately influenced by technological innovation, household appliances and end-use technologies eventually adjust to technological change as well.

In addition to the above relationships, the impact of capital concentration on supplier characteristics needs to be considered. Big corporations are in a very different position regarding technological choices. Moreover, they can foster or hinder the development of different sources of energy. Thus, the entering of big corporations in the production of solar cells created a substantial impetus for solar technology.

Moreover, as discussed above, shifts in political power have an impact on economic factors. This becomes particularly clear in the energy sector where governments traditionally have used taxes and subsidies to pursue a chosen energy policy. Furthermore, governments frequently have made use of policy means to ensure a basic energy supply for their populations. A reduction in the influence of national governments and the increasing influence of oil, coal, nuclear and electricity businesses in (international) energy policy design is thus

likely to have significant influences on the sustainability of energy consumption. Figure 14 illustrates our findings.

Figure 14. Structured assessment of globalisation in energy consumption



Source: (Fuchs and Lorek 2001)

Our analysis showed that many of the consumption areas identified as most in need of improvement are those most strongly influenced by globalisation. The findings have yet to be improved; future studies need to assess the identified relationships in detail individually.

However, it is already clear that political and social decision makers need to “think global” when designing policies for Sustainable Consumption. Globalisation cannot be controlled or modified by one single government. Multilateral, if not global, strategies that directly address those elements are needed. Targeting the influence of globalisation on the sustainability of food, mobility and energy consumption thus goes beyond the influence of national and local policies for sustainable household consumption and creates a completely new set of political challenges for Sustainable Consumption policies. International Governmental Organisations play a crucial role in this context.

4.4. Global Governance: actors on the global level¹⁵

This section finally fuses Sustainable Consumption and its perception in Global Governance processes. It summarises the results of my study published in 2005 (Fuchs and Lorek 2005). The general situation has not changed since then. However, some later developments are reflected upon in chapter 6.

¹⁵ The section is based on the paper “Sustainable Consumption Governance - A History of Promises and Failures”. “We” in this section refers to Doris Fuchs and Sylvia Lorek.

How is Sustainable Consumption perceived in Global Governance processes?

Our analysis of the international political agenda showed an uptake of interest in Sustainable Consumption after the Rio Conference in the UN annual cycles, especially at the regular meetings of the Commission on Sustainable Development (CSD). It also gained some prominence during the World Summit on Sustainable Development (WSSD) in Johannesburg and since then within the so-called Marrakech Process (named after the first meeting's location in order to set up a 10 Year Framework of Programmes as agreed upon in Johannesburg).

However, it is Weak Sustainable Consumption which the attention focuses on, while Strong Sustainable Consumption is almost entirely absent from political debates. This was the case in 2005 when the study was published and is still the case today (for some more recent developments see chapter 6). Strong Sustainable Consumption only exists as a symbolic presence in official documents, in marginal sectors of society and in research. International Governmental Organisations (IGOs) in particular have avoided Strong Sustainable Consumption issues or have not been successful in trying to keep them on the agenda.

Below are some of the findings about IGOs:

CSD/DSD

The UN Commission on Sustainable Development (CSD) and its —secretariat” the UN Division for Sustainable Development (DSD) hosted by the UN Department on Economic and Social Affairs (UN-DESA) have conducted important work and have produced data on trends, indicators and policy measures regarding Sustainable Consumption (UN-DESA 1998). Moreover, the high-level nature and the openness of dialogue possible at the CSD (see chapter 2.2) clearly benefited the Sustainable Consumption issue, providing it with increased visibility on the Global Governance agenda.

Yet, the CSD and DSD failed in broadly fostering the implementation of Chapter 4 of Agenda 21 due to the lack of official support from national delegates for Strong Sustainable Consumption as a governance goal. Questions regarding fundamental changes in consumption patterns and reductions in consumption levels have been raised only in the context of discussions of —common but differentiated responsibilities” at the CSD, in particular at its seventh session. Moreover, they have not found their way into official CSD reports and DSD work. So far, the governance processes on Sustainable Consumption reveal the same lack of effectiveness already described in the governance of Sustainable Development in chapter 2.2.

UNEP

The Sustainable Consumption Programme of the UN Environmental Programme, started in 1998, is housed in the Production and Consumption Unit of the Division of Technology, Industry and Economics (DTIE). This already indicates the difficulties to be expected in any attempt to take up other than Weak Sustainable Consumption aspects.¹⁶ The programme's intention was to develop demand-side oriented activities to complement DTIE's supply-side oriented ones. In its focus on business, the programme has promoted the adoption of the life cycle approach (UNEP/CDG 2000; UNEP 2002).

The most forward-looking contribution from UNEP was published in 2001. The report —Consumption Opportunities” was explicitly conceptualised as a strategy report for decision makers (UNEP 2001). It explicitly distinguishes between efficient consumption (dematerialisation), different consumption (changing infrastructure and choices), conscious consumption (choosing and using more consciously), and appropriate consumption

¹⁶ Here, clear parallels can be found to the situation in some national governments as described in chapter 2.1.

(questioning the levels and drivers of consumption). This way, it clearly widened the focus towards Strong Sustainable Consumption. Unfortunately, these strategies were not followed up by UNEP in the establishment of the Marrakech Process. Since 2003 UNEP has hosted the secretariat of the Marrakech Process (in cooperation with UN DESA) and has been responsible for the development of the 10 Year Framework of Programmes for SCP.

OECD

The focus of the OECD programme –“Environmental Impacts of Production and Consumption” has been on resource efficiency and the link between technological change and the environment (OECD 1999; OECD 2001; OECD 2002; OECD 2002a). It aimed at exploring mutually supportive relationships between environmental improvements and economic growth. The overall objective of the OECD’s work on Sustainable Consumption appeared to be broad and ambitious. Yet, the framework for its consumption work was clearly set in line with the OECD’s traditional focus on economic growth. Thus, it failed to go beyond the aim of improving eco-efficiency.

The differentiated picture of the role of IGOs in Global Governance described in chapter 2.2 helped us to understand the developments in Global Sustainable Consumption Governance. IGOs took on the issue of Sustainable Consumption as such, but started to restrict their focus during the early phases of issue definition due to the political sensitivity of the issue. IGOs have been shying away from a more ambitious approach because, in industrialised countries, Strong Sustainable Consumption measures would be highly unpopular with consumers, with business, and, as a consequence, with governments. Contrary to frequent claims of the increasing environmental activism of consumers and the growth of corporate citizenship—which much hope in the more optimistic Sustainable Consumption literature is based upon—the prospects for support for Strong Sustainable Consumption strategies from consumers and from business are rather weak. On the consumers’ side there is little evidence that consumers are willing to change fundamentally or to reduce consumption for sustainability objectives. The business sector, in its broad majority, clearly sees the promotion of eco-efficiency as its role with respect to Sustainable Consumption and tends to reject the notion that they carry any responsibility with respect to consumption levels. Both positions influence governments positioning towards Sustainable Consumption. Since consumers are also voters, their opposition reduces the inclination of governments to agree to appropriate international policy measures. Business, in turn, has obtained increasing influence on governments due to its financial and institutional resources and its increasing legitimacy as a political actor as well (Fuchs, 2005).

The largest support for the uptake of Sustainable Consumption on the global policy agenda has come from some committed countries. Norway has received some prominence, mainly for its work in the middle of the 1990s (Norwegian Ministry for the Environment 1994; Norwegian Ministry for the Environment 1995). Denmark initiated the idea of a “10 Year Framework Programme” as the Johannesburg conference approached, the programme there being changed to the “10 Year Framework of Programmes”.

Other actors clearly are not in the same privileged position as IGOs when it comes to the forging of global agreements on Sustainable Consumption measures. Nevertheless, their work eventually contributes to Global Sustainable Consumption Governance. Thus, the achievements of NGOs and scholars frequently feed into the knowhow of IGOs.

The activities of NGOs are also important due to their potential influence on societal values on other levels of Global Governance, for instance on a local level with their links to grassroots organisations, or in a national context.

What will the future of Global Sustainable Consumption Governance look like? Our analysis of developments had shown that some efforts to improve the efficiency of consumption do exist. Thus, policy proposals promoting efficient technologies for consumer products can be expected, for instance.

However, our analysis has also uncovered limited potential for future Strong Sustainable Consumption efforts. The alignment of consumer and business interests against Strong Sustainable Consumption measures means that both IGOs and national governments (of industrialised countries) will continue to frame Sustainable Consumption in terms of improvements in efficiency. In consequence, few policy proposals addressing consumption levels should be expected.

How can a new era of Sustainable Consumption Governance be opened up? For this, one of two developments will have to take place. On the one hand, the strengthening of IGOs would potentially provide them with sufficient flexibility to address Strong Sustainable Consumption issues, even if they may be sources of controversy for consumers, business and therefore governments as well. Such a strengthening could take place in the form of a change in institutional structure and competence.

The second development that could potentially foster Strong Sustainable Consumption Governance is the adoption of new political strategies by NGOs. Given the current alignment of interests against Strong Sustainable Consumption, improved coalition building by NGOs with academia and developing countries will be needed to provide some basis for political effectiveness.

Especially regarding the latter aspect, some more recent developments can be observed and are described in chapter 6.

5. Towards research for Strong Sustainable Consumption

This chapter provides a brief overview of research projects I carried out recently but which do not constitute the core body of the thesis. They are nevertheless of crucial importance as they sharpened my perspective on the necessity of Strong Sustainable Consumption Governance. They analyse the possibilities of approaching Sustainable Consumption from a production-consumption-system perspective and elaborate the effectiveness of policy instruments for Sustainable Consumption. Finally, the chapter lists some gaps that emerged in the course of my research indicating that further studies are needed.

5.1. Some of my own contributions

5.1.1. Sustainable Production and Consumptions Systems

The core body of my work clearly focuses on how to overcome unsustainable consumption in the developed countries, especially in Europe, in line with the Agenda 21 Chapter 4 recommendation. The research on globalisation and Sustainable Consumption already pointed out, that intervention points to foster Sustainable Consumption lie outside household consumption decisions, national framework setting or even the regional (e.g. EU) sphere of influence. Recalling the factor analysis (chapter 1 figure 2), elements like resource extraction and production are part of the unsustainable consumption system. And they quite often lie in developing countries. Also, social unsustainability is mainly located there. Recognising that interventions follow the logics of specific actors (e.g. in developed countries), the solutions they provide may only shift problems somewhere else. Therefore it seems important to compliment the experiences and efforts of sector-, place-, product- and consumer-oriented approaches with analytical perspectives and practical initiatives treating production and consumption jointly.

I have carried out research on the possibilities such a production-consumption system perspective offers in a collaborate research project with Louis Lebel from Chiang Mai University as co-coordinating partner (Lebel and Lorek 2008; Lebel and Lorek 2010). Using the results of the 4-year project with research partners from 4 continents, I would like to introduce here an overview of the enabling mechanisms that will help to shift a production-consumption-system towards sustainability and – as important – the concerns, constraints and challenges these kinds of interventions bear.

Researchers and practitioners have proposed and explored many mechanisms for enabling the sustainability of production-consumption-systems. The literature review we carried out identified 11 main different ways in which sustainable production-consumption-systems could be enabled. They are roughly ordered in Table 7 from initiatives which emphasize production activities to those which are more consumption related.

Table 7 Examples of enabling mechanisms for sustainable production-consumption systems

Enabling mechanism	Short description	Concerns, constraints or challenges
Produce with less	Innovations in production process reduce the environmental impact per unit made	Rebound effects
Green supply chains	Firms with leverage in a chain impose standards on their suppliers to improve environmental performance	Unfair control of small producers
Co-design	Consumers are involved in design of products to meet functions with less environmental impact	Inadequate incentives for firms to involve consumers
Produce responsibly	Producers are made responsible for waste from the disposal of products at the end of their life	Incentives for compliance without regulation may be low for many types of products
Service rather than sell	Producers provide service rather than sell products, this reduces the number of products made while still providing to consumers the functions they need	Difficult transition for firm and consumer to make as it requires new behaviours and values
Certify and label	Consumers buy labeled products. As labels are based on independent certification, producers with good practices increase their market share	Consumers easily confused with too much information or lack of transparency & credibility of competing schemes
Trade fair	Agreements are made with producers that may include minimum price and other investments or benefits. Consumers buy products labeled as or sold through fair trade channels while producers get a better deal.	Mainstream trade still dominates. Hard to maintain fair trade benefits to producers when product becomes mainstream.
Market ethically	Reducing unethical practices in marketing and advertising would reduce wasteful and over-consumption practices.	Reluctance by policy-makers to tackle very powerful private sector interests with regulation.
Buy responsibly	Campaigns that educate consumers about impacts of individual products, classes of products and consumption patterns change behaviour overall.	Converting intentions and values into actions in everyday life is often difficult for consumers. Issues of convenience, flexibility and function still matter a lot.
Use less	Consumption may be reduced for a variety of reasons, for example, as a consequence of working less. There are many potential environmental gains from less overall consumption.	Dominant perception that using less means sacrifice. Less income and consumption may not automatically translate into better consumption impacts.
Increase wisely	Increasing consumption of under-consumers can be done in ways that minimize environmental impacts as economic activity expands.	Incentives for developed countries and firms to assist those in developing may be inadequate.

Source: (Lebel and Lorek 2008)

This systemic view should help to tackle sustainability failures in a system at those point(s) which are most effective.

5.1.2. The effectiveness of Sustainable Consumption policies

One of the major challenges towards Strong Sustainable Consumption is the establishment of effective policy instruments on all levels of decision making. To give recommendations, here I

analysed a broad range of policies established in EU countries with a focus on the relevant consumption clusters housing, food and mobility (Lorek, Giljum et al. 2008; Lorek, Spangenberg et al. 2008).¹⁷

One of the first interesting findings was that the understanding about what Sustainable Consumption means differs remarkably between different countries even within a general perception of Weak Sustainable Consumption. As a consequence, emphasis and policies also vary. Sustainable Consumption policies are more explicit in Northern and Western countries than in Southern and especially Eastern parts of Europe.

General framework setting initiatives towards sustainable production and consumption exist in only a few countries, mostly in the form of stakeholder processes. Even where national framework papers have been developed, their implementation appears to be very weak (Berg 2006; Szlezak 2007), making it questionable whether the efforts devoted into the process was worth it. In this sense they exhibit the typical pitfalls of governance processes as described in chapter 2.3.2. Task lists, follow up and control mechanisms seem to be crucial for effectiveness.

Different types of instruments are in use in Sustainable Consumption policies: administrative, economic and informative ones. Different countries use different approaches to achieve Sustainable Consumption. However, the general picture is dominated by informational instruments with less emphasis on mandatory or economic instruments.

It could be observed that according to their Weak Sustainable Consumption concepts policies quite often declare that visible changes on the markets are their explicit aim. However, the overarching objective in a sense of Strong Sustainable Consumption requires reducing man-made *impacts* on the environment. Narrowly focused, weak policies too often lose sight of which final impact an instrument may have on the state of the environment.

Our research results clearly indicate that most instruments and bottom-up initiatives work out most effectively regarding the environment when they are “guided” by clear and reliable administrative frameworks.

Administrative instruments best allow target setting, implementation control and the assessment of target achievement. They are successful in phasing out unsustainable products. In addition, implementation and control instances including sufficient financial equipment are needed.

Administrative instruments for Sustainable Consumption are more common and successfully implemented in those consumption clusters where regulation and standard setting is a common instrument anyway. They are established in the consumption areas of housing and mobility whilst they can hardly be found in the food cluster.

The traditional top-down type of regulatory policy is neither outdated nor in contradiction with other more en vogue instruments (economic and informational). In fact it is necessary to make the latter effective by providing a clearly orientated framework for all the agents involved. Within the framework, more innovative modes of public-private governance and partnerships can play an important role, for example, through cooperation and voluntary agreements (“agree-and-control”), through incentives, and through the networking and involvement of stakeholders to supplement regulatory policy.

The same supportive function holds true for the various business initiatives (Mont 2008). However, they do not replace regulations, targets and timelines, but rather smoothen their

¹⁷ The findings are derived from the FP7 project Sustainable *CO*nsumption Policies Effectiveness Evaluation (SCOPE²).

implementation. For instance, business innovation behaviour is mainly triggered by stringent environmental policy. A large share of so-called “voluntary” actions by companies as well as environmental product innovations is either driven by existing or anticipated regulatory actions. The crucial demand to framework setting is that politics must stimulate and coordinate the process(es) without suffocating innovative experimentation (Rehfeld, Rennings et al. 2007; ASCEE team 2008; Frondel, Horbach et al. 2008).

The role of administrations themselves as sustainable consumers is still a rather weak one.

Regarding economic instruments our results indicate that sticks (punitive instruments like taxes and charges) seem to be more effective than carrots (stimulating economic instruments). Punitive instruments were found to have the best environmental effect where substitutes are available and some economic incentives are needed to make those substitutes attractive on the market. Positive financial incentives like subsidies gain in importance when they accompany regulatory instruments or speed up the change towards new technologies. They work even better if the financial incentives are—step by step or in a linear way—linked to an ecological target, for example, the higher the energy saving, the higher the subsidy.

The effectiveness of punitive instruments can be weakened by the strong market and lobbying power of traditional market actors. Further on, equity aspects have to be considered in the design of the measure.

Clearly overemphasized is the value and effectiveness of informational instruments, which are dominating current SCP policies and strategies. Informational instruments are the most popular instruments but show the weakest impact on changing state of the environment. The major problem is not the quantity but the quality of information. Too much information focuses on marginal issues. Additionally, success is limited to so-called “easy choices”. In successful cases the environmental information are accompanied by further measures. Regarding environmental labels, those that worked successfully indicated positive as well as negative environmental consequences.

Information overloads (in sociological terms) and high transaction costs for reliable information (in economic terms), respectively, strongly suggest that it is best to analyse first whether or not a lack of information is really the core of the problem before focussing on informational instruments (Bilharz, Lorek et al. 2008). This is quite often not the case in the context of consumers’ decision making, where price and availability are more frequently the main obstacles to sustainable purchasing decisions. Instead, information on Sustainable Consumption is more important in curricula for architects and designers, and it could be a part of the professional education of retailer managers.

It follows from this, that as a general rule for Strong Sustainable Consumption policies substantial reductions of negative environmental consequences can only be achieved if several measures are in place at the same time. These include, within an adequate administrative framework, economic measures, information measures, as well as the readiness of new eco-efficient technologies to be spread widely across the market. Such systemic changes holding a larger potential for change than single instruments have mostly been out of sight so far.

Finally, it has to be recognised that a successful implementation of a policy instrument is always context-dependent. Aspects such as the historical development of specific consumption patterns (Heinonen, Kortti et al. 2003; Trentmann 2006; Heinonen 2009), institutional arrangements (including societal values), technological aspects and other factors determine to a large extent whether or not a policy is effective. Therefore, experiences from one country cannot be directly transferred to other countries (Christensen, Godsken et al. 2007).

5.2. Further research needs

Some further research questions directly appear from my studies. How to carry forward and combine, for example, the insights gained from the search for priorities and indicators with the observed influences of globalisation? The direction of research will be illustrated with one example here. If we know on the one hand that the consumption of organic products has to increase and on the other hand that food consumption is strongly influenced by trade, capital concentration and so on, a rather concrete question appears –how can the influences of globalization be structured and used to increase the share of organic food products consumed by households?”

Interesting sub-questions in this context would be:

with respect to the influence of trade:

1. Which trade laws and processes inhibit an increasing market share of organic production?
2. Which political mechanisms exist to modify trade laws in favour of organic production?

with respect to the influence of capital concentration:

3. Which structural or cultural factors inhibit an increasing share of organic production in the context of agro-business corporations and how can they be overcome?
4. If positive examples of the influence of capital concentration on organic production exist, how can they be supported and transferred to other cases?

with respect to the influence of shifts in political power:

5. Which power constellations inhibit an increasing share of organic production?
6. How can political coalitions be built and used to foster an increase in the share of organic production?

with respect to the influence of the acceleration of technological innovation:

7. Which current technological developments promise to induce an increase in the share of organic production? How can political means be used to support the global diffusion of these developments?

An important aspect of the suggested approach is that it goes beyond the traditional discussion of how to prevent the negative influences of globalization (i.e. shrimp-turtle or dolphin-tuna trade-offs), to consider specifically and explicitly the positive potential globalization holds.

However, how to utilise globalisation may not always be the most promising direction. For mobility, for example, a core research question relate to public transport. Agreement exists that a reduction in private modes of transport and a shift to public transport are necessary for the development of more sustainable consumption patterns. Thus, the combination of modes of transport with distances travelled provides an important sustainability indicator. As our analysis has shown, transport options in turn are highly influenced by globalization. The forces of globalization currently affect mobility patterns dominantly in favour of private car use and high speed, long distance travelling. Local or regional commuter systems, furthermore, are increasingly under pressure to adapt to market mechanisms. Being economically ‘efficient’ becomes more important than the mobility needs of the population. So the core question is how to structure and use the regionalization (rather than globalization) of the transport market in order to provide more sustainable transport options.

On a more general level, the insights I have gained during my research as well as in political discussions indicate that there is no lack of knowledge in general regarding what is the right direction towards Sustainable Consumption, at least not according to its ecological components. Even the proponents of Weak Sustainable Consumption generally target their measures in that direction. Only they tend to be too tentative. Two other aspects have been undervalued so far. One is how to implement measures properly and the second is the speed with which changes have to take place.

To start with the latter, to increase the speed of change research has to increase the sense of urgency and to make the need for action and implementation more visible. Therefore it has to come up with clear and time-bound targets of what has to be reduced by when to remain within our ecological limits. What is developed in the debate on climate change has to be adapted in other areas, too. Scientifically solid targets have to serve here as orientation points for political and societal development (EEA 2008).

To help with implementation it seems we have to overcome the barriers presented by mainstream thinking which is dominated by economic reasoning.

An important contribution here is the development of alternative how to measure and communicate what contributes to human well-being. While the need for such measures is increasingly recognised (European Communities 2007; New Economics Foundation 2009), further substantial research is needed to find solid answers (Stiglitz, Sen et al. 2009).

Support has been developed as well for the emerging scientific and partly political discourse on “*décroissance*” (poorly translated up to now as de-growth) (Flipo and Schneider 2008; Hinterberger, Hutterer et al. 2009). Research on this topic is overdue (Lorek 1993) as it has the potential to develop scenarios showing that a shrinking economy does not have to lead to social decline (unsustainable de-growth). Instead happy de-growth with an increase or at least stability of well-being is possible (Jackson 2009; Spangenberg 2010).¹⁸

Both strains of research could help to overcome the reservations of proponents of Weak Sustainable Consumption to economic shrinking and their view that a happy (because sustainable) growth is somehow possible.

Research is also needed regarding the social aspects of Sustainable Consumption. Two aspects in particular appear to have been weakly elaborated so far.

First, various practical experiences of how to organise consumption and lifestyles in a (more) sustainable way are carried out on a micro level. Structured investigations on how to shift those social innovations from the micro to the macro level could be improved (Manzini and Jégou 2003; Seyfang 2009).

Second, for the full assessment of goods and services within the context of sustainable development, social and socio-economic life cycle assessment (LCA) should complement the environmental one. While a first approach has been made to develop guidelines for such an approach (UNEP 2009) the field is still open for carrying out such LCAs.

Finally, NGOs need support from research in the form of guidance, not only on what to effectively campaign for or demand from policy making but also on how to best achieve political influence. New and better strategies of lobbying and campaigning might develop more quickly if there was closer cooperation between science and practice.

¹⁸ The terms happy/unhappy growth/degrowth are borrowed from Ricci, A. (2008). New socio-economic concepts, paradigm shift and territorial dynamics in a long term perspective. SSH (Social Sciences and Humanities) Infoday. Brussels, October 3 2008.

6. Political realities and necessities

In this chapter I present some conclusions as to which governance strategies are necessary in order to foster Strong Sustainable Consumption.

Heading the adverse wind

One of the major challenges for Strong Sustainable Consumption is that it is not in line with the dominant political and societal worldview, mainly the belief in economic growth as recipe to cure all ills. The G20 meeting in its “Leaders Statement” argued that it is growth which has to be sustained (Group of 20 2009). And so do countless other high level political documents such as the Lisbon Treaty where concern about growth appears frequently while consumption only appears in the context of the ‘strengthening of private consumption in phases of weak economic growth’. For a few months following the economic crisis in autumn 2008 there was some hope that the investments promised by all state leaders would steer development towards more sustainability. But while Korea for example had more than 80% of ecological investments in its stimulus package, the EU countries had only 5-10%. However the attempt to merge Sustainable Consumption with the financial debate should not be given up (Cohen 2007).

Sustainable Consumption is not a topic on high-level political agendas and if it is, it is in the form of Weak Sustainable Consumption as it does not contradict mainstream thinking. Accordingly considerations on sustainable consumption are missing in precisely those institutions that contribute most to shaping patterns of consumption, like the WTO and big business organizations. With its explicit reservations on economic growth, Strong Sustainable Consumption is hardly in the short-term interest of powerful actors.

The lack, if not total absence of, support from powerful actors also limits the focus of those organizations which have taken up the challenge of sustainable consumption. As a result they steer the discussion to ‘harmless’ topics. An attempt to at least start a discussion on systemic changes within the Marrakech Process headed by UNEP/UN DESA through including agenda setting activities on “topics too hot to handle” in the 10 Year Framework of Programms failed immediately (SCORE Network 2008). The OECD still devoted huge efforts to exploring the willingness to pay for more sustainable goods and services (OECD 2009).

Nevertheless, the barriers and adverse winds hindering Strong Sustainable Consumption do not change at all the ecological and social facts that we are facing. But they do influence the strategies developed on how to approach them.

Carrot and stick to stimulate the public debate

First of all, those promoting Strong Sustainable Consumption in favour of “greening the market” should more clearly differentiate between ‘weak’ and ‘strong’ forms in order to structure the debate more clearly.

To open up the debate to a broader audience, including the public as well as policy makers, a two-pronged strategy is necessary: that is, a carrot and stick approach.

The stick in this case is to create a sense of urgency. This means promoting the idea that reducing consumption is not an option, but is going to come anyway. There are evident ecological limits that we can either actively anticipate or passively allow to overcome us. In any case, limits will substantially harm economic growth. How to ensure a soft landing

instead of a hard one solely depends on the proponents of Strong Sustainable Consumption to get the message across in due time.

As has already been developed for climate change we need clear and scientifically conclusive scenarios about how our lives will be influenced by resource scarcity and especially the peak in oil supply. Those scenarios especially have to highlight the social costs of inaction and the risks for social security from a local to global level.

On this basis, sustainability targets have to be developed regarding how to stay within these ecological limits, including time tables for what to reach by when and who has to contribute what. Research can (only) provide the first step here. Societal agreements on how to act on these recommendations as well as the control over the decisions made are the task of governance processes and thus of governments.

For the time being, a promising approach at least in terms of clearly indicating how the general impact of consumption is developing is being constructed by the European Environmental Agency. Their indicator set for Sustainable Consumption explicitly strives to answer questions like *‘is the environmental pressure activated by consumption sustainable?’* (EEA and ETC/SCP 2009) Assuming they will take an indicator like the Ecological Footprint to answer the question the target is implicitly given: restricting the resource use per year to the annual production capacity of the planet.

The carrot in this case is to better bring to attention that a shrinking of economic processes is not as much a disaster as mainstream economics suggests. Well-being in developed countries has for a long period already been successfully decoupled from economic growth. This needs to be communicated more offensive. Alternative measures of well-being (New Economics Foundation 2009; Stiglitz, Sen et al. 2009) can help to overcome growth addiction (van Griethuysen 2009). It is important to better highlight other elements of well-being than increasing consumption, like wealth of time. Examples like the US initiative *‘Take Back Your Time’* for reducing working hours and extended holidays are a valid contribution to Strong Sustainable Consumption without explicitly focusing on consumption (Maniates 2010). Also a public discourse on happiness can help to consider the limitations on increasing human well-being through material consumption as soon as it reaches and goes beyond a certain level of need fulfilment (Hofstetter and Madjar 2003; Layard 2005).

Demanding responsibility of governments in governance

The actual debate on Sustainable Consumption in political circles shows the same epistemic fallacy as the discussions about the priority fields of action on Sustainable Consumption did ten years ago. All tend to use the policy strategy that is being talked about the most. And this dominant strategy is still information provision. There is ample evidence that hard policies like regulatory instruments and economic instruments are most effective (Rehfeld, Rennings et al. 2007; ASCEE team 2008; Lorek, Giljum et al. 2008). This message is as strong as the message *‘care for the consumption clusters food, housing and mobility’*. While the latter is accepted, the former is still widely ignored. Instead huge efforts are made again and again to increase informational instruments. The policy instrument of information provision, however, appears to be as ineffective in the policy instrument canon as the call to switch off stand-by appliances in the debate about Sustainable Consumption priorities. Scientific insight on the effectiveness of policy instruments obviously must be communicated to political decision makers in a more convincing way. This includes governments’ responsibility to phase out unsustainable consumption options (Church and Lorek 2007) or choice editing as it is called lately (Maniates 2009).

Another delay in taking action towards Strong Sustainable Consumption is caused by the retreat of government in favour of governance. In general the governance approach – for example, in the development of Sustainable Consumption Strategies or Action Plans – is applaudable. However, the weakness in implementing the agreements produced by such strategies makes the effort needed for their development rather questionable. Whatever governance processes come up with, control over the follow up and its implementation is the task of governments. They have to ensure that contributions dedicated to specific actors to reach agreed targets are indeed carried out. As long as national governments understand their roles in the governance of Sustainable Consumption as one of providing opportunities for the exchange of opinions and voluntary commitments that are not controlled, a significant drive towards Strong Sustainable Consumption will fail to materialize (Berg 2006).

Appreciating the potential of social innovation

Important incentives for Strong Sustainable Consumption are quite likely to come from social innovation. A countless number of initiatives are on the way from food co-operatives to public gardening, the provision of services with explicit sustainable character, neighbourhood centers, and alternative, local currencies (Seyfang and Smith 2007; Seyfang 2009). The potential of such approaches remain insufficiently explored. But on closer examination they are development projects for the global North which can have the same model role as traditional development projects have in the global South (Lorek 1996). What is needed is to bring successful experiments from the micro to the macro level. This is not restricted to the question of how to multiply such approaches but more about how to establish political macro structures to foster this (Löwe 2009).

Utilizing the advantages of multi-level governance

Sustainable Consumption is a typical field where success depends on activities on levels of governance. The challenge is to ensure a proper exchange between these levels.

Action at different levels needs to be coordinated so that ambitious local actions are supported by national and international institutions and can feed back their results and experiences into national and international processes. If there is no coherent linking between the different policy agendas, ambitious local projects are no more likely to make a significant impact on Strong Sustainable Consumption than the high-level talk shops in the global context. Coherent positioning and linking is necessary from local to global and back (Lorek 2005). Thus, timely information about the political processes is as necessary at the grassroots level as a valid pool of examples from local initiatives to inspire national and international work on Sustainable Consumption. This requires the engagement and responsibility of those representing the different stakeholders in the higher level panels. The actual situation, for example, regarding the flow of information from the Advisory Committee of the Marrakech Process, still allows for a lot of improvement.

Sharpening NGO strategies

Non Governmental Organisations, especially those working on the environment, development, and consumer issues, need to distance themselves from ‘weak’ sustainable consumption and from addressing consumers merely as consumers, rather than as citizens. To foster acceptance for such policies NGOs have an important, more strategically oriented role to play than they have adopted so far (Akenji 2007). Increasingly this is a catalyst role, as they don’t have

massive resources to implement many initiatives themselves. What NGOs can do is bring people together and inspire them. They are in a key position to induce societal debate and awareness regarding the steps needed to reach Strong Sustainable Consumption. Communication and discourse are basic conditions for fostering the changes required. NGOs can hardly be replaced in developing values and visions of Sustainable Consumption and fostering citizen engagement (Lorek 2003; Spangenberg and Lorek 2003). The more complicated the issue, the more important it is to take up the catalyst role. Only in this way can politics be brought back to Sustainable Consumption instead of greening the market.

As part of the strategic re-orientation, environmental campaigning has to overcome the habit of promoting Sustainable (in fact green) Consumption by marketing strategies. Instead of encouraging individuals to adopt simple and painless behavioural changes – that have highly questionable potential – as has recently been seen with the LOHAS movement (Lifestyle of Health and Sustainability), an alternative approach to motivate pro-environmental behavioural change is required in order to get people to engage in more significant changes. Such an approach no longer draws on analogies from marketing strategies, but rather from political strategies articulating what it stands for and which values it is driven by. Studies already confirm that an appeal to environmental values is more likely to lead to a spill-over into other pro-environmental patterns of behaviour than an appeal to financial self-interest or social status (WWF-UK 2008; WWF-UK 2009).

Those who have already worked on Sustainable Consumption issues for a longer period of time may benefit from convincing other local and national NGOs of the relevance of Strong Sustainable consumption for their current field of work. For a broad majority of NGOs there is still a lack of clear understanding about the emerging challenges of the issue (Church and Lorek 2007). Most NGOs working on isolated topics such as energy or food, voluntary simplicity or cleaner production can be connected to a Sustainable Consumption perspective. The link just has to be made visible (Barber 2007).¹⁹ This awareness that their different tasks have a common goal can strengthen their voice and their power to bring out change.

Increased political effectiveness also has to grow from improved coalition building by NGOs with other Civil Society Organisations such as academia or trade unions. Experience shows that lobbying efforts are more successful if they bundle various arguments from various groups of society.

Besides backing up each other in content and argumentation, academia can be supportive for NGO engagement in another sense. Scientific efforts can help to improve their effectiveness in pointing out gaps in the strategies that NGOs are using and suggest improvements in detecting ineffective strategies (Narberhaus, Lorek et al. 2009).

A lot of energy is needed to bring Strong Sustainable Consumption forward. The motivation for its proponents is that there is no alternative. Lots of efforts have to be taken on multiple levels by multiple actors. All of them are needed as they are the strings which build the rope. However, pulling in the same direction has to be improved. This thesis hopefully provides some help for the activity of political actors as well as for research on how to support further Strong Sustainable Consumption.

¹⁹ The same seems to be true and useful for the different stakeholders on the governmental side, overcoming the narrow thinking within the boundaries of government departments

ANNEX

Literature used to identify the determinants of consumption as described in chapter 3.3.3

FOOD

- Biesiot, W.; Moll, H.C. 1995. Reduction of CO₂ emissions by lifestyle changes. Groningen: Dutch National Research Programm of Global Air Pollution and Climate Change.
- Burdick, Bernhard. 1997. Die Landwirtschaft produziert zu viel...Treibhausgase. Umwelt kommunale ökologische Briefe 13-14.
- Carlsson-Kanyama, Annika. 1999. Consumption Patterns and Climate Change: Consequences of eating and traveling in Sweden, Department of Systems Ecology, University of Stockholm, Stockholm.
- Dürrenberger, Gregor; Patzel, Nikola. 1999. Energy Metabolism of Swiss Households. Paper read at The Second International Symposium on Sustainable Household Consumption, 3.-4. June, at Groningen-Paterswolde.
- Enquete Kommission. 1994. Studienprogramm Landwirtschaft der Enquete Kommission "Schutz der Erdatmosphäre". Edited by Deutscher Bundestag. Bonn.
- Faist, Mireille. 1999. The Impact of Household Food Consumption on Resources and Energy Management. Paper read at The Second International Symposium on Sustainable Household Consumption, 3.-4. June, at Groningen-Paterswolde.
- Goodland, R. 1998. Environmental Sustainability: Eat Better and Kill Less. In *The Business of Consumption*, edited by Laura Westra and Patricia H. Werhane. Maryland: Rowman & Littlefield Publishers, Inc.
- Jongen, Wim; Meerdink, Gerrit. 1998. Food Product Innovation: How to Link Sustainability and the Market. Wageningen Agricultural University.
- Jungbluth, Niels. 2000. Umweltfolgen des Nahrungsmittelkonsums - Beurteilung von Produktmerkmalen auf der Grundlage einer modularen Ökobilanz. Dipl. Ing Technischer Umweltschutz, Department für Umweltnaturwissenschaften, Eidgenössische Technische Hochschule Zürich, Zürich.
- Kramer, Klaas Jan; Moll, Henri C.; Nonhebel, Sanderine. 1999. Total greenhouse gas emissions related to the Dutch crop production system. *Agriculture, Ecosystems & Environment* 72:9-16.
- Lorek, Sylvia. 1999. Indicators for priority fields of action towards sustainable household consumption. Paper read at The Second International Symposium on Sustainable Household Consumption, 3.-4. June, at Groningen-Paterswolde.
- Lorek, S., Spangenberg, J.H. 2001. Indicators for Environmentally Sustainable Household Consumption. *Int. J. Sustainable Development* 4 (1): 102-120.
- Moll, Henry. 1999. Facts and Visions on Food. University of Groningen.
- Patznar, Mika; Raijas, Anu; Heiskanen, Eva. 2000. Green Consumers? Greening Consumption? 1994 [cited 2000]. Available from <http://www.iisd.ca/linkage/consume/inst-pan.html>.
- Quist, Jaco; Knot, Marjolijn; Wel, Marjan van der; Vergragt, Pholip. 1999. Strategies for Sustainable Households. Paper read at The Second International Symposium on Sustainable Household Consumption, 3.-4. June, at Groningen-Paterswolde.
- Sleeswijk, A.; Klein, R.; Meeusen-van Onna, M.; Leneman, H.; Sengers, H. Zeijts, H. van; Reus, J. 1996. Applications of LCA to Agricultural Products. Leiden: Leiden University, Center of Agriculture and Environment.
- Stagl, Sigrid; O'Hara, Sabine U. 1999. Preferences, Needs and Sustainability - The Case of Local Food Markets. Paper read at The Second International Symposium on Sustainable Household Consumption, 3.-4. June, at Groningen-Paterswolde.
- Vitterso, Gunnar; Strandbakken, Pal; Sto, Eivind. 1999. Sustainable Consumption and the Consumer: Introducing the Green Household Budget. Paper read at The Second International Symposium on Sustainable Household Consumption, 3.-4. June, at Groningen-Paterswolde.

Wiltling, H. C.; Biesiot, W. 1998. Household Energy Requirements. In *Green Households? Domestic Consumers, Environment, and Sustainability*, edited by Klaas Jan Noorman and Ton Schoot Uiterkamp. Earthscan, London.

MOBILITY

Bannister, D. 1992. Energy Use, Transport and Settlement Patterns. In *Sustainable Development and Urban Form*, edited by Breheny. Pion Ltd, London.

Carlsson-Kanyama, Annika; Linden, Anna-Lisa. 1999. Travel patterns and environmental effects now and in the future - Implications of differences in energy consumption among socio-economic groups. *Ecological Economics* 30 (3):407-417.

Carlsson-Kanyama, Annika; Linden, Anna-Lisa; Thelander, Asa. 1999. Gender, Traveling, and Environmental Impacts, Paper published as part of the doctoral thesis of Carlsson-Kanyama, Stockholm.

Coenen, Frans; Fuchs, Doris; Peppel, Rob van der. 2000. *The Environment and Social Well-being*. Enschede: Center for Clean Technology and Environmental Policy.

Diepen, A. L. M. van. 1998. Spatial Aspects of Housing. In *Green Households? Domestic Consumers, Environment, and Sustainability*, edited by Klaas Jan Noorman and Ton Schoot Uiterkamp. Earthscan, London.

Diepen, Albertine van; Voogt, Henk. 1999. Sustainability and Planning: Does Urban Form Matter? Paper read at The Second International Symposium on Sustainable Household Consumption, 3.-4. June, at Groningen-Paterswolde.

Diewitz, U. von; Klippel, P.; Verron, H. 2000. Mehr Mobilität mit weniger Verkehr. Plädoyer für eine zukunftsfähige Mobilität. Paper read at B.A.U.M. Workshop "Nachhaltige Konsummuster - Möglichkeiten der Umweltkommunikation, at Berlin, 15.-16. February.

Dürrenberger, Gregor; Patzel, Nikola. 1999. Energy Metabolism of Swiss Households. Paper read at The Second International Symposium on Sustainable Household Consumption, 3.-4. June, at Groningen-Paterswolde.

Farthing, S.; Winter, J.; Coombes, T. 1996. Travel Behavior and Local Accessibility to Services and Facilities. In *The Compact City: A Sustainable Urban Form*, edited by Jenks Burton and Williams. E&FN Spon, London.

Hamerslag, R.; Immers, B.; Scheltens, W. 1988. Research on Factors Influencing Car Mobility in the Netherlands: Dept. of Transportation, Planning and Highway Engineering, Delft University.

Hoyer, Karl G.; Holden, Erling. 1999. Housing as Basis for Sustainable Consumption. Paper read at The Second International Symposium on Sustainable Household Consumption, 3.-4. June, at Groningen-Paterswolde.

Hoyer, Karl G.; Holden, Erling. 2000. Housing as Basis for Sustainable Consumption. Paper read at ProSus Workshop on Sustainable Production and Consumption, at Oslo, June 4.-5.

Kitamura et al. 1997. A Micro-Analysis of Land Use and Travel in Five Neighborhoods in the San Francisco Bay Area. *Transportation* 24:125-158.

Knapp, Frank D. 1998. Determinanten der Verkehrsmittelwahl. Edited by K.-D. Gröske. Vol. 10, *Abhandlungen zur Nationalökonomie*. Duncker & Humblot, Berlin.

Ligteringen, Josee. 1998. The Effects of Public Policies on Household Metabolism. In *Green Households? Domestic Consumers, Environment, and Sustainability*, edited by Klaas Jan Noorman and Ton Schoot Uiterkamp. Earthscan, London.

Linderhof, V. G. M.; Kooreman, P. 1998. Economic Aspects of Household Metabolism. In *Green Households? Domestic Consumers, Environment, and Sustainability*, edited by Klaas Jan Noorman and Ton Schoot Uiterkamp. Earthscan, London.

Newman, P.; Kenworthy, J. 1989. Gasoline Consumption and Cities. A Comparison of US Cities with a Global Survey. *Journal of the American Planning Association*:24-37.

Noorman, Klaas Jan; Biesiot, Wouter; Schoot Uiterkamp, Ton. 1998. Household Metabolism in the Context of Sustainability and Environmental Quality. In *Green Households? Domestic Consumers, Environment, and Sustainability*, edited by Klaas Jan Noorman and Ton Schoot Uiterkamp. Earthscan, London.

Spangenberg, Joachim; Spitzner, Maike. 1997. Wider die allgemeine Mobilmachung Europas. *Zeitschrift für kritische Sozialwissenschaft* 27 (2):245-262.

Wal, Jack van der; Noorman, Klaas Jan. 1998. Analysis of Household Metabolic Flows. In *Green Households? Domestic Consumers, Environment, and Sustainability*, edited by Klaas Jan Noorman and Ton Schoot Uiterkamp. Earthscan, London.

Wiltling, H. C.; Biesiot, W. 1998. Household Energy Requirements. In *Green Households? Domestic Consumers, Environment, and Sustainability*, edited by Klaas Jan Noorman and Ton Schoot Uiterkamp. Earthscan, London.

Wolf, Matthias. 1999. Aspekte zukünftiger Mobilität. Secretariat for Futures Studies, Gelsenkirchen.

ENERGY

Bus, Andre. 1999. Sustainable neighbourhood renewal of post war neighbourhoods in the Netherlands: What can we learn of it? Paper read at The Second International Symposium on Sustainable Household Consumption, 3.-4. June, at Groningen-Paterswolde.

Coenen, Frans; Fuchs, Doris; Peppel, Rob van der. 2000. The Environment and Social Well-being. Center for Clean Technology and Environmental Policy, Enschede.

Diepen, A. L. M. van. 1998a. Developments in Household Composition in Europe. In *Green Households? Domestic Consumers, Environment, and Sustainability*, edited by Klaas Jan Noorman and Ton Schoot Uiterkamp. Earthscan, London.

Diepen, A. L. M. van. 1998b. Spatial Aspects of Housing. In *Green Households? Domestic Consumers, Environment, and Sustainability*, edited by Klaas Jan Noorman and Ton Schoot Uiterkamp. Earthscan, London.

Dürrenberger, Gregor; Patzel, Nikola. 1999. Energy Metabolism of Swiss Households. Paper read at The Second International Symposium on Sustainable Household Consumption, 3.-4. June, at Groningen-Paterswolde.

Gatersleben, Brigitta. 1999. Sustainable Household Consumption and Quality of Life. Paper read at The Second International Symposium on Sustainable Household Consumption, 3.-4. June, at Groningen-Paterswolde.

Gatersleben, Brigitta; Vlek, Charles. 1998. Household Consumption, Quality of Life, and Environmental Impacts: A Psychological Perspective and Empirical Study. In *Green Households? Domestic Consumers, Environment, and Sustainability*, edited by Klaas Jan Noorman and Ton Schoot Uiterkamp. Earthscan, London.

Hoyer, Karl G.; Holden, Erling. 1999. Housing as Basis for Sustainable Consumption. Paper read at The Second International Symposium on Sustainable Household Consumption, 3.-4. June, at Groningen-Paterswolde.

Ligteringen, Josee. 1998a. The Effects of Public Policies on Household Metabolism. In *Green Households? Domestic Consumers, Environment, and Sustainability*, edited by Klaas Jan Noorman and Ton Schoot Uiterkamp. Earthscan, London.

Linderhof, V. G. M.; Kooreman, P. 1998. Economic Aspects of Household Metabolism. In *Green Households? Domestic Consumers, Environment, and Sustainability*, edited by Klaas Jan Noorman and Ton Schoot Uiterkamp. Earthscan, London.

Schmoranz, Ingo, ed. 1994. Die Energienachfrage privater Haushalte. Edited by W. A. Müller. Vol. 95, *Wirtschaftswissenschaftliche Beiträge*. Physica-Verlag, Heidelberg.

Vringer, Kees; Blok, Kornelis. 2000. Long-term trends in direct and indirect household energy intensities: a factor of dematerialisation. *Energy Policy* 28:713-727.

Wal, Jack van der; Noorman, Klaas Jan. 1998. Analysis of Household Metabolic Flows. In *Green Households? Domestic Consumers, Environment, and Sustainability*, edited by Klaas Jan Noorman and Ton Schoot Uiterkamp. Earthscan, London.

Wiltling, H. C.; Biesiot, W. 1998. Household Energy Requirements. In *Green Households? Domestic Consumers, Environment, and Sustainability*, edited by Klaas Jan Noorman and Ton Schoot Uiterkamp. Earthscan, London.

Literature used to identify the characteristics of globalisation in chapter 3.3.3

- Arentsen, Maarten; Fuchs, Doris. 2000. Green Electricity in the Market Place: The Policy Challenge. Paper read at Liberalization of European Electricity Markets, at Copenhagen, Mai 2000
- Brown, Donald A. 1998. The Need to Face Conflicts between Rich and Poor Nations to Solve Global Environmental Problems. In *The Business of Consumption*, edited by Laura Westra and Patricia H. Werhane. Rowman & Littlefield Publishers, Maryland.
- Brenkert, Gorge G. 1998. Marketing, the Ethics of Consumption and Less-Developed Countries. In *The Business of Consumption*, edited by Laura Westra and Patricia H. Werhane. Rowman & Littlefield Publishers, Maryland.
- Beck, Ulrich. 1996. Die Subpolitik der Globalisierung: Die neue Macht der multinationalen Unternehmen. *Gewerkschaftliche Monatshefte* 47 (11/12):673-680.
- Bonnano, A.; Busch, L.; Friedland, W. Gouveia, L.; Mingione, E, ed. 1994. *From Columbus to ConAgra. The Globalization of Agriculture and Food*. Kansas University Press, Lawrence.
- Busch, Lawrence; Juska, Arunas. 1997. Beyond Political Economy: Actor Networks and the Globalization of Agriculture. *Review of International Political Economy* 4 (4):688-708.
- Carlsson-Kanyama, Annika. 1997a. Weighted average source points and distances for consumption origin-tools for environmental impact analysis? *Ecological Economics* 23:15-23.
- Carlsson-Kanyama, Annika. 1997b. Greenhouse Gas Emissions in the Life-Cycle of Carrots and Tomatoes. Department of Environmental and Energy Systems Studies/Lund Institute of Technology, Lund.
- Carlsson-Kanyama, Annika. 1999. Consumption Patterns and Climate Change: Consequences of eating and traveling in Sweden, Department of Systems Ecology, University of Stockholm, Stockholm.
- Cerny, Philip. 1990. *The Changing Architecture of Politics. Structure, Agency and the Future of the State*. Sage London.
- Cerny, Philip. 1998. Globalisierung und die neue Logik kollektiven Handelns. In *Politik der Globalisierung*, edited by U. Beck. Suhrkamp, Frankfurt a. M.
- Clapp, Jennyfer. 1998. The Privatization of Global Environmental Governance. *Global Governance* 4 (3):295-316.
- Clayton, Richard; Pontuson, Jonas. 1998. Welfare-State Retrenchment Revisited. Entitlement Cuts, Public Sector Restructuring, and Inegalitarian Trends in Advanced Capitalist Societies. *World Politics* 51 (67-98).
- Cogoy, Mario. 1999. The consumer as a social and environmental actor. *Ecological Economics* 28:385-398.
- Cutler, Claire. 1999. Locating 'Authority' in the Global Political Economy. *International Studies Quarterly* 42:59-81.
- Daly, Herman E. 1998. Consumption: The Economics of Value Added and the Ethics of Value Distributed. In *The Business of Consumption*, edited by Laura Westra and Patricia H. Werhane. Rowman & Littlefield Publishers, Maryland.
- Daly, Herman; Goodland, R. 1994. An ecological-economic assessment of deregulation of international commerce under GATT. *Ecological Economics* 9:73-92.
- Fine, Ben. 1994. Towards a political economy of food. *Review of International Political Economy* 1(3):519-546.
- Frank, Robert. 1999. *Luxury Fever: Why money fails to satisfy in an era of excess*. The Free Press, New York.
- Freyfogle, Eric T. 1998. Consumption and the Practice of Land Health. In *The Business of Consumption*, edited by Laura Westra and Patricia H. Werhane. Rowman & Littlefield Publishers, Maryland.
- Friedland, W. 1994. The Global Fresh Fruit and Vegerable Industry: an Industrial Organization Analysis. In *The Global Restructuring of Agro-Food Systems*, edited by McMichael. Cornell University Press, Ithaca.
- Garrett, Geoffrey. 1998. Global Markets and National Politics: Collision Course or Virtuous Cycle. *International Organization* 52 (4):787-824.
- Goodland, R. 1998. Environmental Sustainability: Eat Better and Kill Less. In *The Business of Consumption*, edited by Laura Westra and Patricia H. Werhane. Rowman & Littlefield Publishers, Maryland.

- Goodmann, David. 1997. World-scale Processes and Agro-food Systems: Critique and Research Needs. *Review of International Political Economy* 4 (4):663-687.
- Goodmann, David; Redclift Michael. 1994. Constructing a Political Economy of Food. *Review of International Political Economy* 1 (3):547-552.
- Group of Lisbon. 1993. *Limits to Competition*. Gulbenkian Foundation, Lisbon.
- Haake, Julia; Jolivet, Patrick. 1997. Towards Sustainable Consumption. An Analytical Framework for a Globalized World. Paper read at International Workshop "Economic Globalization and Sustainable Developmnt: Are They Compatible", at the Universite de Versailles-Saint-Quentin-en-Yvelines.
- Handy, C.; MacDonald, J. 1989. Multinational Structures and Strategies of US Food Firms. *American Journal of Agricultural Economics*:1246-1254.
- Hedemann-Robinson, Martin. 2000. Defending the Consumer's Right to a Clean Environment in the Face of Globalisation. *Journal of Consumer Policy* 23:25-61.
- Heusinger, Eva; Reichert, Tobias; Wöldecke, Klaus, ed. 1999. *Einkaufen verändert die Welt*. Weltladen Dachverband & Schmetterling Verlag, Stuttgart.
- Hirst, P.; Thompson, G. 1992. The problem of 'globalization': international economic relations, national economic management and the formation of trade blocs. *Economy and Society* 20 (1):1-56.
- Howes, David Ed. 1996. *Cross Cultural Consumption - Global markets, local realities*. Routledge, London.
- Humphrey, Kim. 1998. *Shelf life - supermarkets and the changing cultures of consumption*. Cambridge University Press, Cambridge.
- Hurd, Ian. 1999. Legitimacy and Authority in International Politics. *International Organization* 53 (2):379-408.
- Johnstone, Nick. 1995. Trade liberalization, economic specialization and the environment. *Ecological Economics* 14:165-173.
- Jungbluth, Niels. 2000. *Umweltfolgen des Nahrungsmittelkonsums - Beurteilung von Produktmerkmalen auf der Grundlage einer modularen Ökobilanz*. Dipl. Ing Technischer Umweltschutz, Department für Umweltnaturwissenschaften, Eidgenössische Technische Hochschule Zürich, Zürich.
- Kahler, Miles. 1992. External Influences, Conditionality and the Politics of Adjustment. In *The Politics of Economic Adjustment*, edited by Stephen Haggard and Robert Kaufmann. Princeton University Press, Princeton.
- Kalb, Don; Land, Marco von der; Staring, Richard; Steenbergen, Bart van; Wilterdink, Nico. 2000. *The Ends of Globalization. Bringing Society Back In*. Rowman & Littlefield, Oxford.
- Korten, David. 1995. *When Corporations Rule the World*. Kumarian Press, West Hartford.
- Kratochwil, Friedrich. 1997. International Organizations: Globalization and the Disappearance of Publics. In *Global Governance*, edited by J.-Y. Chung. Seoul: Sejong.
- Lemons, John. 1998. Who Should Bear the Burdens of Risk and Proof in Changing Consumption Patterns. In *The Business of Consumption*, edited by Laura Westra and Patricia H. Werhane. Rowman & Littlefield Publishers, Maryland.
- Lipschutz, Ronnie. 1996. *Global Civil Society and Global Environmental Governance*. State University of New York Press, New York.
- Lipschutz, Ronnie. 1997. From Place to Planet: Local Knowledge and Global Environmental Politics. *Global Governance* 3 (83-102).
- Lovins, Amory; Hennicke, Peter. 1999. *Volle Energie: Die globale Faktor-Vier Strategie für Klimaschutz und Atomausstieg*. Edited by P. Felixberg, *Visionen für das 21. Jahrhundert*. Campus Verlag, Frankfurt.
- Lowe, P.; Marsden, T.; Whatmore, S. 1994. *Regulating Agriculture*. London: David Fulton. Mayer, Don. 1998. Institutionalizing Overconsumption. In *The Business of Consumption*, edited by Laura Westra and Patricia H. Werhane. Rowman & Littlefield Publishers, Maryland.
- Mayer, Robert, N. 1998. Protectionism, Intellectual Property, and Consumer Protection: Was the Uruguay Round Good for Consumers? *Journal of Consumer Policy* 21:195-215.

- Mazmanian, D.; Fuchs, D.; Roseman, D. 1995. Environmental Policy Implications of the restructuring of the Electricity Industry: the Case of California: Center for Polity and Economics, The Claremont Graduate University.
- McMichael, Philip. 1997. Rethinking Globalization: the Agrarian Question Revisited. *Review of International Political Economy* 44:630-662.
- Midttun, Atle, ed. 1997. *European Electricity Systems in Transition*. Elsevier, Oxford.
- Murloch, Jonathan. 1994. Some comments on 'nature' and 'society' in the political economy of food. *Review of International Political Economy* 1 (3):571-578
- Nader, R. 1991. Remarks at the 13th World Congress of the International Organization of Consumer Unions, at Hong Kong, July 8.
- Ohmae, Kenichi. 1995. *The End of the Nation State. The Rise of Regional Economies*. Free Press, New York.
- Ploeg, J. van der. 1990. *Labor, Markets, and Agricultural Production*. Westview Press, Boulder.
- Porter, Gareth. 1999. Trade Competition and Pollution Standards: "Race to the Bottom" or "Stuck at the Bottom"? *Journal of Environment and Development* 8 (2):133-151.
- Price, Richard. 1998. Reversing the Gun Sights: Transnational Civil Society Targets Land Mines. *International Organization* 52 (3):631-644.
- Princen, Thomas. 1997. The shadig and distancing of commerce: When internalization is not enough. *Ecological Economics* 20:235-253.
- Quist, Jaco; Knot, Marjolijn; Wel, Marjan van der; Vergragt, Pholip. 1999. Strategies for Sustainable Households. Paper read at The Second International Symposium on Sustainable Household Consumption, 3.-4. June, at Groningen-Paterswolde.
- Qureshi, Asif. 1996. *The World Trade Organisation: Implementing International Trade Norms*. Manchester University Press, Manchester.
- Rees, Willian E. 1998. Reducing the Ecological Footprint of Consumption. In *The Business of Consumption*, edited by Laura Westra and Patricia H. Werhane. Rowman & Littlefield Publishers, Maryland.
- Ropke, Inge. 1994. Trade, development and sustainability - a critical assessment of the "free trade dogma". *Ecological Economics* 9:13-24.
- Ropke, Inge. 1999. The dynamics of willingness to consume. *Ecological Economics* 28:399-420.
- Schoot Uiterkamp, Anton J. M. 2000. Energy consumption: efficiency and conservation. In *Towards sustainable consumption - A European perspective*, edited by Brian Heap and Jenifer Kent. The Royal Society, London.
- Schor, Juliet. 1999. What's wrong with the Consumer Society? Competitive Spending and the "New Consumerism". In *Consuming Desires. Consumption, Culture, and the Pursuit of Happiness*, edited by R. Rosenblatt. Island Press, Washington, D.C.
- Stiles, Kendall. 1996. Negotiating Institutional Reform: The Uruguay Round, the GATT, and the WTO. *Global Governance* 2 (119-148).
- Strange, Susan. 1994. *States and Markets*. Pinter, London.
- Strange, Susan. 1996. *The Retreat of the State: Diffusion of Power in the World Economy*. Cambridge: Cambridge University Press.
- Tonner, Klaus. 2000. Consumer Protection and Environmental Protection: Contradictions and Suggested Steps Towards Integration. *Journal of Consumer Policy* 23:63-78.
- UNDP, United Nations Development Program. 1998. *Human Development Report 1998*. New York.
- UNDP, United Nations Development Program. 1999. *Human Development Report 1999*. New York.
- Uvin, Peter; Biagiotti, Isabelle. 1996. Global Governance and the 'New' Political Conditionality. *Global Governance* 2 (377-400).
- Veen-Groot, Danielle, B. van; Nijkamp, Peter. 1999. Globalisation, transport and the environment: new perspectives for ecological economics. *Ecological Economics* 31:331-346.

- Vogel, Stephen. 1996. *Freer Markets, More Rules. Regulatory Reformes in Advancing Industrial Countries*. Cornell University Press, Ithaca.
- Wapner, Paul. 1995. Politics Beyond the State. *Environmental Activism and World Civic Politics*. *World Politics* 47 (311-340).
- Ward, Neil; Almas, Reidar. 1997. Explaining change in the international agro-food system. *Review of International Political Economy* 4 (4):611.
- Warde, Alan. 1997. *Consumption, Food and Taste*. Sage, London.
- Weiss Brown, Edith. 1999. The Emerging Structure of International Environmental Law. In *The Global Environment. Institutions, Law, and Policy*, edited by Vig and Axelrod. Congressional Quaterly Press, Washington, DC.
- Zürn, Michael. 1998. *Regieren jenseits des Nationalstaates. Globalisierung und Denationalisierung als Chance*. Suhrkamp, Frankfurt a. M.

7. Bibliography

Akenji, L. (2007). "Organizational Development And Sustainability Of Non-Governmental Organizations In Central And Eastern Europe." CEU Political Science Journal(03): 319-344.

Alcott, B. (2008). "The sufficiency strategy: Would rich-world frugality lower environmental impact?" Ecological Economics 64(4): 770-786.

ANPED, EEB, et al. (2004). Ostend NGO Statement towards Sustainable Consumption and Production Patterns First EU Stakeholder Meeting on Sustainable Consumption and Production, Ostend, Belgium 24.-26.11.2004.

Archer, M. (1998). Critical Realism: Essential Readings, Routledge, London.

ASCEE team (2008). Policy Instruments to Promote Sustainable Consumption. EU FP 6 Project ASCEE - Assessing the potential of various instruments for sustainable consumption practices and greening of the market. Brussels/Heidelberg/Oslo.

Autio, M. and V. Heinonen (2004). "To consume or not to consume? - Young People's Environmentalism in the Affluent Finnish Society." Young - Nordic Journal of Youth Research 12(2): 137-153.

Autio, M. and V. Heinonen (2007). Representation of Consumerism in the Finnish Consumer Policy Programmes 1983-2007. Proceedings of the Nordic Consumer Policy Research Conference 2007: Towards a New Consumer?, Helsinki, October 3-5, 2007.

Autio, M., E. Heiskanen, et al. (2009). "Narratives of green consumers-the antihero, the environmental hero and the anarchist." Journal of Consumer Behaviour 8(1).

Autio, M., E. Heiskanen, et al. (2009). "Narratives of 'Green' Consumers - the Antihero, the Environmental Hero and the Anarchist." Journal of Consumer Behaviour 8(1): 40-53.

Autio, M. and T.-A. Wilska (2005). "Young People in Knowledge Society - Possibilities to Fulfil Ecological Goals." Progress in Industrial Ecology. An International Journal 2(3/4): 403-426.

Ayres, R. U., L. W. Ayres, et al. (1996). Industrial ecology: towards closing the materials cycle, Edward Elgar, Cheltenham.

Ayres, R. U. and U. E. Simonis (1993). Industrial metabolism: Restructuring for sustainable development, UN University Press, Tokyo/New York.

B.A.U.M. (Hrsg.) (1997). Umwelt gewinnt - Umweltcheck für den privaten haushalt (CD ROM). Hamburg.

Backstrand, K. (2006). "Democratizing global environmental governance? Stakeholder democracy after the World Summit on Sustainable Development." European Journal of International Relations 12(4): 467-498.

Barber, J. (2007). "Mapping the movement to achieve sustainable production and consumption in North America." Journal of Cleaner Production 15(6): 499-512.

Beck, U. (1986). Risikogesellschaft: Auf dem Weg in eine andere Moderne, Suhrkamp, Frankfurt.

Beddoe, R., R. Costanza, et al. (2009). "Overcoming systemic roadblocks to sustainability: The evolutionary redesign of worldviews, institutions, and technologies." Proceedings of the National Academy of Sciences 106(8): 2483.

Bentley, M. D. and B. de Leeuw (2000). Sustainable Consumption Indicators, UNEP DTIE, Paris.

Berg, A. (2006). Innovative Governance or Outsourcing Politics? Discussing European forerunner cases of sustainable consumption and production Presentation held at: The Ninth Biennial Conference of the The International Society for Ecological Economics, Ecological Sustainability and Human Well-being. New Delhi, India, December 16 - 18, 2006

- Berkhout, P. H. G., J. C. Muskens, et al. (2000). Defining the rebound effect, Elsevier. 28: 425-432.
- Bernstein, S. (2005). "Legitimacy in global environmental governance." Journal of International Law and International Relations 1(1-2): 139-166.
- Bhaskar, R. (1978). A Realist Theory of Science Harvester Press, Brighton.
- Bhaskar, R. (1979). The Possibility of Naturalism, Harvester Press, Brighton.
- Bhaskar, R. (1991). Philosophy and the Idea of Freedom, Blackwell.
- Bilharz, M. (2008). Key Points - nachhaltigen Konsums. Ein strukturpolitisch fundierter Strategieansatz für die Nachhaltigkeitskommunikation im Kontext aktivierender Verbraucherpolitik, Metropolis, Marburg.
- Bilharz, M., S. Lorek, et al. (2008). "Key points" of sustainable consumption. Presentation held at: Sustainable Consumption and Production: Framework for Action, March 10-11 2008, Brussels, Belgium.
- Binswanger, M. (2001). "Technological progress and sustainable development: what about the rebound effect?" Ecological Economics 36(1): 119-132.
- Bleischwitz, R. (2003). Governance of Sustainable Development - Towards Synergies between Corporate and Political Governance Strategies, Wuppertal Paper 132, Wuppertal.
- Bodenstein, G., H. Elbers, et al. (1998). Umweltschützer als Zielgruppe des ökologischen Innovationsmarketing: Ergebnisse einer Befragung von BUND-Mitgliedern, Gerhard Mercator Universität Gesamthochschule, Duisburg.
- Bonnano, A., L. Busch, et al., Eds. (1994). From Columbus to ConAgra - The Globalization of Agriculture and Food. Lawrence, Kansas University Press.
- Boulding, K. E. (1991). "What is evolutionary economics?" Journal of Evolutionary Economics 1(1): 9-17.
- Brundtland, G. H. (1987). Our Common Future: World Commission on Environment and Development, Oxford University Press, Oxford.
- Busch, L. and A. Juska (1997). "Beyond Political Economy: Actor Networks and the Globalization of Agriculture." Review of International Political Economy 4 (4): 688-708.
- Campbell, C. J. and J. H. Laherrère (1998). "The end of cheap oil." Scientific American 278(3): 60-5.
- Carlsson-Kanyama, A. (1997). Greenhouse Gas Emissions in the Life-Cycle of Carrots and Tomatoes. Lund, Department of Environmental and Energy Systems Studies/Lund Institute of Technology.
- Carlsson-Kanyama, A. (1999). Consumption Patterns and Climate Change: Consequences of Eating and Traveling in Sweden. Stockholm, Department of Systems Ecology, University of Stockholm.
- Carlsson, I., S. Ramphal, et al. (1995). Our global neighbourhood: The report of the commission on global governance, Oxford University Press, USA.
- Carolan, M. (2005). "Realism without Reductionism: Toward an Ecologically Embedded Sociology." Human Ecology Review 12(1): 1-20.
- Chertow, M. R. (2000). "The IPAT equation and its variants." 4(4): 13-29.
- Christensen, T. H., M. Godskesen, et al. (2007). "Greening the Danes? Experience with consumption and environment policies." Journal of Consumer Policy 30(2): 91-116.

- Church, C. and S. Lorek (2007). "Linking policy and practice in sustainable production and consumption: an assessment of the role of NGOs." International Journal of Innovation and Sustainable Development 2(2): 230-240.
- Clapp, J. (2005). "Global environmental governance for corporate responsibility and accountability." Global Environmental Politics 5(3): 23-34.
- Coffey, A. and P. Atkinson (1999). Making sense of qualitative data: Complementary research strategies. London, Sage.
- Cohen, M. (2007). Shifting up SCP on the political agenda. Framework for Action for Sustainable Consumption and Production (SCP) in the fields of Food, Mobility and Energy/Housing, Milano, Italy, November 29.-30. 2007.
- Cohen, M. J. (1997). "Risk society and ecological modernisation alternative visions for post-industrial nations." Futures 29(2): 105-119.
- Cohen, M. J. and J. Murphy (2001). Exploring Sustainable Consumption: Environmental Policy and the Social Sciences, Elsevier Science, Oxford.
- Connor, S. (2009). Warning: Oil supplies are running out fast. The Independent, 03.08.2009.
- Costanza, R. (1989). "What is Ecological Economics." Ecological Economics 1(1): 1-7.
- Dauvergne, P. (2008). The shadows of consumption, MIT Press, Cambridge/London.
- Denzin, N. K. and Y. S. Lincoln (2005). The Sage Handbook of Qualitative Research, Sage, Thousand Oaks, California.
- Diederer, A. M. (2009). Metal minerals scarcity: A call for managed austerity and the elements of hope, TNO Defence, Security and Safety.
- Doherty, D. and A. Etzioni (2003). Voluntary simplicity: responding to consumer culture, Rowman & Littlefield, Lanham, Maryland.
- Dryzek, J. S. (1997). The politics of the earth, Oxford University Press, Oxford.
- Dunn, W. N. (1994). Public policy analysis: An introduction, Prentice Hall.
- Ecological Economics (1999). "Special Section: Consumption and Environment." 28.
- EEA (2005). Household Consumption and the Environment, European Environmental Agency, Copenhagen.
- EEA (2008). Time for action - towards sustainable consumption and production in Europe -Summary of the Conference, Ljubljana, Slovenia, September 27-29 2007. EEA Technical report, European Environmental Agency. 1/2008.
- EEA and ETC/SCP (2009). Towards SCP Indicators for EEA Reporting. Eionet Workshop on SCP. Fribourg, September 24.-25.2009.
- Ehrlich, P. and J. Holdren (1971). "Impact of population growth." Science 171: 121-1217.
- Elgin, D. (1993). Voluntary simplicity: Toward a way of life that is outwardly simple, inwardly rich, (2. Edition) William Morrow & Co., New York.
- Erkman, S. (1997). "Industrial ecology: an historical view." Journal of Cleaner Production 5(1-2): 1-10.
- European Commission (2001). European Governance - A Whitepaper. COM(2001) 428 final.

- European Commission (2007). Background document to the consultation of the Action Plans on Sustainable Consumption and Production and Sustainable Industrial Policy, DG Environment, Brussels.
- European Commission (2008). Sustainable Consumption and Production and Sustainable Industrial Policy Action Plan. Brussels, COM(2008) 397/3.
- European Communities (2007). Beyond GDP - Measuring progress, true wealth, and the well-being of nations, Brussels, 19.-20.11.2007.
- Fedriago, D. and J. Hontelez (2010). "SCP: An Agenda Beyond Sustainable Consumer Procurement." Journal of Industrial Ecology 14:1 (accepted for publication).
- Fine, B. (1994). "Towards a political economy of food." Review of International Political Economy 1(3): 519-546.
- Flick, U. (2007). Triangulation: eine Einführung, VS Verlag, Wiesbaden.
- Flipo, F. and F. Schneider (2008). First International Conference on Economic De-growth for Ecological Sustainability and Social Equity, Paris, 18.-19. April 2008.
- Frank, R. (1999). Luxury Fever: Why money fails to satisfy in an era of excess, The Free Press, New York.
- Friedmann, H. (1994). "Premature Rigour: Or, Can Ben Fine Have His Contingency and Eat It, too?" Review of International Political Economy 1 (3): 553-562.
- Frondel, M., J. Horbach, et al. (2008). "What Triggers Environmental Management and Innovation?—Empirical Evidence for Germany." Ecological Economics 66(1): 153-160.
- Fuchs, D. (2005). Understanding business power in global governance, Nomos, Baden-Baden.
- Fuchs, D. and S. Lorek (2001). An Inquiry into the Impact of Globalization on the Potential for "Sustainable Consumption" in Households, Prosus, Oslo.
- Fuchs, D. and S. Lorek (2002). "Sustainable Consumption Governance in a Globalizing World." Global Environmental Politics 2:1: 19-45.
- Fuchs, D. and S. Lorek (2005). "Sustainable Consumption Governance - A History of Promises and Failures." Journal of Consumer Policy 28: 261-288.
- Galbraith, J. K. (1958). The Affluent Society, Houghton Mifflin, New York.
- Garner, R. (2000). Environmental politics: Britain, Europe and the global environment, Macmillan, New York.
- Gatersleben, B., L. Steg, et al. (2002). "Measurement and determinants of environmentally significant consumer behavior." Environment and Behavior 34(3): 335.
- Giddens, A. (1974). Positivism and sociology, Heinemann Educational Publishers, London.
- Giddens, S. A. (1990). The Consequences of Modernity, Polity, Cambridge.
- Global Compact (2000). United Nations, New York.
- Global Footprint Network. (2009). Retrieved 20.08.2009, from <http://www.footprintnetwork.org/en/index.php/GFN/>.
- Goodland, R. (1998). Environmental Sustainability: Eat Better and Kill Less. The Business of Consumption. L. Westra and P. H. Werhane, Rowman & Littlefield, Maryland.
- Goodland, R., H. Daly, et al., Eds. (1991). Environmentally Sustainable Economic Development: Building on Brundtland, UNESCO, Paris.

Goodmann, D. and R. Michael (1994). "Constructing a Political Economy of Food." Review of International Political Economy 1 (3): 547-552.

Gordon, K. (2001). "The OECD guidelines and other corporate responsibility instruments: a comparison." Organisation for Economic Cooperation and Development December 2001: 1-16.

Graus, W. and E. Worrell (2009). "Trend in efficiency and capacity of fossil power generation in the EU." Energy Policy 37(6): 2147-2160.

Greening, L. A., D. L. Greene, et al. (2000). "Energy efficiency and consumption—the rebound effect—a survey." Energy Policy 28(6-7): 389-401.

Group of 8 (2009). Declaration of the Leaders the Major Economies Forum on Energy and Climate. G8 Summit, L'Aquila Italy, 08.-10.07.2009.

Group of 20 (2009). "Leaders Statement - The Global Plan for Recovery and Reform." G20, Leaders Statement, London, 02.04.2009

Haake, J. and P. Jolivet (1997). Towards Sustainable Consumption. An Analytical Framework for a Globalized World. International Workshop "Economic Globalization and Sustainable Development: Are They Compatible, Universite de Versailles-Saint-Quentin-en-Yvelines.

Hacking, I. (1999). The social construction of what?, Harvard Univ Press, USA.

Halme, M. (2005). Sustainable Consumer Services: Business Solutions for Household Markets, Earthscan, London.

Hamilton, C. (2009). "Consumerism, self-creation and prospects for a new ecological consciousness." Journal of Cleaner Production Early view online, 16.11.2009.

Hans-Böckler-Foundation (2001). Pathways towards a sustainable future, Hans Böckler Stiftung, Düsseldorf.

Hartmann, K. (2009). Ende der Märchenstunde - Wie die Industrie die Lohas und die Lifestyle-Ökos vereinnahmt, Blessing, Munich.

Harvey, D. (2007). A brief history of neoliberalism, Oxford University Press, Oxford.

Hausman, D. M. (1992). The inexact and separate science of economics, Cambridge Univ Press, Cambridge.

Hedemann-Robinson, M. (2000). "Defending the Consumer's Right to a Clean Environment in the Face of Globalisation." Journal of Consumer Policy 23: 25-61.

Heinberg, R. (2003). The party's over, New Society Publishers, Gabriola Island, Canada.

Heinonen, V. (2009). The Future of the Globalisation of Consumption: Glocalisation, Grobalisation, Easternisation or something else? Presentation held at: Future2009. Tampere, Finland, May 28-29 2009.

Heinonen, V., J. Kortti, et al. (2003). How lifestyle products became rooted in the Finnish consumer market—domestication of jeans, chewing gum, sunglasses and cigarettes, NCRC Working papers 80/2003, National Consumer Research Centre, Helsinki.

Hilden, M., J. Lepola, et al. (2002). "Evaluation of environmental policy instruments: a case study of the Finnish pulp & paper and chemical industries." Monographs of the Boreal Environment Research(21): 9-11.

Hinterberger, F., H. Hutterer, et al., Eds. (2009). Welches Wachstum ist nachhaltig? - Ein Argumentarium, Mandelbaum Verlag, Wien.

- Hirsch, R. L. (2005). "Peaking of World Oil Production." Impacts, Mitigation, & Risk Managements. Bericht im Auftrag des US-Energieministeriums. Im Internet verfügbar unter: http://www.netl.doe.gov/publications/others/pdf/Oil_Peaking_NETL.pdf.
- Hofstetter, P. and M. Madjar (2003). "Linking change in happiness, time-use, sustainable consumption, and environmental impacts: An attempt to understand time-rebound effects." Final report to the Society for Non-Traditional Technology, Japan/BAO & Consultrix, Zürich.
- Hogwood, B. W., L. A. Gunn, et al. (1984). Policy analysis for the real world, Oxford University Press, New York.
- Holsti, O. R. (1969). Content analysis for the social sciences and humanities, Addison-Wesley Reading
- Huckle, J. (2004). Critical realism: A philosophical framework for higher education for sustainability. Higher Education and the Challenge of Sustainability: Problematics, Promise, and Practice. P. Corcoran and A. Wals, Kluwer Academic Publishers.
- Huckle, J. (2007). Mapping the Future of ESD. University of Cyprus, November 15-17.
- Hunter, J. R. (1997). Simple Things Won't Save the Earth University of Texas Press, Austin.
- Institute für Zukunftsstudien und Technologiebewertung (2009). Rohstoffe für Zukunftstechnologien [Raw Materials for Future Technologies]. Karlsruhe/Berlin.
- International Energy Agency (2008). World Energy Outlook 2008, IEA Paris.
- International Journal of Consumer Studies (2009). "Special Issue on Sustainable Consumption." 33(2).
- International Journal of Innovation and Sustainable Development (2007). "Special issue: Sustainable consumption and innovation." 2(2)
- International Journal of Sustainable Development (2001). "Special Issue on Sustainable Consumption." 4(1).
- IPCC Intergovernmental Panel on Climate Change (2007). Synthesis Report of the IPCC Fourth Assessment Report. Gland, IPCC.
- Jackson, T. (2006). The Earthscan Reader on Sustainable Consumption, Earthscan, London.
- Jackson, T. (2009). Prosperity Without Growth, Earthscan, London.
- Jalas, M. (2002). "A time use perspective on the materials intensity of consumption." Ecological Economics 41(1): 109-123.
- Journal of Cleaner Production (2007). "Sustainable Production and Consumption: Making the Connection." 15(6).
- Journal of Industrial Ecology (2005). "Sustainable consumption: special issue".
- Kaboub, F. (2001). Roy Bhaskar's Critical Realism. Working Paper. Kansas City, University of Missouri.
- Kemp, R., S. Parto, et al. (2005). "Governance for sustainable development: moving from theory to practice." International Journal of Sustainable Development 8(1): 12-30.
- Kotakorpi, E., S. Lähteenoja, et al. (2008). Household MIPS - Natural resource consumption of Finnish households and its reduction; Final report, Ministry of the Environment, Helsinki.
- Krippendorff, K. (2004). Content analysis: An introduction to its methodology, Sage, Newbury Park, California.
- Kunstler, J. H. (2006). The Long Emergency: Surviving the End of Oil, Climate Change, and Other Converging Catastrophes of the Twenty-First Century, Grove Pr.

- Lähteenoja, S., M. Lettenmeier, et al. (2007). Natural resource consumption caused by Finnish households. Proceedings of the Nordic Consumer Policy Research Conference Helsinki.
- Lawson, T. (1997). Economics and Reality, Routledge, London.
- Lawson, T. (2003). Reorienting Economics, Routledge, London.
- Layard, R. (2005). Happiness: lessons from a new science, Penguin, New York.
- Lebel, L. and S. Lorek (2008). "Enabling Sustainable Production-Consumption Systems." Annual Review of Environment and Resources 33: 241-275.
- Lebel, L. and S. Lorek, Eds. (2010). Sustainable Production and Consumption Systems, Springer, Dordrecht: forthcoming.
- Lewin, K. (1946). "Action research and minority problems." Journal of Social Issues 2(4): 34-46.
- Lorek, S. (1993). Das Konzept der Nachhaltigen Entwicklung. Fachbereich Wirtschaftswissenschaften, Fernuniversität, Hagen. Master Thesis.
- Lorek, S. (1996). "Entwicklungsprojekte für den Norden?" Bundesforum - Zeitschrift der Katholischen Landjugendbewegung 7/1996.
- Lorek, S. (2002). Die Macht der Verbraucher? Die Zukunft der Wirtschaft - Landwirtschaft und Ernährung. M. Wohlan, Bundeszentrale für politische Bildung, Bonn: 8-13.
- Lorek, S. (2003). Haushaltskonsum als Beitrag zur ökologischen Nachhaltigkeit. Vision 2020. J. S. (Hrsg.), ökom verlag, München: 223-238.
- Lorek, S. (2003). "Nachhaltiger Konsum - fehlende Federführung der CSD." Rundbrief - Forum Umwelt und Entwicklung 2/2003: 23.
- Lorek, S. (2005). Linking praxis to policy making and policy back to praxis. Sustainable Production and Consumption: Policies, Action and Communication. Kiev, September 7.-9. 2006.
- Lorek, S., S. Giljum, et al. (2008). Sustainable Consumption Policies Effectiveness Evaluation (SCOPE2) - Inventory and assessment of policy instruments (final draft). FP7 Research Project, Sustainable Europe Research Institute, Overath, Vienna.
- Lorek, S., R. Lucas (2003). Towards Sustainable Market Strategies - A Case Study on Eco-textiles and Green Power, Wuppertal Paper 130, Wuppertal.
- Lorek, S. and J. H. Spangenberg (2001). Environmentally Sustainable Household Consumption. From Aggregate Environmental Pressures to Indicators for Priority Fields of Action, Wuppertal Paper 117, Wuppertal.
- Lorek, S., J. H. Spangenberg, et al. (1999). Prioritäten, Tendenzen und Indikatoren umweltrelevanter Konsumverhaltens. Endbericht des UBA-Forschungsvorhabens 209 01 216/03. Wuppertal, Wuppertal Institute: 125.
- Lorek, S., J. H. Spangenberg, et al. (2008). Sustainable Consumption Policies Effectiveness Evaluation (SCOPE²) - Conclusion. FP7 Research Project, Sustainable Europe Research Institute, Overath, Vienna.
- Lorek, S., Spangenberg, Joachim H. (2001). "Indicators for environmentally sustainable household consumption." Int. J. Sustainable Development 4(1): 101-120.
- Lorek, S. and L. Vogelsang (2004). Integration zukunftsfähiger Lebensstile in die Nachhaltigkeitsstrategie - Umsetzungs- und Kooperationsstrategien anhand beispielhafter Akteursmatrizen, Bund für Umwelt und Naturschutz (BUND), Berlin.

- Löwe, C. (2009). Guiding the path. Finding the new path: a more strategic role for sustainable consumption and production EEB, Brussels, Wednesday 27 May 2009.
- Lowe, P., T. Marsden, et al. (1994). Regulating Agriculture, David Fulton, London.
- Lucas, H., M. Brooks, et al. (2008). "Promoting pro-environmental behaviour: existing evidence and policy implications." Environmental Science and Policy 11: 456-466.
- Luks, F. and M. Hammer (2003). Material flow analysis, discourse analysis and the rhetorics of (ecological) economics, Forschungsprojekt NEDS, Hamburg.
- Maier-Rigaud, G. (1992). Die Herausbildung der Umweltökonomie: Zwischen axiomatischem Modell und normativer Theorie. Die ökologische Herausforderung für die ökonomische Theorie. F. Beckenbach. Marburg, Metropolis: 28–43.
- Mäki, U. (2001). The economic world view: Studies in the ontology of economics, Cambridge University Press, Cambridge.
- Mäki, U. (2002). Fact and fiction in economics: models, realism and social construction, Cambridge Univ Pr.
- Maniates, M. (2002). In search of consumptive resistance: the voluntary simplicity movement. Confronting consumption. T. Princen, M. Maniates and K. Conca. Cambridge, The MIT Press: 199-235.
- Maniates, M. (2009). Editing Out Unsustainable Behavior. State of the World 2010: Transforming Cultures, From Consumerism to Sustainability. Erik Assadourian et. al., W.W. Norton and Company, New York.
- Maniates, M. (2010). Cultivating Consumer Restraint in an Ecologically Full World: The Case of "Fake Back Your Time". Sustainable Production and Consumption Systems. L. Lebel, S. Lorek and R. Daniel, Springer, Dordrecht: forthcoming.
- Manoochehri, J. (2006). Full-system resource efficiency: critique, formalism, distributive efficiency', functional surface'. Perspectives on Radical Changes to Sustainable Consumption and Production, Workshop of the Sustainable Consumption Research Exchange (SCORE!) Network, April 20.- 21 2006, Copenhagen, Denmark.
- Manzini, E. and F. Jégou (2003). Sustainable everyday: scenarios of urban life, Edizioni Ambiente, Milano.
- Marks, N., A. Simms, et al. (2006). "The (Un) happy Planet Index." London: New Economics Foundation. Downloadable from www.neweconomics.org and www.happyplanetindex.org.
- Mayer, D. (1998). Institutionalizing Overconsumption. The Business of Consumption. L. Westra and L. W. Werhane, Rowman & Littlefield, Maryland.
- McGinni, M. (1999). Rent-seeking, Redistribution, and Reform in the Governance of Global Markets. Globalization and governance. A. Prakash and J. A. Hart, Routledge, London.
- McMichael, P. (1997). "Rethinking Globalization: the Agrarian Question Revisited." Review of International Political Economy 44: 630-662.
- Michaelis, L. and S. Lorek (2004). Consumption and the Environment in Europe: Trends and Futures, Danish Environmental Protection Agency, Copenhagen.
- Moisander, J. (2001). Representation of Green Consumerism: A Constructionist Critique, PH.D Thesis. Helsinki School of Economics and Business Administration A-185, Helsinki.
- Mont, O. (2000). Product service-systems. Final Report, IIIIEE, Lund University.
- Mont, O. (2008). Sustainable Consumption Policies Effectiveness Evaluation (SCOPE2) - Inventory and assessment of business instruments (final draft). FP7 Research Project, International Institute of Industrial Ecological Economics, Lund University, Lund, Sweden.

- Mont, O. and R. Bleischwitz (2007). "Sustainable consumption and resource management in the light of life cycle thinking." European Environment 17(1): 59-76.
- Mont, O. and A. Plepys (2008). "Sustainable consumption progress: should we be proud or alarmed?" Journal of Cleaner Production 16: 531-537.
- Murphy, R. (2004). "Disaster or Sustainability: The Dance of Human Agents with Nature's Actants*." The Canadian Review of Sociology and Anthropology 41(3): 249-267.
- Narberhaus, M., S. Lorek, et al. (2009). Action Town - Roadmap (draft version). London/Wuppertal.
- New Economics Foundation (2008). 100 Month: technical note. London, <http://neftriplecrunch.wordpress.com/one-hundred-months/>.
- New Economics Foundation (2009). National Accounts of Well-being: bringing real wealth onto the balance sheet. London.
- NGO Task Force on Business and Industry. (2001). "<http://isforum.org/tobi/index.html>." Retrieved 24.03.2009, from <http://isforum.org/tobi/index.html>.
- Nissinen, A., J. Grönroos, et al. (2007). "Developing benchmarks for consumer-oriented life cycle assessment-based environmental information on products, services and consumption patterns." Journal of Cleaner Production 15(6): 538-549.
- Nissinen, A., J. Grönroos, et al. (2007). "Developing benchmarks for consumer-oriented life cycle assessment-based environmental information on products, services and consumption patterns." Journal of Cleaner Production 15(6): 538-549.
- Noorman, K. J., W. Biesiot, et al. (1999). "Changing lifestyles in transition routes towards sustainable household consumption patterns." International Journal of Sustainable Development 2(2): 231-244.
- Noorman, K. J. and T. S. Uiterkamp (1998). Green Households? Domestic Consumers, the Environment and Sustainability, Earthscan, London.
- Nooteboom, S. G. (2001). Adaptive networks. The governance for sustainable development. Ph.D Thesis. Eburon Academic Publishers, Delft.
- Norwegian Ministry for the Environment (1994). Symposium on Sustainable Consumption. Oslo, Norway.
- Norwegian Ministry for the Environment (1995). Report of the Oslo Ministerial Roundtable. Oslo, Norway.
- OECD (1998). Indicators for the Integration of Environmental Concerns into Transport Policies; Part II Measured Indicators, OECD, Paris.
- OECD (1999). Towards more sustainable household consumption patterns - Indicators to measure progress. Working Group on the State of the Environment. Paris, OECD.
- OECD (2001). Policies to Promote Sustainable Consumption: An Overview. Unclassified ENV/EPOC/WPNEP (2001) 12/FINAL. Paris OECD.
- OECD (2002). Information and consumer decision-making for sustainable consumption, OECD, Paris.
- OECD (2002a). Towards sustainable household consumption? Trends and policies in OECD countries, OECD, Paris.
- OECD (2009). Household behaviour and environmental policy, OECD Environment Directorate, June 3-4th 2009, Paris.
- Pawson, R. and N. Tilley (1997). Realistic Evaluation, Sage, London.

- Plant, M. (2001). Critical Realism: a Common Sense Philosophy for Environmental Education? Proceedings of the conference of the Association for Teacher Education in Europe, Stockholm, August 27 - September 1.
- Princen, T. (1999). "Consumption and environment: some conceptual issues." Ecological Economics 31: 347-363.
- Princen, T. (2005). The logic of sufficiency, The MIT Press, Cambridge.
- Princen, T., M. Maniates, et al., Eds. (2002). Confronting consumption, MIT Press, Cambridge.
- Quist, J., M. Knot, et al. (1999). Strategies for Sustainable Households. The Second International Symposium on Sustainable Household Consumption, Groningen-Paterswolde, June 3.-4. 1999.
- Rauschmayer, F., I. Omann, et al. (2008). What about needs? Re-conceptualising Sustainable Development. SERI Working Papers 8, Vienna.
- Raynolds, L. T. (2002). "Consumer/Producer Links in Fair Trade Coffee Networks." Sociologia Ruralis 42(4): 404-424.
- Reason, P. and H. Bradbury (2007). The SAGE handbook of action research: Participative inquiry and practice, Sage, London.
- Rehfeld, K. M., K. Rennings, et al. (2007). "Integrated product policy and environmental product innovations: An empirical analysis." Ecological Economics 61(1): 91-100.
- Reusswig, F. (2010). Lifestyle Dynamics as a Means of the Sustainability Transition. Sustainable Production and Consumption Systems. L. Lebel, S. Lorek and R. Daniel, Springer, Dordrecht: forthcoming.
- Ricci, A. (2008). New socio-economic concepts, paradigm shift and territorial dynamics in a long term perspective. SSH (Social Sciences and Humanities) Infoday. Brussels, October 3 2008.
- Rijnhout, L. and T. Schauer (2009). Socially Sustainable Economic Degrowth. Workshop in the European Parliament, Brussels, April 16, 2009, Club of Rome, Vienna.
- Robertson, R. (1995). Glocalisation: Time-Space and Homogeneity-Heterogeneity. Global Modernities. M. Featherstone, S. Lash and R. Robertson, Sage, London.
- Röpke, I. (1994). "Trade, Development and Sustainability-A Critical Assessment of the." Free Trade Dogma", Ecological Economics 9: 13-22.
- Röpke, I. (1999). "The dynamics of willingness to consume." Ecological Economics 28(3): 399-420.
- Röpke, I. (2009). "Theories of practice—New inspiration for ecological economic studies on consumption." Ecological Economics 68: 2490-2497.
- Röpke, I. and L. Reisch (2004). The Ecological Economics of Consumption, Edward Elgar, Cheltenham.
- Rosenau, J. N. (2005). Globalisation and governance. Governance and Sustainability: New Challenges for States, Companies and Civil Society. U. Petschow, J. N. Rosenau and E. U. Weizsäcker, Greenleaf, Sheffield.
- Rubik, F. and G. Scholl (2002). "Integrated Product Policy (IPP) in Europe—a development model and some impressions." Journal of Cleaner Production 10(5): 507-515.
- Sachs, W., R. Loske, et al. (1998). Greening the north: A post-industrial blueprint for ecology and equity, Zed Books, London/New York.
- Sayer, R. A. (1992). Method in social science: a realist approach, 2. Edition, Routledge, London.
- Scheer, D. and F. Rubik (2006). Governance of integrated product policy: in search of sustainable production and consumption, Greenleaf, Sheffield.

- Schneider, S. H., S. Semenov, et al. (2007). Assessing key vulnerabilities and the risk from climate change. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. M. L. Parry, O. F. Canziani, J. P. Palutikof, P. J. van der Linden and C. E. Hanson, Cambridge University Press, Cambridge, UK.
- Schor, J. (1999). What's wrong with the Consumer Society? Competitive Spending and the "New Consumerism". Consuming Desires. Consumption, Culture, and the Pursuit of Happiness. R. Rosenblatt, Island Press, Washington, D.C.
- Schor, J. B. (1998). The Overspent American: Upscaling, Downshifting, and the New Consumer, Basic Books, New York.
- Schultz, I., C. Empacher, et al. (2001). Gender Impact Assessment des Programms 'Umwelt und nachhaltige Entwicklung' der EU, Institut für sozial-ökologische Forschung (ISOE), Frankfurt.
- Scitovsky, T. (1992). The joyless economy: The psychology of human satisfaction, Oxford University Press, USA.
- SCORE Network (2008). Sustainable Consumption and Production: A Framework for Action. Brussels.
- Sen, A. K. (1999). Development as freedom, Oxford University Press, New York.
- SERI, GLOBAL 2000, et al. (2009). Overconsumption? Our use of the world's natural resources. Vienna/Brussels.
- Seyfang, G. (2009). The New Economics of Sustainable Consumption, Palgrave Macmillan, New York.
- Seyfang, G. and A. Smith (2007). "Grassroots innovations for sustainable development: towards a new research and policy agenda." Environmental Politics 16(4): 584-603.
- Silverman, D. (2005). Doing qualitative research: A practical handbook, Sage, London.
- Simms, A. (2008). Nine Meals from Anarchy - Oil dependence, climate change and the transition to resilience. Schumacher Lecture, New Economics Foundation.
- Sinclair, T. J. (1999). Synchronic global governance and the international political economy of the commonplace. Approaches to Global Governance Theory. M. Hewson and T. J. Sinclair, State University of New York Press, Albany 157-171.
- Smith, J. (2007). "The search for sustainable markets: the promise and failures of fair trade." Culture & Agriculture 29(2): 89-99.
- Spangenberg, J. H. (1993). "Participation Overkill." Ecology and Farming 5: 10-11.
- Spangenberg, J. H. (2005). Die ökonomische Nachhaltigkeit der Wirtschaft: Theorien, Kriterien und Indikatoren, Edition Sigma, Berlin.
- Spangenberg, J. H. (2010). "The growth discourse, growth policy and sustainable development: two thought experiments." Journal of Cleaner Production Early view online, 17.11.2009.
- Spangenberg, J. H. and A. Fuad-Luke (2009). "Design for Sustainability (DfS): the interface of sustainable production and consumption." Sustainable Development accepted for publication.
- Spangenberg, J. H. and S. Lorek (2002). "Environmentally sustainable household consumption: From aggregate environmental pressures to priority fields of action." Ecological Economics 43: 127-140.
- Spangenberg, J. H. and S. Lorek (2002a). Lebensstandardmessungen einschließlich nicht-marktlicher Dienstleistungen. Die Zukunft von Dienstleistungen. G. Bosch, Henniecke, P., Hilbert, J., Kristof, K., Scherhorn, G., Campus, Frankfurt: 455-481.

- Spangenberg, J. H. and S. Lorek (2003). Lebensqualität, Konsum und Umwelt: intelligente Lösungen statt unnötiger Gegensätze, Friedrich-Ebert-Stiftung, Bonn.
- Statistisches Bundesamt (1996). Umweltökonomische Trends bei privaten Haushalten. Wiesbaden.
- Stiglitz, J., A. Sen, et al. (2009). Report by the Commission on the Measurement of Economic Performance and Social Progress. Paris.
- Stoker, G. (1998). "Governance as theory: five propositions." International Social Science Journal 50(155): 17-28.
- Szlezak, J. (2007). National Sustainable Consumption and Production (SCP) Strategies in the EU. Background paper. Time for Action - towards Sustainable Consumption and Production in Europe. Ljubljana, Slovenia, September 27-29 2007.
- Thøgersen, J. (1999). "Spillover processes in the development of a sustainable consumption pattern." Journal of Economic Psychology 20(1): 53-81.
- Thøgersen, J. and F. Ölander (2003). "Spillover of environment-friendly consumer behaviour." Journal of Environmental Psychology 23(3): 225-236.
- Timonen, P. (2002). Pyykillä - arkinen järkeily ja ympäristövastuullisuus valinnoissa (Doing the Laundry - Mundane Reasoning and Environmentally Responsible Choices). Consumer Economics, PH.D Thesis, Helsinki University.
- Tonner, K. (2000). "Consumer Protection and Environmental Protection: Contradictions and Suggested Steps Towards Integration." Journal of Consumer Policy 23: 63-78.
- Trainer, T. (2007). Renewable energy cannot sustain a consumer society, Springer, Dordrecht.
- Trentmann, F. (2006). The Modern Genealogy of the Consumer: Meanings, Identities and Political Synapses. Consuming Cultures, Global Perspectives. J. Brewer and F. Trentmann, Berg, Oxford/New York.
- Tukker, A., Ed. (2008). System Innovation for Sustainability 1, Greenleaf, Sheffield.
- Tukker, A., G. Huppes, et al. (2005). Environmental impact of products (EIPRO): Analysis of the life cycle environmental impacts related to the total final consumption of the EU25. European Science and Technology Observatory and Institute for Prospective Technological studies, Brussels.
- Tukker, A. and U. Tischner (2006). "Product-services as a research field: past, present and future. Reflections from a decade of research." Journal of Cleaner Production 14(17): 1552-1556.
- UK Sustainable Consumption Roundtable (2006). I will if you will.
- UN Commission on Sustainable Development (1995). International Work Programme on Sustainable Consumption and Production Patterns United Nations, New York.
- UN DESA (1998). Measuring Changes in Consumption and Production Patterns - A Set of Indicators, United Nations, New York.
- UN DESA and UNEP (2007). 3rd International Expert Meeting on a 10-Year Framework of Programmes on Sustainable Consumption and Production (Marrakech Process) Meeting Report and Co-chairs Summary. Stockholm.
- UNEP (2001). Consumption opportunities. Strategies for change. A report for decisionmakers, United Nations Environmental Programme, Paris.
- UNEP (2002). A global status report, United Nations Environmental Programme, Paris.
- UNEP (2009). Guidelines for Social Life Cycle Assessment of Products. Paris.

- UNEP/CDG (2000). Sustainable consumption and production: Creating opportunities in a changing world. Report of the 4th International Business Forum, Carl Duisberg Gesellschaft, Berlin.
- United Nations (1992). Agenda 21; Results of the World Conference on Environment and Development. New York., United Nations. UN Doc.A/CONF.151/4.
- United Nations (2002). "Johannesburg Plan of Implementation." World Summit on Sustainable Development, Johannesburg (http://www.johannesburgsummit.org/html/documents/summit_docs/2009_keyoutcomes_commitments.doc[Links].
- van den Burg, S. (2007). The political modernization of sustainable consumption policies. Nordic Consumer Policy Research Conference Helsinki, October 3.-5. 2007.
- van Griethuysen, P. (2009). "Why are we growth-addicted? The hard way towards degrowth in the involutory western development path." Journal of Cleaner Production Early view online, 16.11.2009.
- Van Kersbergen, K. and F. Van Waarden (2004). Governance as a bridge between disciplines: cross-disciplinary inspiration regarding shifts in governance and problems of governability, accountability and legitimacy. 43: 143-171.
- Veblen, T. (1899). The Theory of the Leisure Class - An Economic Study of Institutions, Macmillan Company, New York.
- Vedung, E. (1997). Public Policy and Program Evaluation, Transaction Publishers.
- Vittersø, G., P. Strandbakken, et al. (1999). Sustainable consumption and the consumer: Introducing the green household budget. Second International Symposium on Sustainable Household Consumption, Paterswolde, NL.
- von Geibler, J., M. Kuhndt, et al. (2004). Sustainable Consumption: policy strategies, consumers' behaviour and market development. Eco-Efficiency, Regulation and Sustainable Business. Towards a Governance Structure for Sustainable Development. R. Bleischwitz and P. Hennicke. Cheltenham, UK, Edward Elgar.
- Ward, N. and R. Almas (1997). "Explaining change in the international agro-food system." Review of International Political Economy 4 (4): 611.
- Warde, A. (1997). Consumption, Food and Taste, Sage, London.
- Watson, D., R. Carlsen, et al. (2008). An SCP Indicator Set for EEA reporting - Draft Working Paper, European Topic Centre on Resource and Waste Management, Copenhagen.
- Webb, E. J. (1978). Unconventionality, triangulation, and inference. Sociological Methods: A Sourcebook, Transaction, New Brunswick/New Jersey.
- Weizsäcker, E. U., A. B. Lovins, et al. (1998). Factor Four: Doubling Wealth, Halving Resource Use-A Report to the Club of Rome, Earthscan, London.
- Westra, L. and P. H. Werhane (1998). The business of consumption: Environmental ethics and the global economy, Rowman & Littlefield, Lanham, Maryland.
- Wichterich, C. (1998). Die globalisierte Frau, Rowohlt, Reinbek.
- Wiedmann, T. and J. Minx (2008). A definition of 'carbon footprint'. Ecological Economics Research Trends. C. Pertsova. New York, Nova Science Publishers. 2: 55-65.
- Wilkin, P. (1997). New Myth for the South. Globalization and the South. C. Thomas and W. Peter, Macmillan, London.
- Worldbank (1992). World Development Report, Washington, D.C.

Worldwatch Institute (2004). State of the world 2004: Special Focus: The Consumer Society, WW Norton & Company, New York.

WWF-UK (2008). Weathercocks & Signposts - The environment movement at a crossroads, WWF, Surrey, UK.

WWF-UK (2009). Simple and painless? The limitations of spillover in environmental campaigning, WWF, Surrey, UK.

Young, B. (1998). Globalisierung und Genderregime. Regina Stötzel (Hg.): Ungleichheit als Projekt: Globalisierung–Standort–Neoliberalismus, BdWi Verlag, Marburg.

Zenóbio Gunneng, A. (2006). Discourses and Power in Sustainable Consumption and Production debates. Centre for Development and the Environment. Oslo, University of Oslo. Master of Philosophy in Culture, Environment and Sustainability.