Sustainable Consumption – Towards Action and Impact
Conference Report
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1. Introduction

In modern societies, private consumption is a multifaceted and ambivalent phenomenon: it occurs as a necessary part of prevailing social practices and it is an economic driving force; yet at the same time, its consequences are in conflict with important social and environmental sustainability goals. Finding paths towards “sustainable consumption” has therefore become a major political issue. However, despite considerable knowledge about the unsustainability of current consumption patterns and numerous initiatives in the field of consumer information, a general trend towards sustainable consumption has yet to develop.

The international scientific conference “Sustainable Consumption – Towards Action and Impact”, held from 6-8 November 2011 in Hamburg, Germany, aimed at bringing together the emerging multidisciplinary community dealing with questions around sustainable consumption. The conference was also a major event of the inter- and transdisciplinary research programme “From Knowledge to Action – New Paths towards Sustainable Consumption”. The programme, funded by the German Federal Ministry of Education and Research (BMBF), has been part of the Ministry’s “Social-ecological Research” (SÖF) initiative since 2008.

This report aims at making accessible some of the discussions of the conference. It is not so much a summary as it is an attempt to build overarching arguments to which the single conference presentations can be regarded as contributions. Two broader storylines have been chosen to organize the contributions to the conference (and to the pre-conference) within a cohesive framework:

(1) For a policy aiming at sustainability, is steering consumer behaviour a promising route (or should we rather focus on regulation of production)?

(2) How can research on sustainable consumption inform recommendations for political action?

To facilitate navigation through the various contributions, the report uses a technique called argument mapping, which was developed as a tool for computer-supported collaborative research and argumentation in the context of Debattenprofis.de, a platform for scientific policy advice and technology assessment.

Argument maps

Argument maps are, in a way, similar to mind maps: They are visual representations of concepts. Visual representations of this kind offer one basic advantage over the display in form of a text: The tree- or node-like structure allows readers to navigate more easily between the different layers of information and to focus on the points that interest them. This is the feature that mind maps and argument maps have in common. In all other aspects, they are different.

Argument maps are not just an arrangement of topics and sub-topics. Instead, they represent a chain of reasoning – an idealized one. Thus, argument maps are not a representation of a discussion in the way that it actually took place. To build a map, the original chronological order often has to be destroyed. Complex interventions have to be cut into several small pieces. Also, elements have to be added that were never a part of the original discussion, such as problems that were not stated as such (although solutions were offered). In choosing a certain claim as the starting point for an argumentation, argument maps seem to be taking a position. But this is
not actually the case. Argument maps just present the arguments that are discussed, without deciding which claims are right or wrong in the end.

An argument map can give structure to discussions in a better way than a simple mind map does. This is because the underlying chain of reasoning is a structure that also guides us in our actual debates, decision-making-processes and research projects. The purpose of an argument map is not to abandon familiar practices and to replace them with some sort of calculus but to support the ongoing deliberation. How this works becomes clear when comparing argument maps to another, well-established practice of structuring information – the use of keywords or “tags”. Keywords and tags serve as shorthand descriptions for journal articles and working papers, presentations, posters and books. Furthermore, they establish relationships between disparate items. Items that share the same keyword or tag are similar. They belong together. A set of items among which the same keywords were repeatedly used can be represented as a diagram that has the form of a network. Argument mapping proceeds in quite a similar fashion; it also establishes a network of items of information. The difference is that the definitions of relationships within the network use a richer language. Bits of information do not just “belong together” but react upon one another. They support and defeat one another. This is much closer to the way that research is conducted. Research is not just a matter of piling up similar items but proceeds by establishing something like a research argument. Argument mapping helps to build up and to follow research arguments that lead through a whole corpus of publications, presentations and comments.

Although there are several major research projects working on the use of argument maps in the context of policy advice, this report is, to our knowledge, the first time that argument maps have been used in the context of the documentation of a scientific conference.

The main part of this report leads the reader through the argument maps that were worked out based on notes taken during the conference (and the pre-conference) and also with the help of the presentations and posters that were part of the conference. Comments that we received as a reaction to the first version of this report (circulated among conference participants in January 2012) are, as far as possible, integrated into the maps presented in this updated version of the report.
2. The Maps
We constructed two topics maps according to the two broader storylines mentioned above. Each topic map is divided into three submaps: “Steering 1-3” and “Policy 1-3”. The complete maps are contained in the appendix.

You can either view the maps using the zoom function on the computer screen or print them on several pages (see appendix). Alternatively, you can follow the guided tour on the following pages.

In addition to these topic maps the five keynote talks were covered separately with a map each (again, the complete maps are to be found in the appendix).
Inge Røpke: "Shopping will not do!" We must manage to de-couple growth and resource-consumption: more social recognition for informal work; less consumerist lifestyle.

Arnold Tukker: We should aim at achieving economic growth without a growing demand for natural resources.

Alan Warde: Sustainability-policy focussed on steering the consumer via education and information is unlikely to succeed.

Kate Soper: We should aim for a less consumerist lifestyle - and a new idea of the good life & human flourishing.

Elizabeth Shove: Addressing sustainability-policy on the level of influencing individual purchasing decisions is not likely to be effective [Show 2011].
Argument maps use a simple set of icons to establish relations between statements and questions:

- A discussion starts with either a question 🎓 or a claim or proposal 📚 (the same icon is used for an answer, featuring as a claim/proposal for the subsequent discussion)
- Claims and proposals are supported by or objected to by pros 🎉 and cons ⚠️ (relating to the immediately preceding element)
- Furthermore, there are comments 🎯 and links to websites 🌐, documents 📙, to other nodes on the map ➡️ and to other maps 🌏
- 🎯 signifies the basis of the argument – the kind of evidence that can be used to refute or support a claim
- Sometimes, two or more claims are connected to a thesis with an “&”. In this case, all the connected claims have to be true in order to support the thesis.
- 🎓 or 🎯 signifies an open question, addressing the readers of the map
- The abbreviation (AV) in square brackets refers to the conference abstract volume and indicates the page number in the abstract volume where the title and the names of the authors of a presentation can be found.  

Chapter 3-5 lead through the maps. Each section starts with a summary of the basic structure of a map. What follows is a presentation of the single branches and elements of the map. An “arial view” is used to support orientation within the maps. Branches and elements that are shown in detail are marked by a grey frame in the areal view. Also, it might be helpful to take a look at the complete maps (see appendix) in order to get a better understanding of how specific parts of the discussion relate to the overall picture.

3. Topic Map: Steering consumer behaviour
For a policy aiming at sustainability, is steering consumer behaviour a promising route? This question, which aims at the core of one of the conference’s main topics, is also closely connected to a contemporary political debate: Will we – consumers, mankind – have to change our behaviour in order to save the planet from climate change, loss of biodiversity and the pollution of the environment with nitrogen and toxic waste, just to mention a few of those areas where the long-term stability of the earth’s ecosystem and human well-being are in danger? Will we be able to change our behaviour? Or is it instead more environmental-friendly production – a “techno fix” – and a socially more just market order that will help us to not overturn the ecosystem and to reach a more equal distribution of welfare?

The position that calls for a radical change in behaviour is represented by business writer Tim Jackson, whose book Prosperity without Growth (2009) was cited frequently by speakers at the conference “Sustainable Consumption 2011”. The other position, which seeks to address global environmental problems not by changing consumer behaviour but with the help of greener production and by technological innovation in general, has been prominently articulated recently by British environmentalist Mark Lynas, author of The God Species (2011).  

The debate on “steering consumer behaviour” was reconstructed on the map on the basis of material presented or discussed at the conference.
Especially of concern are three questions:

a) What is the maximum that can be gained by an approach focussed on consumption instead of regulation on the side of production? How big is the contribution of consumption behaviour to overall unsustainable practices of our societies?

b) In order to arrive at a more sustainable consumption behaviour, change will be necessary. What extent of change in consumer behaviour will be possible? What do we know about the circumstances of behavioural change: What methods and strategies can trigger changes? What do we know about their efficiency?

c) Looking at those areas where change can reasonably be expected to happen: What are the net effects of possible changes in consumer behaviour? Which part of the maximum that is possible can actually be realized?

The topic map “Steering” is structured accordingly. The central thesis “Steering consumer behaviour is a promising route for sustainability policy” is jointly supported by three further claims, which are elaborated in three maps (“Steering 1, 2 and 3”):
All of these three claims have to be supported in order to prove the central hypothesis.

One example to illustrate the general idea behind the structuring scheme:

*Emissions* are one key factor regarding sustainability. In Germany, CO₂ emissions per capita/year are currently 7,5 tons/year. To the amount that these emissions are either directly caused by private households or could be influenced by consumer behaviour, this is a piece of evidence supporting the claim that consumer behaviour does matter.

A certain percentage of these 7,5 tons/year can be traced to *electricity* consumption in private households. With the help of smart metering and awareness campaigns, energy use in private households can be reduced. Studies show that in private households, savings of electricity up to 3,7 % (Goelz et al., AV 154) and more can be achieved. This shows that consumers are indeed able to change their behaviour significantly.

Do those changes in consumer behaviour that can be achieved have a significant impact on overall sustainability? 3,7 % less energy-consumption in private households would amount to 1,1 % of all electricity consumption in Germany. Whether or not this reduction has significant effects on emissions, depends upon questions as these:

- How much reduction of energy-consumption will be necessary in the long term (Kyoto)?
- How efficient is the production of electricity?
- Is overall consumption really reduced by 1,1 %? Or will the savings with the help of smart meters be outweighed by higher energy use altogether - e.g., because households use more electrical devices?

### 3.1. “Steering 1”: Consumer behaviour has a major impact

The first “leg” of the argument, “Consumer behaviour has a major impact” (map “Steering 1”), is supported by further claims and some evidence. Also, there is a question asking for more details, and an observation (the red ‘under construction’) indicating the need for further research that arises when looking at the information presented in the map. (Note: We did not check whether or not the research tasks indicated by the red ‘under construction’ signs have been dealt with elsewhere in the literature!)

Several sub-arguments follow. Some of them support and some refute the first line of evidence that was brought into consideration:
Consumer behaviour has a major impact on overall sustainability

What is the maximum that can be gained by an approach focused on consumption instead of regulation on the side of production? How big is the contribution of consumption behaviour to overall unsustainable practices of our societies?

Only a change in consumption behaviour will bring about the necessary effects. (This is what "major impact" means.) And: Only a change in consumption behaviour will make it possible to stay within the (politically agreed-upon) thresholds for emissions and other environmental harms (this is what "impact on overall sustainability" stands for).

Here is how the chain of reasoning following the box on the left continues:
The map presents a brief outline of the debate between proponents of a “techno fix” or a “Green New Deal” and other discussants that think a change in lifestyle is necessary. The outcome of the debate is of high relevance for the conference topic: If a “techno fix” will not be effective enough, then a change in consumption behaviour on a global scale is the only solution in order to achieve sustainability. Nonetheless, this debate was only briefly touched upon during the conference (see, e.g., the keynote talk by Inge Røpke, 5.5).
A further argument supporting the claim that “consumption matters” points to the rising levels of consumption levels in the recent past.

The next set of boxes contains “various evidence” supporting the claim that consumption does have an impact.

Here, evidence is collected that was mentioned throughout the conference and that could serve to support the claim that the area of consumption is of major relevance in terms of sustainability. Note that within the evidence presented, there is conceptual ambiguity – the fact that heating (and thus: consumption) is responsible for 40% of all energy use and for 36% of all CO₂ emissions does not imply that the consumer should be the target of political interventions. To support this conclusion, further evidence is needed (which actually might be found in some of presentations at the conference). Here are the details:

Various evidence

1. Data on energy consumption: Heating is responsible for 40% of all energy use and for 36% of CO2 emissions (Quote: Weiß).

2. Statistical data: 15% of overall emissions stem from public buildings (AV 23).


4. Literature survey (AV 17 and Tukker, slides 12, 17).

5. Assessment of ecological footprint: Food consumption in households as a final demand category in Hungary is up to 40% of total eco-footprint (AV 106). 50% to 70% of air emissions is caused by final demand of industrial goods (Data for Spain and Italy, see AV 112).

6. Economic data: 58% of GDP is private consumption in Germany. Austria: 53% (AV 108).

7. "We note that service sectors, despite their very low level of direct emissions, require relevant amounts of industrial goods. This aspect raises concerns about the environmental effects of the shift of many European countries toward a service-based economy." (AV 112).

In the case of energy, changes on the production side have much stronger effects than consumption.

- Research results from the RONA project: "Change-Energie.de" (dealing with energy consumption at the workplace), "Intellikube" (smart metering), "ENEF-Haus" and "Secoll@home" provide empirical data concerning how much energy can be saved by consumers themselves (AV 23; thematic symposium 151 pp.).

Example: Sweden has the same amount of energy consumption as other European countries but a much smaller footprint.
Two critical questions remain concerning the interpretation of the different sorts of evidence. First: What consumption areas are of key relevance for sustainability?

Some hints concerning this question have been mentioned throughout the conference:

Detail: Food waste is responsible for a great deal of CO2-emissions [AV 110]

The above claim is not an argument for trying to change behaviour at the level of individual consumers: The most food waste is in food production and trade. Private households matter less [AV 110]

Detail: A vegetarian diet respectively reduces ecological footprint

Calculations: In Hungary, the results are a 12 % reduction for vegetarian diet and 36 % for a vegan diet [AV 106]

How are these figures to be interpreted regarding (a) chances that consumers will become vegetarians (and costs for convincing them) (b) sustainability gains that can be achieved in other fields (e.g., more efficient energy production and use)
The second critical questions concerns the way “sustainability” is conceptualized. Different conceptualizations will go along with different ways of measuring sustainability – and thus different ways of assessing the impact of consumption on overall sustainability. Here are the details:

3.2. “Steering 2”: Significant changes in consumer behaviour can be achieved

We turn now to the second “leg” of the argument (map “Steering 2”). Having checked the evidence for the impact of consumer behaviour (in contrast to effects by regulations on the production level), the discussion turns to the methods and strategies by which a change in consumer behaviour could be achieved. The map presents just some of the possible approaches. (Note: These approaches are presented in the form of claims so as to preserve the structure of the argument map.)
We start with the large group of elements on the left, beneath the claim “Education and information will affect consumer behaviour through awareness-building”.

This group breaks down into several sub-groups. First, there is a list of successful projects, many of which have been conducted within the SÖF focal topic “From Knowledge to Action – Towards Action and Impact”. Kate Soper’s keynote talk (see 5.2), which addressed a topic that ran like a background theme through the whole conference, also belongs in this section.

These “successful examples” (supporting the claim that changes in consumption behavior are possible) are listed in the map:

Next, we turn to the issue of whether or not consumers lack the relevant knowledge to make sustainable purchasing and usage decisions. One central argument speak against the claim that consumers generally lack the relevant knowledge:

Consumers lack the relevant knowledge to make sustainable purchasing and usage decisions

Labels or certificates can help consumers to make better decisions. Labels are well known and have a significant impact on consumer behaviour

There is no established standard of best practice in labelling. This diminishes the relevance of labels

Consumer surveys: Up to 50% of consumers recognize at least some labels such as the blue angel or bio (...) [AV 83]

Open question: Is it to be regarded as success or failure if consumers buy labelled product without knowing exactly what a label signifies?

How should labels be governed? There is no established standard of best practice in labelling. This diminishes the relevance of labels

The government can step in to supervise and guide the process of labelling

Results from report commissioned by the German Federal Ministry of Food, Agriculture & Consumer Protection (BMLV)

Option: Introduction of a new sustainability-label

Option: Updating of existing (publicly controlled) labels

Option: Introduction of a second-order label by government agencies

Option: informal support for labels on an individual basis. (Solution favored by authors of the report). This option has been favored by the authors of the study. [AV 80; slides 13-14]
Another point, also addressing the question of knowledge and information, is listed separately.

It is another observation objecting against the claim that education and information will affect consumer behaviour:

A majority of consumers is not even convinced that climate change is either really taking place or posing a serious challenge. With this background, it does hardly seem possible that a change in awareness for sustainable consumption will take place on a larger scale.

Disregarding this general observation, there are well-known examples which show that relying on education and information might, in some cases, still work better than mandatory solutions.

In some areas, solutions that rely on individual choice and responsibility are more effective than “one size fits all” solutions that are introduced on a mandatory base.

Example: Field studies with smart metering

Within a test group, 40 % of consumers believed that they could save EUR 5-10/month on electricity with the help of smart metering. At the same time, 90 % of the same group were not willing to spend even EUR 1/month for the installation of a smart meter device (AV 153). Another study (AV 157) came to the conclusion, that (a) actually only some households could gain benefits using smart metering and (b) on an overall basis, most savings could be realized when the usage of smart meters was voluntary, not mandatory. Also the costs (EUR/kilowatt hour saved) were less in the scenario based on voluntary use of smart metering.
Some final questions remain within the group of arguments on education and information. The first one is: Can the idea that the individual consumer is morally responsible for acting sustainable be justified on ethical grounds?

The last element of the section on education and information: some ideas concerning the improvement of education for sustainability, especially within educational organizations.

Can the idea that the individual consumer is morally responsible for acting sustainable be justified on ethical grounds?

Individuals bear responsibility for the effects of their actions on a global scale. Therefore, in the industrialized countries, pet-ownership and large family-size are contestable forms of behaviours (AV 16; see also AV 169)

Ethical theory


Which topics should be put on the agenda concerning education & awareness? How can the topic be promoted within educational organizations?

Strengthen motivation of educators to engage in the topic of sustainable consumption

Guide educators how to effectively reach out to their audience

Offer emotional appealing toolkits for the advertising sustainable consumption (to be used in the field of cultural education)

Collaboratively working on local projects helps to raise awareness

"Young people's adoption of sustainable consumption is very important to promote sustainable behavior. But, currently the acceptance of sustainable consumption by younger generation is arguable, due to a mismatching between their lifestyle and stereotype of sustainable consumption. "

(Participant’s opinion)
After having discussed the role of education and information, we now turn to the next instrument to achieve changes in consumption behaviour: economic incentives.

**Economic incentives** (taxes/subsidies) will effect behavioural changes

- Detail: High consumption taxes would be needed to have significant effects on animal product demand (AV 100)

- House-owners could be motivated to invest in refurbishment measures to improve energy efficiency with subsidy-programs (AV 84)

- Example: After a tax on plastic bags was introduced in Germany, stores started to charge for the bags - and customers got used to bringing their own bags. In the UK, where the government decided not to introduce a new tax, plastic bags are still widely in use

**Economic modell (AV 100)** What can be concluded from the studies on the eco-impact of different diets: Is eating less meat more more important than ‘green’ grocery shopping?

The next topic is the approach of regulation (for instance, banning of products):
Finally, the map addresses the question how research could contribute to a better understanding of change in consumer preferences:

One central argument speak against the claim that consumers generally lack the relevant knowledge:
3.3. "Steering 3": Possible changes in consumer behaviour have significant impacts

We now turn to the third "leg" of the general argument. This part concerns the effects that, given the actual results of interventions on the level of individual consumers, can be legitimately expected in the overall outcome.

There are several arguments supporting the view that significant changes are actually possible. Some of them are more general considerations (such as the avoidance of "brown heavens"), which can hardly be supported by follow-up arguments. Others will have to be worked out in detail (such as the claim that the shift in demand that could be achieved will lead to a significant change in production patterns).

On the other hand, there are reasons to be sceptical about the impact of possible changes in consumer behaviour. Again, the objections are rather general in nature rather than knock-down arguments. Thus, the overall question should be to what extent, or in what areas, consumer behaviour makes a real difference – and not whether it makes a difference or not. This is at least how we suggest that this part of the map should be read.

Let's take a further look at the deeper levels of the arguments supporting the view that real impact is possible.
On the other hand, there is a range of arguments against the claim that change in behaviour actually can be achieved:

- The scope of change that is really possible seems to be rather narrow. At least the idea of influencing individual purchasing decisions is not likely to be effective (AV 16).

  - Purchasing is only a small fraction of overall consumption behaviour. Practices of heating, cooling, and bathroom/showering are much more important in terms of (unsustainable) energy consumption than the acquisition of products is.

  - What could be an alternative approach for research on sustainable consumption?

- Intentional sustainable behaviour implies a certain knowledge. Consumers, though, often lack the knowledge to make purchasing decisions that are optimal in terms of sustainability.

  - Labels help consumers to make sustainable purchasing decisions.

  - The great majority of customers do not take labelling information into account when making a purchasing decision.

- Rebound effects have a stronger negative impact than any gains due to a greener lifestyle & purchasing habits.

  - Example: People buy more energy-efficient refrigerators or cars but use them more extensively. The net result is no reduction in energy consumption.

  - Also in other areas, rebound effects are common. Look at the yo-yo-effect observed in the field of nutritional diets.

  - More systematic evidence is needed here! (see Michael Bilharz’s work on “keypoints”)

- Background: Knowledge alone will not solve the problem. Often, what should count as sustainable in the long run is a political question.

  - Example: For many products we do not yet have lifecycle assessments.

  - Often, the goals of reducing, ecological footprint and supporting the local farmers (which might be regarded as in some sense sustainable by itself) are in conflict with each other.
The question “What could be an alternative approach for research...” (above) leads to the proposal of an alternative research framework addressing the social practices that necessitate certain patterns of consumption: Practice Theory.

Proposal of an alternative research-framework (=Practice Theory) addressing the social practices that necessitate certain patterns of consumption

What research questions could be studied within the framework of Practice-Theory?

- Why did people abandon the habit of bicycling to work, as they did in the 1940s?
- How did the idea become established that a meal is complete only when it includes either meat or fish?
- How does the enactment of one and the same practice differ in its outcomes? E.g., an English lawn has different ecological impacts in Great Britain than it has in Spain.
- How do unsustainable social practices co-evolve, and how do they support one another?
- How do social practices spread?
- Why did we acquire habit of taking a shower every morning?
- How should approaches from Practice Theory be operationalized? Click URL below to answer.

See the analysis of decisionmaking in the family household by Angela Häußler (University of Gießen)

Detail: It is also important to provide a quantitative understanding of how various structural factors (e.g., income, education, urban form, infrastructure and social structures) affect consumption. These determinants should not be seen as the “true” drivers of behavior, but as factors that enable or prohibit people from engaging in various practices that then result in environmental pressure.
Finally, there are two more open question concerning the possibility of achieving change in consumption behaviour in general.

3.4. Summary of “Steering 1-3”

There is evidence that certain effects can only be achieved if consumers change their behaviour. A quantification of the amount does not seem to be available so far. Nevertheless, the impact of personal consumption behaviour supported by the various kinds of evidence makes the assumption highly questionable that a “techno fix” alone could do the job of reaching, for instance, politically agreed-upon emission goals.

Several examples show how and to what extent consumers can actually be motivated to change their behaviour. Some of the areas in which change has been shown to be possible are also the areas of greatest priority (like heating).

Nevertheless, there is one important drawback. When it comes to the question as to what extent a change in behaviour can lead to a significant reduction of a single person’s total ecological footprint, the answer does not yet seem to be clear. This echoes the well-known observation that more developed economies tend to become less resource-intensive per unit of output, whereas the total amount of units or goods consumed rises. Further research could help to shed more light on the exact nature of this trade-off.

What is clear, though, is that in some cases behavioural patterns can be successfully changed, whereas in others there is strong resistance. A close reading of the literature produced by the conference participants could help us to arrive at a better understanding of the factors in successful interventions. In the end, some areas might persist (like air travel or meat consumption) where only a policy mix involving rather heavy regulation instruments will bring about the necessary effects.
One result of the research programme “From Knowledge to Action – New Paths towards Sustainable Consumption” could finally be to provide the necessary data for the identification of consumption areas that call for interventions on the consumption level or that require heavy taxation and industry regulation. Some steps in this direction can already be found within the work of the synthesis groups (also presented at the conference).  

4. Topic Map: Scientific policy advice

The second “storyline” that we used to sum up the results of the conference is this one: How can research on sustainable consumption inform recommendations for political action?

The main issues discussed are the following:

Here, the three branches of the map are just three sub-questions relating to the more general main question. They do not, as in the case of the map on “steering consumption”, form the premises of an argument.

4.1. “Policy 1”: What are the deficits of current policies?

The first map starts with the deficits of current policies. Note: Those deficits were not stated as such by the conference participants. But the intervention methods proposed or tested by the researchers point to the assumption that there is a need for these interventions, or, in other words, that there is a deficit. To reconstruct the different interventions as answers to a larger argument, the map shows these deficits as explicit claims (which can, and should, be questioned).
Let’s take a close look at the first issue: Again, we have inserted a claim (“... policy has ... not done a good job at the prioritization”) in order to attach further questions (“How can research help to get priorities right?).

Priorities could be established either by focussing on the areas of consumption where most resources (e.g. energy) are used or on those areas where interventions have been proven to be successful and efficient, as shown by the research projects from the BMBF programme “From Knowledge to Action – New Paths towards Sustainable Consumption”.

Up to now, sustainability policy has so far not done a good job at the prioritisation of actions.

How can research help to get the priorities right?

Explore the most important determinants of energy use and greenhouse gas emissions in private consumption.

Focus on specific consumption areas and use interventions that have been shown to be successful.

Results show highly significant national differences regarding sustainable consumption (AV 41).

Time-series; cross-sectional analysis (AV 39; 41).

Literature-survey (AV 17, slide Tukker 24).

(Links to the projects’ URLs are provided for in the complete map in the appendix.)
Another point of concern is: Current policies do not pay enough regard to specific groups and milieus. How can research help to target specific milieus and groups?

The map discusses the proposal to identify critical regions, households, social groups or milieus. The proposal is supported by further claims:

- Analysis of behaviour of specific social groups can lead to solutions to make the activities and consumption of this group more sustainable [Kronenberg, AV 111]

- Solutions are limited to one specific group. Do benefits justify time and expense involved?

- The personal carbon footprint varies greatly from one milieu to another for some fields of consumption, particularly transportation (AV 41; 101)

- High income and non-urban residence are the most important determinants of energy use and GHG emissions (AV 39)

- Results show strong variation between men and women in e.g. food-consumption (meat) (AV 105)

- There are significant regional differences in food consumption and related CO2 and ammonia emissions. (AV 105)
Although there is considerable evidence that consumption patterns vary significantly between social groups, it is not clear if possible benefits from targeting specific groups will justify effort and expenses. Here, additional information about the cost dimension of campaigning and cost/benefit calculations in that field would be needed.

A further shortcoming of current policy might be that policy’s view of consumer behaviour is too narrow. This view is supported by the (already mentioned) call for intervention strategies tailored for specific groups and milieus and by the observation that some forms of consumption cannot be subsumed under categories of purchasing. This criticism is mainly concerned with the conceptual framework that is used in the analysis. Shove (see 5.3) has suggested looking, for instance, at “practices of getting wet” instead of merely measuring energy and water consumption connected to sanitation. Whether or not such approaches to conceptualization can be of political use still has to be shown.
The last point on “Policy 1” concerns the idea that current policies are based on too limited knowledge about the effects of possible interventions. Thus, the question is: How can research help to better forecast the effects of possible interventions?

Some possible answers are discussed:
The first of the proposals mentioned could be realized rather easily: Cross-national comparisons of consumption patterns should lead to the identification of those areas where culture and other soft factors have a large impact on consumption behaviour – areas, where change is possible at least. Also, looking at time series data, cross-national comparisons could indicate where changes in culture have been successful.

The second proposal represents more of a research proposal: To our knowledge, simulations concerning the topic of sustainable consumption are still in its infancy.

4.2. “Policy 2”: What obstacles to the implementation of research findings have to be overcome?

Topics discussed on “Policy 2” are the following:

• Insights from models and simple experiments often cannot be easily translated into practical advice
• Policy advice is difficult when there is uncertainty leading to disagreement among experts - which is the case in the field of sustainability research
• Advising consumers can lead to unintended behavioural consequences
• Fix the information failure!
• Bridge the attitude/behaviour-gap!

The first major point in this map is a general one: Insights from the ‘lab’ often cannot be translated into practical advice. Even worse: In the social world, even real-life cases often cannot be compared with each other in such a way that sound forecasts can be made. Surely, there is no solution to this problem: Social scientists as well as historians have to deal with it all the time.

The second point is more specific: Policy advice is difficult when there is uncertainty leading to disagreement among experts – which is the case in the field of sustainability research. Although the questions discussed in this section of the map were touched upon mainly at the pre-conference and explicitly discussed in the conference keynotes or the sessions, they represent one of the most urgent topics in science communications:
Behind this discussion lies the question of the proper role of science in politics. Should scientific institutions act as political advocates (as many organizations involved in climate research, for instance, do? Don’t they risk losing their scientific credibility when they enter the game of politics? And: How can disagreements between experts be resolved?

The third branch of “Policy 2” treats a topic that was mentioned occasionally throughout the whole conference: Advising consumers can lead to unintended behavioural consequences. With the exception of labelling, a more systematic treatment is still missing here (i.e. the work presented at the conference does not offer proposals for systematic treatment; there may be studies on this elsewhere in the literature).

Here are the details:
A further branch of “Policy 2” concerns the issue of an “information failure”. Information failure means: Scientific knowledge often does not find its way into policy.

One might question whether such an information failure really exists: In many instances, government does not seem to be in short supply of scientific information at all. The same must not be true for the general public, though. Therefore, we list some proposals to address information failures in the public sphere:
One last point concerns the attitude/behaviour-gap. This topic was not much dealt with explicitly very much at the conference. Therefore, the only answer that we recorded seems to be rather disappointing: “If education fails to bring about the proper actions – develop more and better programs for (facilitation and) education!” The truth might as well be (Alan Warde hinted in that direction): In some areas, intellectual engagement will do little to cause a real change of behaviour – because most of our actions are not the result of conscious choice, but rather of habit or ‘blind’ reactions to stimuli from the environment. One example of this: The size of a bowl determines how much people will eat. Here, changing behaviour would require reducing the size of bowls – and not some sort of merely intellectual exercise. On the other hand: “reducing bowl size” could as well be an item on the list for facilitation and education.

4.3. “Policy 3”: What general advice can be given?
Finally, we come to third point: General advice. The map lists a variety of suggestions. Some of these concern the question of marketing research results, others the completion of a research agenda and the definition of possible fields for political action. Here are the details of the first ‘leg’:
Should social science fit its research agenda to the needs of politics after all – or insist on a more autonomous status? Surely: Science should not be politicized. On the other hand: As science is funded by taxpayers’ money, it is obligated to produce something that is of real benefit to society. Here, the question is whether the linkage of Practice Theory (a strand of sociological research) and sustainability is likely to produce useful results: Is it “just theory” – or a way to trigger long-scale changes? As there is no definitive answer to that question, whether or not the proposal to focus more on Practice Theory is good advice after all remains an unresolved question.
Other pieces of advice are the following:

- **Look at how other fields have dealt with the challenge of policy advice:** e.g., the nutritional sciences
- **Upscaling and implementation is more important than ever more pilot-projects**
- **In politics as in the media, the framing of a message often is more important than the message itself**
- **Politics is not the only relevant actor when it comes to the giving scientific knowledge a voice in practical matters**
- **Think from the consumer perspective, not only environmentalism**
- **Technological innovation has to be accepted by the market in order to be able to bring about change**
  
  *Example: Installation of toilet systems in developing countries [van Vliet, ProConf]*

- **How can individual researchers promote their research findings?** (AV 16)
  
  - Address political leaders who have an affinity to science
  - Frame issues in a way that will help the politicians who take them up to gain credits in the market of opinion
  - Take advantage of changes going along with elections
  - Be open for allies from the whole political spectrum
  - Timing matters: Sell your issue when there is demand for it (not when you have completed your research)
  - Politicians are more interested in proposals that will not cost a lot of money and that can be realized in a rather short timeframe
One short comment: Many of these points take for granted that the proper role of science is the role of a political advocate. Promoting one’s research in order to gain attention and, ultimately, obtain further funding, is surely a legitimate course of action. One the other hand, care should be taken not to blur the boundary between self-interest and scientific political advice.

4.4. Summary of “Policy 1-3”
The aim of this series of maps was not to prioritize but rather to collect and structure ideas that could help to bridge the gap between science and politics. Nevertheless, we close with a short list of the points mentioned that seem to us to be especially worthy of further consideration:

• Develop approaches for the prioritization of political actions (including methods for cost/benefit analyses)
• Calculate whether or not interventions tailored to specific groups can be effective
• Study cross-national comparisons and time series to arrive at an understanding of areas where changes in consumption could be possible
• Find solutions for dealing with disagreements among experts

5. Keynotes
We have constructed separate maps for each keynote talk of the main conference (except the closing notes by Lucia Reisch and Erik Assadourian). Please keep in mind that the claims that we have chosen as a starting point for our maps are not the original titles of the presentations. We chose the claims so as to be able to reconstruct the talks in the format of an argument. Also, elements in the maps must not be identical with positions held by the speakers. The focus of the reconstruction is to represent the argumentative space described by the talks. Sometimes we had to add elements to complete the chain of reasoning. Some of the material in the keynotes was also used within the topic maps.

Each of the keynotes highlights a different aspect of the conference. Alan Warde offers a general introduction to the study of consumption and the preconditions of intentional behavioural change, and Elizabeth Shove addresses the determinants of consumer behaviour. Kate Soper brings up the question of conceptual and normative issues related to sustainable consumption. Finally, Arnold Tukker and Inge Røpke both focus on the question of how future economic growth can be possible without an ever increasing demand for natural resources.

5.1. Alan Warde
This keynote provides an introduction to the state of the art of sociology of consumption. Warde questioned the rationality of consumer behaviour and discussed the question as to how “steering consumption” might be able to succeed if motives other than rational motives were determining
behaviour. To focus on an argument, we narrowed the map down to the central claim

“Sustainability policy that is focussed on steering the consumer via education and information is unlikely to succeed”

Here are the details:
5.2. Kate Soper
Kate Soper’s talk focussed on the idea of an “alternative hedonism”. The reconstruction of the argument gives less weight to the question of whether or not we should adopt an “alternative hedonism”. Rather, it questions if an “alternative hedonism” is likely to become a popular philosophy of life.

Four claims jointly support Soper’s demand for an “alternative hedonism” (i.e. a less consumerist lifestyle and a new idea of the good life and human flourishing):

- (1) Only a radical break with the current economic system will enable us to cope with the environmental and social problems!
- (2) A radical break can only be accomplished by a change in our understanding of what constitutes the good life (= “alternative hedonism”)
- (3) There are indicators that a change in our understanding of what constitutes the good life is already happening: signs of growing disaffection among consumers
- (4) Large-scale change in our understanding of what constitutes a good life is possible because changes of this kind follow the pattern of a “tipping point”

Here are the details. The first argument concerns the necessity of changing the present economic order:

The second argument should prove (given the necessity of entering some into some sort of post-growth economy) there are no better alternatives than “alternative hedonism”:

(1) Only a radical break with the current economic system will enable us to cope with the environmental and social problems!
- The current economic system produces social inequality that cannot be sustainable on a global scale
- Economic growth that is coupled to an ever increasing consumption of natural resources will not possibly go on for more than 100 years anyway
- There are different types of market economies. We need to modify the economic system rather than to step out of the market economy altogether
- Market economies are defined by underlying value-system. A shift in value-systems will bring about a change in the economic order
- Only a techno-fix will be the adequate solution for our environmental problems
- A post-growth economy will not be able to deliver new jobs

(2) A radical break can only be accomplished by a change in our understanding of what constitutes the good life (= "alternative hedonism")
- What could be examples of different ways/understandings of life?
- What idea of the good life would be desirable from the perspective of sustainability & social justice?
- Example: Consumer supported farming could be seen as the expression of an "alternative hedonism" as it incorporates a new appreciation of sustainable living
- Proposal: Only a way of life that everyone on earth can practice without that the planet getting ruined in the long term should be called sustainable!
- Example: The aim for fewer working hours could be part of an "alternative hedonism" (along with less income, less consumption, more time for the family and voluntary engagement)
- The 'alternative hedonist' critique:
  - is premised on the idea that even if consumerism were sustainable it would not enhance happiness beyond a point already reached
  - claims that it is now forms of desire rather than fears of ecological disaster that are likely to have most impact on any move towards more sustainable modes of consuming
  - argues that a sustainable ethic and politics should appeal also to the self-regarding gratifications of consuming differently
- An alternative framing of "alternative hedonism" (or a similar approach) is the concept of sufficiency (= reduction of forms of consumption that are not sustainable & that do not contribute to well-being/happiness in a significant sense)
- The current understanding of the good life/well-being is tied closely to the notion of happiness or life-satisfaction. This excludes important dimension’s of human flourishing such as the existence of intergenerational relations and community bonds
The third claim that is part of the general argument states:

(3) There are indicators that a change in our understanding of what constitutes the good life is already happening; signs of growing disaffection among consumers

Support for this claim is missing

The last portion deals with the mechanisms that could allow a large scale change to happen:

(4) Large-scale change in our understanding of what constitutes a good life is possible because changes of this kind follow the pattern of a “tipping point”

- Often, social practices and not individual choice determine individual behaviour and appreciation of certain ideals. Therefore, a transition cannot be brought about through a change in awareness

- Most people who preach alternative hedonism are not willing to ‘walk the talk’

Example:
- Scholars/researchers usually tend to be workaholics and are not examples of a “work less” philosophy

- Scholars/researchers are an exceptional case because their work is more self-fulfilling than other occupations

- Anecdotal evidence: Stress, time scarcity, air pollution, traffic congestion, obesity and general ill health are regarded as consequences of the capitalist/consumerist way of life

- Claims about growing disaffection with a consumerist lifestyle are or could be grounded in social science research

- How can the new idea of ‘alternative hedonism’ spread?

Open research questions:
- What are current understandings of a good life of “alternative hedonism”?
- Is there a reduction in self-reported happiness or life satisfaction that is tied to aspects of a consumerist lifestyle?

Disaffected consumers in affluent societies should take a leading role in the diffusion of “alternative hedonism”
5.3. Elizabeth Shove

Shove’s “Practice Theory” represents a holistic approach to explaining consumption behaviour. The approach leads to a range of new research questions.

In the map, “Practice Theory” is presented as an argument against overly simple plans to change consumption behaviour with the help of policy interventions. The main argument reads as follows:

Attached to the argument are further questions:
Detail: It is also important to provide a quantitative understanding of how various structural factors (e.g. income, education, urban form, infrastructure and social structures) affect consumption. Such determinant should not be seen as the “true” drivers of behaviour, but as factors that enable or prohibit people from engaging in various practices that then results in environmental pressure.

What could be an alternative approach for sustainability research?

Proposal of an alternative research framework (=Practice Theory) addressing the social practices that necessitate certain patterns of consumption

What research questions could be studied within the framework of Practice Theory?

Why did people abandon the habit of bicycling to work, as they did in the 1940s?

How did the idea become established that a meal is complete only when it includes either meat or fish?

How does the enactment of one and the same practice differ in its outcomes? For example, an English lawn has different ecological impacts in Great Britain than it has in Spain.

How do unsustainable social practices co-evolve, and how do they support one another?

How do social practices spread?

Why did we acquire the habit of taking a shower every morning?

"How do social practices of “doing consumption” and of “doing gender” interact? How do they influence each other in different systems of provision?"
5.4. Arnold Tukker
Arnold Tukker addressed the question of how to decouple economic growth and consumption of natural resources. He put more emphasis on the need to decouple growth and consumption of resources than on exploring ways in which the decoupling could actually work. Here is the central claim:

Arnold Tukker: We should aim at achieving economic growth without a growing demand for natural resources

(1) & (2)

(1) All other possible ways of action will not succeed: We will not be able to control either a growth in population or affluence. What we can control is the sustainability of the ways in which humans achieve affluence

(2) Economic growth is highly demanding on natural resources and unsustainable in the long run

What will bring about a change in the ways in which humans achieve affluence?

And here are the details:
(1) All other possible ways of action will not succeed: We will not be able to control either a growth in population or affluence. What we can control is the sustainability of the ways in which humans achieve affluence.

(2) Economic growth is highly demanding on natural resources and unsustainable in the long run.

A post-growth economy is not an alternative: The current economic systems needs 3% growth/year to prevent collapse.

Sustainable affluence: e.g. more efficient car use, solar technology, shifting values to more immaterial goods.

... even though more developed economies tend to become less resource-intensive per unit of output.

The last point on the map is the question:
What will bring about a change in the ways in which humans achieve affluence?

Business is a driver of change

Businesses gain by externalizing costs (= causing environmental harms that are not included in the price of the product)

Change has to be conceptualized in terms of systematic change, co-evolution and and emergence

Example for need for co-evolution: Labelling for coffee was successful when not only consumers, but also retailers came on board

Theoretical underpinning: Transition theory.
Typical approaches here are:
- putting pressure on the regime,
- experimenting with alternative niches
- deliberation and learning with stakeholder

Putting pressure on the regime: e.g. publication of WWF reports on ecological footprints; anti-smoking campaigns

Experimenting with niches: Examples from WWF One Planet Living

Deliberation and learning: Various platforms of NGO/business collaboration
5.5. Inge Røpke
Like Arnold Tukker, Inge Røpke dealt with the question of how economic growth and the ever increasing consumption of natural resources could be decoupled.

The main thesis is summarized as follows:

The thesis rests on the assumption that although economic growth is not sustainable in the long run, alternative solutions (such as a “post-growth economy” or a “Green New Deal”) will not work as a substitute for economic growth. Thus, growth without ever-increasing consumptions of natural resources is the only solution left. Here are the details:
(2) Alternative solutions do not fit

- A post-growth economy would solve our problems
- A Green New Deal could solve the problem

- Economic growth is necessary for political stability in the short run
- Energy-use embodied in imported goods has been neglected so far in the Green New Deal-calculus
- The Green New Deal is more expensive than its proponents make us think (it just seems cheap under the assumption that energy costs will rise steeply anyway)
- Green New Deal needs technology - and technology needs rare earths that are not available to an unlimited extent
- Therefore: Green New Deal can only be part of the solution
How can the necessary transition be accomplished?

Support the funding of new socio-technical approaches by "consumer capitalists" (alternative pension funds)

"Caps" are needed in order to avoid that green investments will encourage consumption growth

Limit the power of financial markets; reduce profit expectations in business

Differentiate between the different roles of the consumer:
- Investor-Consumers
- Prosumers
- Agents of Change
- Speculators
- Consumer-Capitalists
- Consumer-Providers
- Consumer-Innovators
6. General conclusions

Open questions and need for research synthesis
A range of questions were identified that need to be answered so that we can interpret and use the findings of the research presented at the conference.

Despite the large amount of data presented at the conference, there is still no easy answer concerning the impact of private consumption with respect to sustainability at large (“Steering 1”). Part of the problem here is that it can hardly be calculated in advance to what extent the effects of energy consumption, for instance, will be offset by more efficient ways of producing energy. More important, though, is that “sustainability” is a highly ambiguous concept. Also, data that would allow meaningful comparisons also need interpretation and are not easily available. Accomplishing this kind of research synthesis lies beyond the scope of this report. Nevertheless, it would be a useful contribution for the field of research under consideration.

Prioritization is another important topic. For instance, it would be interesting to have a more complete picture of those areas of behaviour that are ‘immune’ to values and information. A systematic evaluation of the research literature could probably answer this. In the same manner, targeting special groups could be a promising route.

Efficacy of values is one question. Another question is how values and ideas centred around the idea of sustainable consumption (such as Kate Soper’s “alternative hedonism”) spread in society. This would be of interest particularly so as to arrive at an understanding concerning the signalling effects that go along with certain behaviours (which add up to the immediate effects in terms of sustainability).

Finally: The implementation of research findings into politics seems to be a field which needs to be worked out further systematically. This includes whole range of subsequent issues such as the establishment of interdisciplinary peer review, psychological research to trace the reaction of consumers to certain forms of advice, or new forms of “knowledge brokerage” (“Policy 2”).

Controversies
One dispute concerns the necessity of economic growth. Whereas some researchers claim that we should strive for some form of economy without growth, others instead wish to decouple economic growth and the rising level of consumption of natural resources. Proponents of the “decoupling”-thesis also were sceptical regarding the impact of a “techno fix” and a “Green New Deal” (see, e.g., Røpke). Despite that, how “decoupling” could work in detail is still a rather open question.

Another major controversy revealed in the conference maps is whether the endeavour of “steering consumption” is in any terms realistic, given the complexity of the issue (see particularly the keynotes by Alan Warde and Elizabeth Shove and the mention of the “rebound effect” in “Steering 1”).

Connected to this last point, there are different opinions on the causal mechanisms of how the necessary change can be initiated. Some hold that only a radical change in thinking can lead to a significant change in behaviour (Soper). Others opt for more legal constraints and economic incentives (Warde; Tukker). For good or bad, these differences in opinion
seem to mirror the different backgrounds and basic assumptions of the academic disciplines involved.

When it comes to practical matters, some of the controversies mentioned seem to lose their importance, however. One example of this is the work that has been done to test which instruments are best suited to promote change in specific areas, such as electricity consumption in private households. Here, voluntary (in contrast to mandatory) solutions in combination with economic incentives have proven to have the most impact (“Steering 2”). Other studies showed that values typically have an impact on some consumption- and usage decisions (such as shopping) but not on others (such as travelling) (“Steering 3”).
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E.g., the EU-Project Integrated Method for Policy Making Using Argument Modelling and Computer Assisted Text Analysis (IMPACT), http://www.policy-impact.eu/


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