

Dr. Frieder Rubik^(a), Dr. Gerd Scholl^(b) and Prof. Harri Kalimo^(c)

Addressing Climate Change through Innovative Sustainable Consumption Policy¹

(a) Institute for Ecological Economy Research (IOEW), Heidelberg

(b) Institute for Ecological Economy Research (IOEW), Berlin

(c) Institute for European Studies (IES), Vrije Universiteit Brussel (VUB), Brussels

1 A new policy paradigm: sustainable production and consumption (SCP)

The last decade has seen a shift in the interest of policy makers and regulators from the issue of production towards that of consumption. The reason for this shift is that technical innovations have been met by increased levels of consumption. According to a report by the European Environmental Agency (2005: p. 8 and 33) households consumed about 26% of final energy use in the EU in 2001, their share of total CO₂ emissions was estimated to be about 10% (excluding personal travel and mobility) in the EU 15 in 2002. We also have witnessed that the environmental impact of consumption has increased in many sectors; despite substantial industrial innovation. This rebound effect (e.g., Hertwich 2005) has not only made consumption more relevant for environmental policy, but it has led to the role of individual consumers and households being emphasised.

Sustainable Consumption Policy constitutes one core element of Sustainable Consumption and Production (SCP) which has been on the international agenda since the early 1990s. It gained momentum, in particular with respect to implementation, at the World Summit of Sustainable Development (WSSD) in Johannesburg in 2002. All participating countries committed themselves to promoting SCP; with developed countries taking the lead. The Johannesburg summit of 2002 made a commitment to promote the elaboration of a 10-year framework of programs on SCP, in support of national and regional initiatives (UNEP 2002). International activities began in 2003 at the First International Expert Meeting held in Marrakech. The intention of the so-called “Marrakech process” was to jointly develop the framework for SCP programs. To realize this, consultations to identify priorities took place for each continent (2003-2005). An elaboration of strategies is now being developed, including regional consultations. At Stockholm and Costa Rica, for example, international meetings took place to discuss the progress of the SCP. The process is supported by seven Task Forces dealing with seven specific topics and by a Business and Industry Forum, an NGO Forum and by an Advisory Committee. These international activities should result in a review of the state of progress in 2010. A draft 10-year framework of programs on sustainable consumption and production will be negotiated by countries at the session of the UN Commission on Sustainable Development (UNCSD) in 2011. In September 2008, UNDESA and UNEP released a first draft discussion paper dealing with SCP (UNDESA and UNEP 2008) for public consultation.

Efforts of the European Union with regard to SCP could be traced back to the Commission’s emphasis on Integrated Product Policy (IPP).² IPP could be considered as a precursor of SCP. In June

¹ This paper is based on the outcomes of the project “Assessing the potential of various instruments for sustainable consumption practices and greening of the market” (ASCEE); ASCEE was a research specific support action for policy in the programme “Scientific Support to Policies” of the European Union’s 6th Framework Research Programme. Its scientific report (Rubik et al. 2009) has been published recently. The main research emphasis dealt with *innovative* instruments, approaches and practices to support sustainable consumption. Methods applied were *i*) semi-structured interviews based on an guideline with 79 experts from public administration, from non-governmental organisations, from academia and from business, *ii*) desk research (especially using internet, material provided by the interviewees, academic literature and databases), *iii*) nine exemplary case-studies, and *iv*) an expert workshop which took place in Brussels May 2008.

² See Rubik (2006) for a comparative overview.

2003, the European Commission published an official Communication on IPP (European Commission 2003) in which its ideas, some new, some modified, on the subject of IPP were presented, and in which IPP was brought into the context of sustainable development. The measures proposed by the Commission are based on five basic principles: life-cycle thinking, working with the market, stakeholder involvement, continuous improvement and a variety of policy instruments. The focus on the elaboration, implementation and revision of several instruments addressed toward a greening of products and services has been accompanied by a more conceptual approach, which takes up the outcomes of the ongoing international Marrakech process. The announced IPP-related activities have been continued, but the attention was directed more towards the issue of sustainable consumption and production patterns (SCP). In this area, the Commission delivered an inventory of its activities (European Commission 2004) and decided to strengthen its efforts to prepare an action plan. The updated EU sustainable development strategy (Council of the EU 2006) introduced SCP as one of seven key challenges and committed the Commission to prepare an SCP action plan by 2007. Its publication was expected in 2007; however, during the summer 2007, the Commission decided to merge its plans on SCP with the one on sustainable industrial policy (SIP). As a consequence, the Commission launched a background document (European Commission 2007). In summer 2008, the SCP Action Plan was finally published (European Commission 2008a). Its main target is to arrange a dynamic framework to improve "(...) the energy and environmental performance of products and foster their uptake by consumers" (European Commission 2008a: p. 2). The Action Plan consists of three parts: stimulating smarter consumption and environmentally better products, leaning production, and strengthening global market activities for sustainable products.

Beside European Union contributions, Member States have commenced their own SCP activities in different ways.³ However, there is no uniform setting. Government-driven (top-down) approaches and civil-society-driven (bottom-up) approaches coexist; some of the approaches are stand-alone conceptual documents (Czech Republic, Finland, Hungary, Poland and the United Kingdom), whereas in other countries (like Austria, France, Italy, Malta, The Netherlands) SCP is taking part in national strategies for sustainable development. Other Member States pursue approaches that focus more on the *instruments*, i.e. they implant and/or adopt instruments, tools etc. to strengthen SCP (e.g. Denmark, Germany) without an explicit policy framework document.

Two supranational strategies, namely the "Nordic Strategy of Sustainable Development" (Nordic Council of Ministers 2004) and the "Mediterranean Strategy for Sustainable Development" (UNEP 2005) deal with SCP embedded in these strategies.

2 Clustering innovative approaches

In the literature, different types of policy instruments (see e.g. Oosterhuis et al. 1996, GTZ et al. 2006, OECD 2008) are distinguished, namely regulatory and economic instruments, performance of governments and public institutions (e.g. public purchasing), compulsory and voluntary information instruments (e.g. mandatory energy labels, and information websites), other voluntary instruments (e.g. corporate social responsibility) and co-operative approaches (e.g. product panels). This distinction takes the policy-maker's perspective. It does not, however, illuminate the impact of policy intervention.

Therefore, we propose adding a new perspective on top of the classical instrument-based distinctions. By dividing consumption policies in terms of their *contribution to changing or enabling a change in consumer behaviour*, such policies can be more effectively created and managed in terms of, for example, climate change. Policy instruments could hence be grouped along three, partly overlapping dimensions:

- raising consumer awareness,
- making sustainable consumption easy, and
- greening markets.

³ See OECD (2008), Szlezak (2008), UNEP (2002) and UNEP (2008:23 ff).



Fig. 1: The three dimensions of changing consumer behaviour

The distinction between these three dimensions is linked with the fact that consumption needs to be understood as a process. From the consumers' perspective, the consumption process may be temporally divided into at least four phases: planning, buying, usage and disposal. Each of these phases of consumption affects climate change, but can usually not be addressed by a single, cross-cutting measure.

As said, the dimensions of how to affect consumption behaviour and the phases of the consumption process are interlinked. The first dimension of changing consumer behaviour is "Raising consumer awareness". It is closely associated with the planning phase of the consumption process; while the "Making sustainable consumption easy" and the "Greening of markets" dimensions are more closely linked with the buying phase of consumption. Therefore, by grouping the "Consumer awareness raising", "Making sustainable consumption easy" and the "Greening markets" dimensions separately, distinctions between the planning and buying phases in the purchasing process may be better highlighted.

There is substantial number of instruments that approach sustainable consumption from the angle of "**Raising consumer awareness**". Information campaigns and information websites, eco-benchmarking tools, and consumer coaching measures, such as "eco teams" are but few examples. These examples include also climate change related instruments such as eco-benchmark tools⁴. Evidently, "Raising consumer awareness" is an important factor in changing behaviour. Awareness raising instruments are, however, limited. They depend on the consumer reacting voluntarily, sometimes without the necessary infrastructure or without help in overcoming barriers to changed behaviour. It is, therefore, crucial to combine awareness raising with other kinds of instruments. We must reconsider the current economic and political framework even generally speaking, in order for awareness raising to have the greatest impact on behaviour, and consequently on climate change.

Among the identified instruments in the second dimension of "**Making sustainable consumption easy**" are various attractive offers to consumers and means to limit the range of non-sustainable products on the market. It is acknowledged that consumers may be willing, but unable to act in a sustainable manner. If sustainable products are not easily available, hard to know about or to understand, or if they are prohibitively expensive, the greener purchasing decision may not occur regardless of the goodwill of the consumer. In fact, the mere perception that one is unable to adapt to certain behaviour may be sufficient to prevent consumers from taking action. Therefore, the instruments in this category aim to take consumer behaviour from the level of awareness to that of action, i.e. filling the "value action gap". This may be achieved by creating an environment in which sustainable consumption is mainstreamed into consumers' current lifestyles and by making the sustainable choice easy to implement, practical and financially attractive. Examples of this type of tool include third-party investors for energy efficiency, point of sales guiding systems, bonus systems, green taxes, congestion charges as well as retailer assessment instruments such as the Red/Green Calculator (see below). The last mentioned are examples of instruments on climate change. Making *unsustainable* consumption *less* easy

⁴ See www.environment.fi/eco-benchmark, accessed April 29, 2009.

also falls under this dimension. In other words, by making it more difficult and costly to consume in an unsustainable manner, sustainable consumption may eventually become the easier choice to make. Individual carbon trading is an example. If there is a cap on allowed emissions and a cost is associated with exceeding allowances, this may influence more sustainable behaviour at the individual level.

The “*Greening of markets*” is a third dimension of SCP policies. Creation and greening of markets can be achieved in different ways in terms of “market penetration” and “environmental performance” by *improving* the environmental performance of products and/or by stimulating ‘greener’ product innovations, by *phasing out* or even prohibiting products with bad environmental performance, and by *increasing the market share* of environmentally benign products. Examples of climate-referring instruments are the Energy-Using-Products Directive of the European Commission (EuP) or the European Energy Labelling scheme for durable household goods.

These three types of policy intervention dimensions have obvious overlaps. Congestion charges, for example, may not only make unsustainable consumption difficult by deterring commuters from driving cars, but also positively influence the market for public transport services. And eco-labels do not only contribute to raising consumer awareness, they also spur greening of markets by increasing the visibility of greener products and by providing incentives for suppliers to make such offers available.

3 Innovative Sustainable Consumption Instruments linked to Climate Change

There is currently a number of promising climate change related sustainable consumption instruments under development. In fact, it appears that consumption is being addressed in a rather versatile and comprehensive fashion: innovative tools can be identified within each of the three behavioural dimensions of consumption. In the following, we present an outline of novel instruments with good prospects to contribute to reducing climate change are explored in more detail, for more information see Rubik et al. (2009).

3.1 Raising Awareness – the example of “One Tonne Less”

The Danish Ministry of Environment in cooperation with the Ministry of Transport and Energy launched the campaign “One Tonne Less” in March 2007. It runs to the end of 2009 and is directed at Danish consumers in order to reduce the CO₂ emissions from the activity of modern households. The campaign is first of all directed towards the environmental dimensions of sustainability. It is within this dimension that there are formulated goals, and the campaign will be benchmarked according to the environmental attitudes and behaviour in December 2005.

A large number of businesses, NGOs and local political authorities are engaged in the campaign, and contribute substantially to the activity. However, the main target group is individuals and households.

In addition the One Tonne Less campaign has also selected two target groups for special attention.

The first group is relatively “wealthy” green consumers; the other is children and young ones. On the one side, the green consumers are informed of the environmental impact of their everyday life, and they have started their green practises. They need help and advice to develop their practices further. In particular, they need to distinguish between symbolic behaviour and changes that really matter. They are a target group because it could be possible to change their behaviour significantly during a one year campaign. In a way, they are the low hanging fruit of One Tonne Less. On the other side, studies show

that young consumers are aware of the environmental problems, but they do not link these problems to their own consumption and everyday life. They are a target group because of significant potential, and because it is early in their consumption practices.

One Tonne Less has developed a large variety of activities to engage consumers in the campaign such as the CO₂ calculator, individual advice, competition and games, exhibitions and the involvement of celebrities and artists.

After two years of running the campaign, 83,000 Danes have committed themselves to reducing a total of 111,000 tons of CO₂. The amount of climate pledges, through which people commit themselves to the CO₂ reductions, however, varies over time. For instance, a so-called ‘employee-campaign’ that was aimed at the 10,000 largest companies in Denmark in the summer and fall of 2008 has generated more than 46,000 climate pledges. An interim evaluation, carried out in late 2007 revealed, amongst others, that almost half of the Danish population has heard about the One Ton Less campaign and that one third is aware of its content. 17 % of respondents declared that the campaign has made them reduce their CO₂ emissions. A final evaluation will be performed after the campaign has ceased.

It is very easy to be impressed by the way the One Tonne Less campaign has been planned, organised and carried out in Denmark. In many ways they seem to have done everything correctly. The campaign was thoroughly planned. The campaign showed political leadership. The message in the campaign was simple: to inform about simple ways to reduce the CO₂ emissions. The visions of the campaign were a fruitful combination of strategic and concrete measurable goals. The target groups were identified. The material produced by the campaign, and the excellent homepage (<http://www.1tonmindre.dk/>) were designed for these target groups. One tonne less has also managed to build an impressive network of partners and stakeholders from businesses, public authorities and NGOs.

The campaign is impressive and could be used by other countries as a guideline, when they want to design their own campaign. However, has it been a success? It is a traditional information and awareness raising campaign, where few new windows of opportunity are opened. This is the striking weakness of the One Tonne Less campaign. The framework created by businesses and political authorities is not at all changed. It has not been easier or cheaper to follow the environmental advice given in the campaign. The campaign is limited to inform individuals and households about the windows of opportunity for changes that already exist.

3.2 Greening Markets – the example of the Dutch “Green Funds Scheme”

The Dutch Green Funds Scheme (GFS) is a tax incentive instrument that has been used by the Dutch government since 1995 to encourage environmentally friendly projects, e.g. in renewable energy, organic farming, or sustainable housing. Investing in the Green Funds means that individual investors – private consumers – lend their money to banks, at a lower interest rate, which is compensated by a tax incentive (environmental tax credit). The government provides the necessary legislation, supervises the banks issuing green funds or offering green savings and ensures that green projects are properly assessed against the ecological criteria set by itself. The green banks can then offer cheaper loans to environmental projects and thereby improve their financial condition.

The GFS contributes to the greening of markets in two ways: It supports the proliferation of, e.g., wind energy, energy efficient greenhouses, and organic farming methods, i.e. contributes to creating greener markets in energy production and in agriculture. And it creates a market for socially responsible investments that provides the opportunity for consumers to invest their money in an environmentally friendly way according to their green preferences. The Green Funds, as fiscally-facilitated investments, are unique in Europe. No such scheme has been implemented in other European countries at the moment⁵.

During the years 1995 to 2008, more than 5,700 projects have been supported by the scheme, accounting for a total amount more than 11 billion Euros. Judging the scheme, it “has had a catalysing

⁵ Green Funds, however, are part of a more comprehensive discussion on (non-fiscally-facilitated) socially responsible investments (SRI). See e.g. Eurosif (2006).

effect on socially responsible saving and investment” (Scholtens 2005: p. 135), and therefore can be regarded as a successful policy instrument. The approach is convincing in that it provides a clear incentive to change to more sustainable (investment) behaviour and in that it reframes the symbolic meaning of the environmental dimension of sustainability – from environment as a threat to environment as an (economic) opportunity. By this intended side-effect, the system significantly contributes to raising awareness for ecological concerns, especially in the banking sector where sustainability has only gradually entered the agenda.

Investors react very sensitively to any (planned) changes in fiscal policies. There were some political discussions on the scheme in The Netherlands which showed that the more discussions on the framework of the system, e.g. the amount of the environmental tax credit, the more difficult it is for the banks to assess the expected number and volumes of green project applications and of private investments respectively. Hence, such schemes will be more successful where the tax regime is fairly stable and trust between the government and the banking sector established.

The potential to transfer a fiscally facilitated green funds scheme to other countries depends upon the willingness of governments to give substantial tax advantages, the availability of money from individual investors and the need for cheap loans from a sufficient amount of green projects. The topic of green and/or social investments represents a rather progressive sustainability issue which is not yet widespread in Europe (Dawkins et al. 2007). Thus, it appears fairly unlikely that less developed European economies would start engaging strongly in this issue while other – possibly more pressing – sustainability concerns have not been tackled.

3.3 Making Sustainable Consumption Easy – the examples of the UK “Red/Green Calculator”, of the Campaign “We’re in this together” and of “Top Ten”

The UK “Red/Green Calculator”

The Red/Green Calculator (R/G Calculator) is a voluntary policy tool that strives to accelerate the shift towards more sustainable product offers on retailing shelves. It provides retailers with an easy-to-use tool (database), which enables them to assess their own performance with regard to the sustainability of their product portfolio and consequently encourages them to change their offer. The R/G Calculator has not yet been presented to the public. It is currently in the final stage of development and publication is anticipated for early 2008.

The R/G Calculator aims to make it easy for retailers to comply with UK policy and targets to mitigate the environmental impact of products. At the moment, it covers the energy consumption in the use-phase of a number of different consumer electronic product categories.⁶ The R/G Calculator translates performance data of these products into so-called ‘ecopoints’. Based on the ecopoint scores, the different products, but also the retailer as a whole, are classified ‘red’ or ‘green’. ‘Green’ stands for a ‘sustainable’ product offer and ‘red’ for not sufficiently sustainable products. The criteria for deciding whether a product is ‘green’ reflect not only the UK government’s (long-term) policy targets with regards to environmental goals such as energy efficiency and CO₂ emissions, but also the current product stock on the British market.⁷

The R/G Calculator contains, on the one hand, product specifications for the current year and, on the other hand, projections for the government’s future targets for coming years until 2020. The increasingly more stringent indicative product specifications provide the retailer with a projection of which energy efficiency performance would be required to match government policy and targets in upcoming years. These future projections are valuable information for retailers’ business decisions and long-term planning.

It seems that there has not been a tool like the R/G Calculator before. In contrast to green labelling, the R/G Calculator does not use absolute criteria. It is based on relative specifications (average of stocks) and on dynamic requirements. This enables faster updating and much more flexibility. Another

⁶ Televisions, DVD players, video recorders, set-top boxes and external power supply units.

⁷ The data underlying the R/G Calculator specifications are based on stock models drawn up within the UK Market Transformation Programme (MTP). MTP is a data-driven programme that “supports the development and implementation of UK government policy on sustainable products” (www.mtprog.com).

innovative aspect is the projection of future requirements. The R/G Calculator is unique to the UK. Some countries may have programmes similar to the UK Market Transformation Program's evidence base, but so far no other tool like the R/G Calculator is known to exist.

The retailing sector is in a key position. It is the link between production of goods and consumers. It has been claimed that "it informs the end-user about product features (...) [and] in its position as purchaser and customer it can dictate the conditions of supply. It works with suppliers to encourage product development and process optimisation" (Sarasin 2006: p. 5). The R/G Calculator enables retailers to source more efficient products and thereby to influence the manufacturing of products. And, on the other end of the supply chain, retailers influence consumer decisions by shifting towards a more sustainable product portfolio, which will make it easier for consumers to make sustainable choices (NCC 2006: pp. 1-2). Indeed, the tool will also make *unsustainable* consumption more *difficult*, because retailers are expected to remove the worst performing products from their selection to maintain their overall scores. It is therefore expected that the R/G Calculator could have a significant impact on sustainable consumption. Yet, the voluntary character of the tool could be a limitation to its success. This will be seen once the R/G Calculator has been in use for a sufficient period of time.

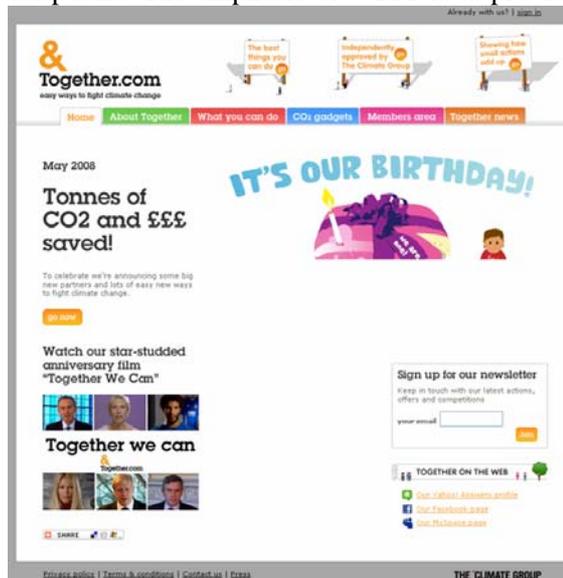
The R/G Calculator could be expanded to other product groups and beyond energy-in-use consumption. DEFRA is currently working on including water-using products. Yet, the crucial precondition for the inclusion of additional products and specifications is the availability of high quality data. For products such as food it might be difficult to design a R/G Calculator, as it is much more difficult to capture all the environmentally relevant aspects of this group of products.

The R/G Calculator could in principle be transferred to other countries. The crucial precondition is the availability of good and sufficient market data. We must also take into account the differences in cultures and in the levels of consumer awareness on environmental issues. In the UK, consumer awareness of environmental and climate change issues is high. Retailers see a benefit in providing sustainable products, because it will attract more clients. Also, public pressure can be generated to influence retailers. In a society with a low level of environmental awareness, the R/G Calculator would not be as well received by retailers.

The Campaign "We're in this together" (WITT)

We're in this together (WITT) is a campaign, a cooperative approach instrument, that is based on the voluntary commitment of companies and the general public. The emphasis of WITT is to provide attractive, practical and environmentally sound offers to consumers. This way, sustainable consumption is made easy for the individuals, which may in turn induce a change in their behaviour.

Launched in April 2007, WITT may be seen as an instance of public-private collaboration. It was initiated and is supported by the UK government and run by the Climate Group.⁸ The campaign was launched as a 3-year programme and it is an offspring of several studies and strategic planning by and for the government. Support from the former Prime Minister Tony Blair was essential in attracting several companies to participate in WITT from early on. With continuing government support in initiating new ideas, the campaign has also been able to grow into new directions. The "Eat Seasonably" campaign was just launched to promote



⁸ Members of the Climate Group: CORPORATE: ABN Amro, AIG, Alcan Inc, Allianz Group, Arup, Baker & McKenzie, Barclays PLC, Bloomberg, BP, BSKyB, BT, Catalyst, Cheyne Capital Management, Duke Energy, Google, HDR, HSBC Holdings, Interface, Johnson & Johnson, JPMorgan Chase & Co., Man Group, Marks & Spencer, Munich Re Group, MWH, News Corporation, Pratt Industries, Starbucks, Swire, Swiss Re, Tesco, Timberland, Virgin, MUNICIPAL GOVERNMENT: Greater London Authority, New York City, REGIONAL GOVERNMENT: California, Connecticut, Maine, Manitoba, Massachusetts, New York State, Ontario, Quebec, South Australia, Victoria (<http://www.theclimategroup.org/>).

the consumption of seasonal fruit and vegetables.

Membership to WITT is flexible. Currently, there are eleven corporate partners in this interest group.⁹ The initiative is defined broadly, which leaves room for a variety of companies to participate, as long as the selection criteria are met. Corporate and civil society engagement is important also in the above noted “Eat Seasonably” spin-off to WITT.

WITT aims at decreasing the gap between consumers’ sustainable intentions and actions in terms of carbon emission reduction by bringing together attractive offers. The website www.together.com provides a wide range of information and options on the corporate partners’ offers, as well as general information on climate change. Within WITT, inbuilt indicators measure the success of parts of the campaign, and the development of the campaign may be followed on its website. The Climate group, along with the Energy Saving Trust, developed a model to calculate energy savings from most of the participating companies. WITT thus strives to provide basic practical knowledge, to have an impact on purchasing decisions through attractive offers, and to monitor its success.

Elements that contribute to the success of the campaign are considered to be extensive background research, government involvement and support, key stakeholder involvement, flexible structure with potential for transferability, a small-scale manageable project, with simple measures to reach the consumer, large influential corporate partners, credibility of the NGO managing the project, a broad and flexible scope, open to diverse participation, interactive, a well designed information website, the philosophy of collaboration, bringing together many small initiatives under one hat, creating a whole that is stronger than the sum of its parts, not demanding consumer sacrifice, providing practical solutions, providing corporate partners with guidance and assistance in developing solutions, and economic and institutional efficiency.

WITT’s environmental effectiveness, compared to the intermediate goals and the scale of the project, appears to be relatively high. In fact, the campaign has already led to CO₂ reductions of over 1.3 million tons. Despite the applaudable uptake, when looking at the overarching goal of dramatically reducing carbon emissions in the society, significant environmental changes cannot of course occur as a result of this instrument alone. Some of the strengths and factors of success may also make it vulnerable. Key barriers to the campaign include vagueness of criteria for participants (may lower environmental effectiveness), vulnerability as the initiative is dependent on the participants’ dedication, management limitations, low brand recognition, other campaigns in the same field reducing the visibility of WITT, and a lack of secured ongoing funding. Moreover, the involvement and genuine commitment of participating companies are not guaranteed. The small scale of WITT requires relatively low level obligations from its corporate partners which may not bring about change in the short run.

The main innovative elements of WITT are the broad and versatile collaboration, as well as the approach to reach the consumer. By changing attitudes through behavioural changes, rather than the other way around, the tool makes it easy for consumers to make environmentally sound choices. It thereby has the potential to also reach environmentally less conscious consumers. This widens the scope for sustainable consumption policies.

The campaign is to be launched in the USA and Australia next year, with plans to spread WITT to India and China. No major barriers to transferring the campaign to other EU member states are foreseen, provided that political will, corporate structures, companies’ interests to participate and understanding of the markets remain on a similar level.

The TopTen

TopTen is a voluntary instrument that facilitates educated consumer choices. It is an online tool that displays the most energy-efficient products, available on a range of national markets throughout Europe, and enables the consumers to conduct simple comparisons between such products. TopTen mainly addresses energy-intensive household appliances in the form of rankings of the 10 most energy-efficient products within defined product groups (e.g. refrigerators, washing machines, dryers, energy saving lamps). The TopTen initiative is run by a non-governmental institution. It benefits from active and substantial governmental support.

⁹ B&Q, Barclaycard, British Gas, HSBC, More Than, National Express, O2, Sky, Tesco, The Mayor of London and M&S, all considered a major brand in the UK.

TopTen was launched in 2000 by the Swiss Agency for efficient energy use (SAFE). Following the Swiss success, the initiative began to spread throughout Europe. Today, 13 national TopTen sites are operational.¹⁰

The exact methodology for product evaluations in TopTen varies by product type. Energy consumption indexes are the dominant criteria for ranking. Additional environmental criteria, such as water consumption and noise, economic criteria, such as price, as well as product specifications, may also be consulted. Twice a year, the whole range of products is re-assessed. New products may be added as soon as the necessary information is provided to TopTen. This renders the website dynamic. It can quickly take into account rapid changes in the market.

The success of TopTen is grounded on the existence of recognized labelling and/or certification structures. Harmonized product declaration requirements for producers (in this case, energy consumption mainly), provide a reliable technical information basis to performance assessment. The existence of and collaboration with reliable third-party testing and verification organisms is another important prerequisite for the instrument.

It is also possible to characterise conditions that contribute to the success. The cross-national harmonization of product declarations and labels in order to efficiently benchmark national markets is a good example. Credibility, neutrality and independence of the information displayed are also crucial. A good environment for collaboration between the actors involved is necessary to strengthen the credibility of the initiative. The attractiveness, ease of use and frequent updates of internet pages assists.

Public information websites for “green” products are relatively common, but they usually address a very specialized public. TopTen tries to mobilize larger numbers of consumers through awareness raising campaigns and through a particular emphasis on win-win situations. Consumers who aim at reducing their electricity bills are a key target group.

The TopTen initiative can be seen as particularly innovative insofar as it:

- Presents simple rankings, synthesizes complex information for consumers, but involves very little information seeking from their part;
- Keeps the product databases systematically updated, thus enabling a dynamic surveillance of market developments. The flexibility is seen as a clear comparative advantage over labelling procedures;
- Has transparent and flexible evaluation methods (integrating a growing number of criteria);
- Seeks the construction of a large international network of national information websites. The formation of new national initiatives is encouraged. The resulting versatility and relative independence of the national initiatives may generate fruitful mutual learning processes, also for the benefit of the policy makers;
- Is supportive of the idea of “EU consumers” and a common European marketplace. Euro-TopTen ranks products throughout European countries and highlights their national availability.

Initiatives such as TopTen are conducive to contributing to “making sustainable consumption easy” in effective ways. Combined with the appropriate policy tools (e.g. effective, reliable, labelling and product declaration schemes, revision of labels and minimum efficiency requirements), it may provide one solution to sustainable consumption, provided that there is consumer and supply-side response to online information provision.

The diffusion of the initiative throughout European countries has so far been rather successful, although it is too early to draw conclusions. Further transfer may face significant barriers that could be overcome by strong cooperation among national initiatives, and with the harmonization of European legal frameworks.

¹⁰ Austria, Belgium, Czech Republic, Finland, France, Germany, Hungary, Italy, Luxemburg, The Netherlands, Poland, Portugal, Switzerland.

4 Conclusions

4.1 From Production-Related to Consumption-Related Policies

One can conclude from recent analyses (see Rubik et al. 2009) that in public policies that promote more sustainable consumption patterns, the majority of instruments tend to address the supply side. Only few measures put the consumers centre stage, i.e., product usage, lifestyles and consumption patterns (see *Fig. 2*). And the policy measures directly related to consumers are often confined to the provision of information, such as with eco-labels and consumer awareness-campaigns.

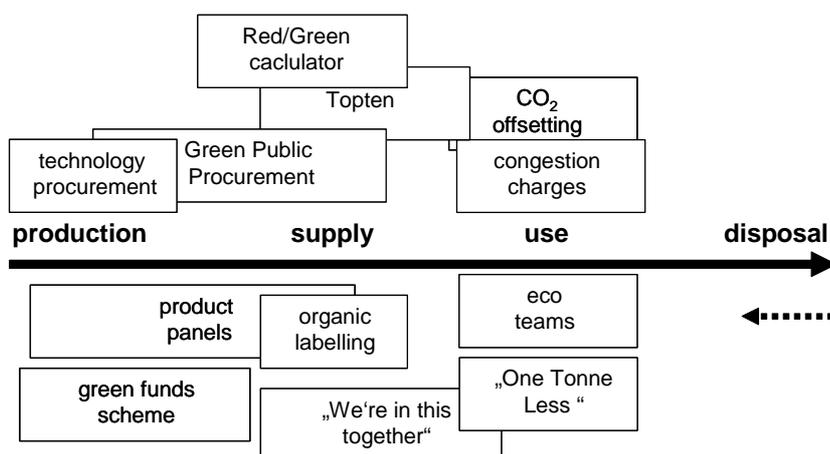


Fig. 2: 'Touchpoints' of policy instruments along the life-cycle of products

But information is not sufficient to change people's behavior. Everyday consumption practices are strongly driven by habit and context. Hence, in order to achieve substantial and durable alterations in consumer lifestyles, a more far reaching or different kind of intervention is needed one that systematically develops an ability to consume in a more sustainable fashion as well as generating further opportunities for greener consumption. In this perspective, important approaches are creating an infrastructure that supports sustainable choices, e.g. by developing public transports services and by promoting spatial planning that leads to reduced mobility needs, and introducing motivational instruments that, for instance, give behavioral feedback and stimulate positive peer influences (Tukker et al. 2007).

It appears that current European policies to foster sustainable consumption in Europe have not yet sufficiently reflected this extended scope of policy intervention. One reason may be that consumption-oriented policies are often derived from cleaner production and integrated product policies that per definition focus on the production and supply side of the market and follow the *efficiency* paradigm and performance improvements. However, in order to exploit the full sustainability potential of public policies relating to consumption, a more explicit consideration of these aspects is required. In particular, taking into account the fact that efficiency gains are often offset by an increase of the absolute amount of consumption ("rebound effect", see Hertwich 2005) a re-consideration of the *sufficiency* paradigm might be required. That implies that policy-making does not restrict itself to improving the environmental performance of current product ranges but rather starts to reflect underlying needs and the complexities and dynamics of modern consumption patterns.

As a consequence, knowledge on those factors that determine consumer behaviour becomes more important, and also a sound evidence-base becomes a crucial element for successful policy making. This is another shortcoming of current sustainable consumption policies (see Rubik et al. 2009). While data on products and production processes becomes increasingly comprehensive and more easily available, (see, for instance, the "European Reference Life Cycle Data System" [ELCD])¹¹, socio-economic data is still scarce and/or on a fairly aggregate level (see, e.g., the Eurobarometer Survey Series, such as European Commission 2008b), and rarely employed for policy formulation. Such data

¹¹ See <http://lca.jrc.ec.europa.eu/lcainfohub/datasetArea.vm>.

could report on consumption practices (e.g. purchasing patterns, consumption of resources during product use), consumer values and attitudes, heterogeneity of consumer groups, barriers for change in everyday life, etc.

This reasoning is not to argue for placing responsibility for more sustainable consumption patterns on consumers alone. Certainly, they have a more active role to play. But, at the same time, they have to be provided the means and resources enabling them to change. And, it is this latter responsibility that remains with governments and other stakeholders, such as business. Hence, sustainable consumption is a shared responsibility.

4.2 In The Shadow of Hierarchy: Design of Sustainable Consumption Policy

Modern policies promoting sustainable consumption are characterised by a mix of traditional government and new governance approaches. The government mode stands for a more regulatory policy of top-down interventions, while the governance mode represents a policy approach exploiting the potential of co-operation and self-commitment by all relevant stakeholders. However, the gradual shift from government towards governance does not follow a linear but rather an iterative pattern. The prime goal is to supplement classical command-and-control policies by more stakeholder-related and ‘soft’ approaches – at least in those cases where a mix of government and governance promises efficiency and effectiveness gains.

The examples presented illustrate cases where governments’ activities are not restricted to a regulatory role. They stress the active role as facilitator and activator of stakeholders, business and retailers in market transformation. Public authorities increasingly change their level of activities as situations require – in an iterative or circular rather than linear process. They closely co-operate with business, consumers and stakeholders by exchanging opinions, insights and strategies – and by indicating policy targets. Policy designs have become more versatile and less static.

In the case of sustainable consumption, the role of public authorities and regulatory instrument (“government mode”) has “inherent” restrictions. The governance mode is valuable for several reasons: Consumption is a complex domain touching different areas. It ranges, for example, from housing occupational and leisure time travelling, to food purchase and preparation. Accordingly, different types of consumer behaviour – from short term everyday routine consumption (low involvement decisions) to long term consumer investments (high involvement decisions) – are involved, as well as different types of stakeholders. Another reason is that consumers themselves have multiple roles. They are purchasers, users, family members, friends, citizens, employees, voters etc. and all roles they take might have some impact on their consumption patterns. As an employee, they may commute by public transport. As a mother or father, they may ride a family van. As a citizen, they may boycott certain products and brands. As a friend, they may imitate the consumption habits of others for social bonding, etc. Again, this calls for a multitude of actors entering the stage of sustainable consumption policies. Finally, some stakeholders are actually closer to consumers than public authorities. This is the case for the retail sector which provides everyday consumption items. It is also true for private associations, such as sports and other leisure time clubs. Considering such actors in the formulation and implementation of sustainable consumption policies, again, is a reasonable strategy.

However, governance-oriented policy approaches might be more time-consuming than traditional regulatory top-down policies. Businesses and civil society organisations need to be taken on board and compromises often need to be found to act together. Exchange of opinions, consensus-findings and also political decision-making needs time. This is relevant for policy formulation and policy implementation. Policy makers have to take this into account when formulating policies to promote sustainable consumption. All the more, as this more long-term-oriented policy perspective might conflict with shorter policy cycles and short-term environmental pressures.

Taking into account the potential risks associated with governance-based approaches, the possible benefits of a “shadow of hierarchy” (Scharpf 1993) are obvious: “The shadow of hierarchy can involve legislative threat or inducements” (Héritier and Lehmkuhl 2008: p. 2). Its existence implies that the governance mode would be re-shifted to the government mode, if the voluntary approaches failed. Hence, one can conclude that at the end of the day, even if responsibilities have been shared and many

actors have started to more actively engage in market transformations *policy makers can't outsource politics* (Berg 2006).

4.3 New Elements in the Design of Policy Instruments

The challenge of SCP has stimulated creativity and flexibility of policy makers and research by “designing” new policy instruments, some of them have progressed and have promising potentials. And also the transfer of instruments from a specific application context to other ones is progressing, (e.g. organic labelling in Romania, extension of the scope of the EU eco-design directive towards non energy-using products). Taking into account this development, we identified *novel elements* with respect to modern sustainable consumption policies and the instruments applied therein:

Collective action

Campaigns like “We’re in this Together” or “One Tonne Less” place strong emphasis on community building among stakeholders and particularly among consumers. By doing so, they follow the fundamental idea of “creating a supportive framework for collective progress, rather than exhorting individuals to go against the grain”, as it has been formulated in the UK “I will if you will” report (SDC and NCC 2006).

Consumers are strongly driven by habits and that convenience often takes precedence in pressured daily lives. Therefore, consumers tend to overestimate the costs of change. One may surmount this motivational barrier by organising real or virtual peer groups, i.e. practical forms of collectivity, within which people can demonstrate that (small) changes in everyday life are actually feasible, and within which they are provided with opportunities to ‘lead’ by good example.

While keeping in mind that the strength of this community building approach must not induce governments to place the responsibility for more sustainable lifestyles on consumers alone, it is clear that it offers new potential to tie sustainable consumption policies more closely to social realities.

Adaptability

Modern sustainable consumption policy instruments have to cope with shorter innovation cycles and accelerated market pace. Consumption areas characterised by this phenomenon are, for instance, consumer electronics, information technology, passenger cars, and – probably to a smaller extent – household goods such as washing machines, dish-washers or cold appliances. Obviously, in these areas, an instrument such as a ‘classical’ eco-labelling scheme is increasingly incapable of keeping up with rapidly progressing product developments. An instrument such as the “Topten” information platform is more flexible in this respect, since it relies on short revision-cycles: Product assessments take place every six months. Twice a year, all product groups are re-assessed, and the assessment is usually translated into changes in the selection of the ten best available products. Furthermore, new products can be added as soon as the necessary information is provided.

The need to adapt policy instruments to altered market circumstances will be a continuing challenge assuming that product innovation remains a major force in the saturated consumer goods markets. Information and communication technologies are a good example. A recently published German policy brief summarises the task as being “to strengthen the synergies between regulatory design requirements, obligatory labelling and voluntary eco-labelling and to dovetail the dynamisation of these instruments” (BMU and UBA 2008: p. 12).

Extended evidence base

Scientific evidence has traditionally played a role in environmental policy formulation, for example, in clarifying the environmental performance of one-way versus reusable packaging. Also today, a sound evidence base appears to be a major success factor for current sustainable consumption policies. What has changed, however, is the thematic scope of the evidence required for proper policy design. In some of the approaches studied, the information comprises not only technical and life cycle assessment data, but also evidence from social sciences referring to issues such as consumer values and attitudes, heterogeneity of consumer groups, barriers to change in everyday life, etc. The Danish One Tonne Less campaign and the British Together campaign are examples. And also the “Framework for

Pro-environmental Behaviours”, developed in the UK (DEFRA 2008), shows that effective policy design will benefit from a good evidence base.

Hence, public policies to promote sustainable consumption should pay more attention to the generation and exchange of data that helps to come up with policy tools better fitting the everyday lives of consumers.

The social dimension: another new element?

Apart from these three comparatively new features of at least some of the policy instruments, one could envisage another new element in public policies to promote sustainable consumption and climate change; namely, a more explicit consideration of the social dimension of sustainability. As far as the ASCEE overview reveals, however, this is not the case yet. Policies still mainly address the environmental problems of consumption, while the social dimension of current consumption patterns, such as the working conditions in upstream stages of the product life cycle or the terms of international trade, have not yet been captured to the same extent (see also Szlezak 2007: p. 34).

Policy approaches integrating the environmental and social dimensions of sustainability are encountered, for instance, in labelling instruments. In addition, the issue of ethical consumption and fair trade is sometimes a matter of public information and education campaigns. But until now a more binding consideration of social issues in policy design, e.g. in procurement guidelines or taxation policies, is not yet established. One exception is the UK Government timber procurement policy, introduced in 2000. It requires the government’s central departments to actively seek to purchase legal and sustainable timber and products derived from wood. The central government departments report that certified products accounted for 75% of their expenditures spent on timber in 2003/2004.¹²

The depicted features of policy instruments (emphasis on community building, adaptability, extended evidence-base, and (emerging) integration of social issues) prove the observation that product policies have, at least to some extent, further developed from the early 1990s (see e.g. Oosterhuis, Rubik, Scholl 1996), particularly in that consumption patterns are slowly, but increasingly, taken into account in policy formulation. The novel aspects to policy instruments might provide important leverage to market and behaviour transformations and, hence, should be considered carefully in further development of sustainable consumption policies.

5 Policy Recommendations

We have organised our recommendations along four different layers (see *Fig. 3*).

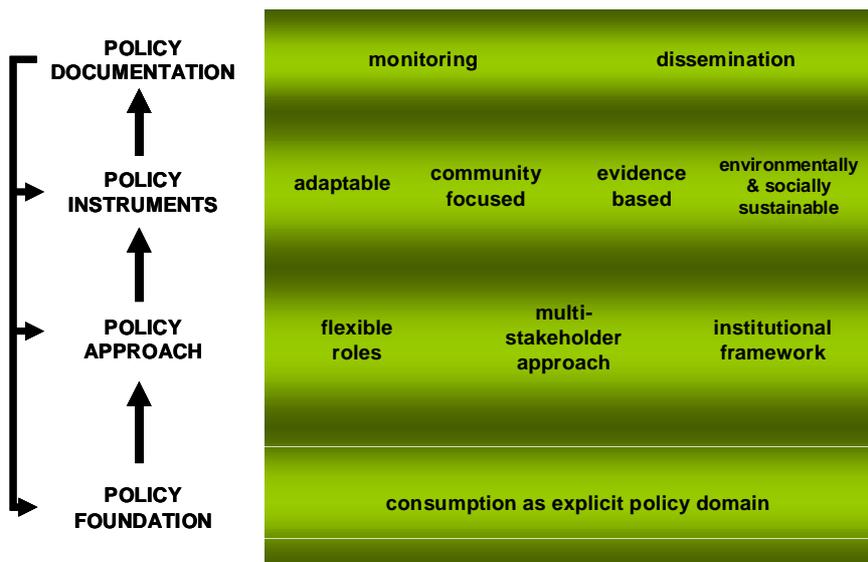


Fig. 3: The architecture of ASCEE’s policy recommendations

¹² See <http://www.proforest.net/cpet/uk-government-timber-procurement-policy> (accessed April 29, 2009).

First of all, climate change policy would benefit from acknowledging that consumption is an important policy domain in itself [*policy foundation*]. The consumption of private households bears large potentials for CO₂ reductions, particularly, when addressing all consumption stages, such as purchase, use and disposal. In addition, consumption levels should be addressed also, since often product-specific energy-efficiency gains are offset by an increase in the absolute amount of their consumption ('rebound effect').

Building upon that, the policy approach taken should enable policy makers to take flexible roles, integrate relevant stakeholders in an appropriate way, and establish an institutional framework that supports effective policy implementation [*policy approach*]. This means, for instance, that *governments should be flexible and adjust their role* to the different situations in an iterative process of sustainable consumption policy formulation and implementation. Governmental actors should be able to wear the 'hats' of regulator and facilitator. Sustainable consumption policy will also benefit from being embedded in an *appropriate institutional framework* which may encompass different elements: setting up measurable policy goals and targets that provide mid- to long-term guidance for the stakeholders involved, achieving commitment at a high political level, creating a legislative basis, or linking sustainable consumption policies to national strategies on sustainable development.

On the [*policy instruments*] layer, our findings call for approaches that are adaptable to changing circumstances. They should address consumption not only as individual (buying) behaviour, but rather as a social process, that refers to the best available evidence and takes environmental *and* social requirements into account. Moreover, it is important to feed in a broader evidence base into policy-making and instrumental design, comprising not only (product-related) environmental data, but also enhanced socio-economic data that shed light upon people's attitudes and behaviours and the 'soft' barriers to change current consumption patterns.

Last, but not least, on the documentation layer [*policy documentation*], sustainable consumption policies will benefit from being monitored against a comprehensive set of criteria, indicate the state of sustainable consumption practises. This will enable a sound assessment and a purposeful re-design of the policy. In addition to that, policy innovations should be disseminated to a larger audience, since, in particular in Europe, experiences with (parts of) sustainable consumption policies are manifold, but highly dispersed. Such kind of knowledge brokerage activities have already been started (see, e.g., the establishment of the European Topic Centre on SCP¹³ or numerous reports on SCP published so far), but should be further intensified to reach a larger audience of (climate-)policy makers. We also recommend starting a European policy makers' network on sustainable consumption, similar to, or as a further development of, the formal policy network on Integrated Product Policy (IPP).

The different layers depicted are interrelated. What happens on one layer may have repercussions on another layer. For instance, monitoring might induce a change in the design of policy instruments, new evidence on the nature of consumption might call for other stakeholders to be taken on board, the more careful consideration of social issues might lead to a shift of emphasis among consumption domains, etc.

Concluding, public policies will profit from taking a closer look at the potentials to mitigate the climate impacts caused by the consumption of private households. There are plenty of instruments at hand that – if carefully designed and attuned to each other – will provide a substantial contribution to climate protection policies.

¹³ See <http://scp.eionet.europa.eu/> (accessed April 29, 2009).

6 Literature

- Berg, A. (2006). Innovative Governance or Outsourcing Politics? Discussing European forerunner cases of sustainable consumption and production. *New Delhi: Paper presented at the Ninth Biennial Conference of "Ecological Sustainability and Human Well-being" 16-18 December 2006.*
- BMU, & UBA (2008). *Klimaschutz und Ressourceneffizienz. Herausforderungen und Marktchancen für die Informationswirtschaft und Telekommunikation.* Dessau: Umweltbundesamt. Retrieved from: <http://www.umweltbundesamt.de/uba-info-presse/2008/pdf/pd08-010.pdf>.
- Council of the European Union (2006). *Renewed EU sustainable development strategy.* Brussels. Retrieved from: http://ec.europa.eu/sustainable/docs/renewed_eu_sds_en.pdf.
- Dawkins, J., Young, D., & Collao, K (2007). *Public Understanding of sustainable finance and investment: A report to the Department for Environment, Food and Rural Affairs.* Retrieved from: http://randd.defra.gov.uk/Document.aspx?Document=EV02025_6699_FRP.pdf.
- Defra (2008). *A Framework for Pro-Environmental Behaviours. Report.* London: Defra. Retrieved from: <http://www.Defra.gov.uk/evidence/social/behaviour/pdf/behaviours-jan08-report.pdf>.
- European Environment Agency (2005). *Household consumption and the environment.* Copenhagen: EEA Report No 11/2005.
- European Commission (2003). *Communication from the Commission to the Council and the European Parliament. Integrated Product Policy: Building on Environmental Life-Cycle Thinking (COM (2003) 302 final).* Brussels. Retrieved from: http://eur-lex.europa.eu/LexUriServ/site/en/com/2003/com2003_0302en01.pdf.
- European Commission (2004). *Sustainable consumption and production in the European Union.* Luxembourg: Office for Official Publications of the European Communities. Retrieved from: http://ec.europa.eu/environment/wssd/documents/scp_eu.pdf.
- European Commission (2007). *Background document to the consultation on the action plans on sustainable consumption and production and sustainable industrial policy.* Brussels. Retrieved from: <http://ec.europa.eu/enterprise/environment/sip.pdf>.
- European Commission (2008a). *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the Sustainable Consumption and Production and Sustainable Industrial Policy Action Plan (SEC (2008) 2111).* Brussels. Retrieved from: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52008DC0397:EN:NOT>.
- European Commission (2008b). *Attitudes of European citizens towards the environment.* Brussels: Special Eurobarometer 295. Retrieved from: http://ec.europa.eu/public_opinion/archives/ebs/ebs_295_en.pdf.
- Eurosif (2006). *European SRI study 2006.* Paris: European Social Investment Forum. Retrieved from: http://www.eurosif.org/content/download/580/3548/version/1/file/Eurosif_SRIStudy_2006_complete.pdf.
- Garcia, R., & Calantone, R. (2002). A critical look at technological innovation typology and innovativeness terminology: a literature review. *Journal of Product Innovation Management*, 19 (2), 110-132.
- GTZ, CSCP, & Wuppertal Institute. *Policy Instruments for Resource Efficiency. Towards Sustainable Consumption and Production.* Eschborn: Gesellschaft für Technische Zusammenarbeit. Retrieved from: <http://www.gtz.de/de/dokumente/en-eco-efficiency-policy-instruments.pdf>.
- Héritier, A., & Lehmkuhl, D. (2008). Introduction: The Shadow of Hierarchy and New Modes of Governance. *Journal of Public Policy*, 28 (1), 1-17.
- Hertwich, E. (2005). Consumption and the Rebound Effect. An Industrial Ecology Perspective. *Journal of Industrial Ecology* 2005, 9 (1-2), 85-98.
- NCC (2006). *Greening Supermarkets. How Supermarkets Can Help Make Greener Shopping Easier.* London: National Consumer Council . Retrieved from: <http://www.ncc.org.uk>.
- Nordic Council of Ministers (2004). *Sustainable Development – New Bearings for the Nordic Countries.* Copenhagen: anp 2004:782. Retrieved from: <http://www.norden.org/pub/ovrigt/baeredygtig/uk/ANP2004782.pdf>.
- OECD (2008). *Promoting Sustainable Consumption. Good Practises in OECD Countries.* Paris: Organisation for Economic Cooperation and Development. Retrieved from: <http://www.oecd.org/dataoecd/1/59/40317373.pdf>.
- Oosterhuis, F., Rubik, F. & Scholl G. (1996). *Product Policy in Europe: New Environmental Perspectives.* Dordrecht: Kluwer Academic Publishers.
- Rubik, F. (2006). Policy Profile: Integrated Product Policy – Between Conceptual and Instrumental Approaches in Europe. *European Environment*, 16, 307-320.
- Rubik, F., Scholl, G., Biedenkopf, K., Kalimo, H., Mohaupt, F., Söbech, Ó. et al. (2009). *Innovative Approaches in European Sustainable Consumption Policies.* Retrieved from: http://www.ioew.de/home/downloaddateien/IOEW-SR_192_Approaches_Sustainable_Consumption.pdf.
- Sarasin (2006). *Buying into Sustainability. Environmental and Social Challenges in Trading, Distribution and Retailing.* Basel. Retrieved from:

- http://www.sarasin.ch/internet/iech/en/index_iech/institutional_clients_iech/institutional_clients_institutional_investors_iech/institutional_clients_sustainable_investments_iech/institutional_clients_publications_sustainability_iech/sr_trade_and_retail_2006_iech.pdf.
- Scharpf, F. W. (1993). Positive und negative Koordination in Verhandlungssystemen. In A. Héritier (Ed.), *Policy-Analyse* (PVS-Sonderheft 24) (pp. 57-83). Opladen: Westdeutscher Verlag.
- Scholtens, B. (2005). What Drives Socially Responsible Investment? The Case of the Netherlands. *Sustainable Development*, 13, 129-137.
- SDC, & NCC (2006). *I will if you will. Towards sustainable consumption*. London: Sustainable Development Commission. Retrieved from: http://www.sd-commission.org.uk/publications/downloads/I_Will_If_You_Will.pdf.
- Szlezak J. (2007). *National Sustainable Consumption and Production (SCP) Strategies in the EU*. Budapest: European Topic Centre on Resource and Waste Management. Retrieved from: http://reports.eea.europa.eu/technical_report_2008_1/en/Time_for_action-towards_sustainable_consumption_and_production_in_Europe.pdf.
- Tukker, A., Emmert, S., Charter, M., Vezzoli, C., Sto, E., Andersen, M.M. et al. (2007). Fostering change to sustainable consumption and production: an evidence based view'. *Journal of Cleaner Production*, 16 (11), 1218-1225.
- UNDESA, & UNEP (2008). *Proposed input o CSD on a 10 year framework of program on sustainable consumption and production (10YFP on SCP)*. Retrieved from: <http://esa.un.org/marrakechprocess/pdf/10YFPFirstDraft.pdf>.
- UNEP (2002). *Sustainable Consumption. A Global Status Report*. Nairobi: United Nations Environment Programme.
- UNEP (2005). *Mediterranean Strategy for Sustainable Development*. Rome: United Nations Environment Programme. Retrieved from: http://www.planbleu.org/publications/smdd_uk.pdf.
- UNEP (2008). *Planning for Change Guidelines for National Programmes on Sustainable Consumption and Production*. Paris: United Nations Environment Programme. Retrieved from: <http://www.unep.fr/shared/publications/pdf/DTIx1028xPA-Planning4change.pdf>.