

# Effects and success factors of sustainable consumption policy instruments: a comparative assessment across Europe

Franziska Wolff (OEKO)

Norma Schönherr (OEKO)

With contributions from K. Aalto (NCRC), A. Alcantud (ECOI), I. Aleksejeva (BEF), I. Bremere (BEF), C. Brunn (OEKO), E. Heiskanen (NCRC), D. Indriksone (BEF), D. Leung (UCL), and D. Mazo (ECOI).

Berlin, June 2011.



## Content

1	Introduction .....	3
2	Analytic framework and methods.....	4
3	The instruments and their effects .....	6
3.1	Overview of the selected policy instruments.....	6
3.2	Assessing policy output, outcome and impact.....	8
4	Explaining instrument effects.....	13
4.1	A valid intervention logic .....	13
4.2	Accommodation of consumer needs and practices .....	17
4.3	Targeting of consumer behaviour and framework conditions of consumption .....	20
4.4	Stakeholder involvement.....	22
4.5	Policy interaction .....	25
4.6	Market context.....	27
4.7	Other factors.....	29
5	Conclusions .....	30
6	References.....	33

## 1 Introduction

This paper summarises and synthesises the results of ten case studies on the effects, effectiveness and success factors of sustainable consumption (SC) instruments implemented within the EU. The case studies were carried out in 2010 within the research project “European Policies to Promote Sustainable Consumption Patterns” (EUPOPP).<sup>1</sup> They cover policy instruments that seek to promote sustainable consumption in the need areas of ‘housing’ and ‘food’, put into practice in Finland, Germany, Latvia, Spain, and the UK.

By sustainable consumption we mean a more ecologically but also socially premised way of buying, using, and disposing of goods and services. We regard SC to be tightly interlinked with production patterns and technological evolutions. SC policy instruments we understand to be the set of techniques of governance by which institutional actors support and effect social change towards a defined goal (Bemelmans-Videc et al. 2007: 3-4), in our case sustainable consumption. Such instruments usually “involve the utilization of state authority or its conscious limitation” (Howlett 2005: 31). Our interest here lies with policy measures that target the demand side or product policy. We thus focus on policies that directly and purposively influence what products and services people can or do buy and how they use and dispose of the good or service towards more sustainability.

While policy measures to promote sustainable consumption can be found in many policy fields, our focus is on the need areas of housing and food. These have particularly pronounced environmental implications in the EU-27 (EEA 2005 and 2007). Also, in the case of sustainable food policy there is still a great research desideratum – due, among others, to the little developed state of public policies and methodological problems. Research on sustainable food consumption policies can hence ‘learn’ – to a certain extent – from research and policy experiences in the much more mature field of sustainable housing.

In the following, we first introduce ten policy instruments implemented in EU Member States as well as their effects, including side effects, on consumption patterns (instrument ‘outcomes’) and on selected sustainability indicators (instrument ‘impacts’). In order to causally link the policy instruments to changes in consumption patterns and sustainability impacts, the case studies combined qualitative and quantitative methods. These included narrative reconstruction, expert interviews, focus groups, statistical analysis, and in some cases (where data was conclusive) an indicative material flow analysis.

We then elaborate on the factors that have fostered the generation of the described instrument effects or have hampered the creation of greater effects, respectively. We analyse these success and failure factors by discussing the case study findings against a set of deductively developed propositions (Wolff and Schönherr 2011). The hypotheses are rooted mainly in the policy evaluation literature and the sociology of consumption. They address the role of various factors for fostering or hampering instrument effects, among others instrument design and implementation, stakeholder involvement, consumer needs and practices, policy interaction, and framework conditions of consumption, including the market context.

We show how the design and “intervention logic” of SC instruments, the political process of their development, their implementation (including within policy mixes), and various socioeconomic and institutional context factors affect consumption patterns. Hence, our findings contribute to better understanding the conditions under which public policy instruments can steer consumer behaviour towards sustainability. Ultimately, we hope that our results can inform policy-making in the area of sustainable consumption.

---

<sup>1</sup> [www.eupopp.net](http://www.eupopp.net); funded within the EU's 7th Framework Programme (2008-2011), Grant Agreement No. 212236.

## 2 Analytic framework and methods

We categorise the effects of SC policy instruments as identified in the EUPOPP case studies in an established manner distinguishing between policy output, outcome and impact (Prittwitz 2001; Skjarseth and Wettestad 2009; Vedung 2004).

“*Policy outputs*” are the laws, regulations, programmes, schemes and implementation measures that constitute the policy instrument as such. Sustainable consumption can be targeted more or less directly. Some instruments focus on individual consumer behaviour, such as grants for particular types of energy-efficient investments, or labels on certain preferable products. Others influence consumption more indirectly, for example via fiscal policies that aim to change the relative prices of various commodities, or via urban planning policies that create favourable infrastructures for certain types of behaviour. Such policies aim to influence the broader *framework conditions* of consumption. We examine both types of instruments on their merits.

“*Policy outcomes*” are the changes in consumption patterns resulting from outputs. These can take the form of changes in individual consumer behaviour or in the framework conditions of consumption. It is noteworthy that an instrument is likely to trigger a whole series of successive and interlinked outcomes. Changes in consumption patterns typically entail changes in related production systems.

Finally, by “*policy impacts*” we mean the sustainability effects – positive changes in the environment, economy and society – resulting (directly or indirectly)<sup>2</sup> from policy outcomes (for a more detailed account of SC policy effects, cf. Wolff and Schönherr 2011).

In the case studies, the effects of SC instrument were analysed and assessed with a variety of qualitative and quantitative methods. All instruments were evaluated by means of narrative analysis based on process tracing and causal reconstruction, expert interviews (with 7-10 interviewees per case study), focus groups (one or two in each case study) with six to ten participants each, and statistical analysis. In addition, some of the instrument assessments included a stakeholder roundtable, employed surveying techniques, and (where data was conclusive) were subject to indicative screenings using material flow analysis data<sup>3</sup>.

On the basis of these methods, the assessment of instrument effects followed an (ideal-typical) scheme (Wolff and Schönherr 2009). Firstly, the intended outcomes and impacts of an instrument were compared with the stated instrument goals. Goal attainment can be assessed by linking the initial situation, the measurement of effects and the ‘distance’ to the policy goal. If there was more than one stated goal per instrument, attainment of the different goals needs to be assessed individually and jointly (possibly, one goal is fully attained, another partly, and a third one not at all). Practical difficulties arose in some cases when policy goals were only qualitative and rather vague, or when they were specified at impact level while the assessment only resulted in findings at outcome-level. More generally, the assessment of formal goal attainment suffers from two flaws: an assessment may have very positive (or respectively, negative) results merely because the goals were very unambitious (or respectively, unrealistically high); and focussing on goal attainment easily obscures *unintended* effects of interventions. As a second step in the assessment, evaluators therefore should discuss whether the stated policy goals were sufficient (or rather “unworthy”, Stufflebeam 2001). For instance,

---

<sup>2</sup> For instance, when increased demand for energy-efficient products ultimately reduces primary energy demand and GHG emissions, it is a case of direct causation. There are indications that SC policy instruments can also trigger indirect effects, e.g., when labels accelerate the development and mainstreaming of BAT appliances via operating as unofficial energy efficiency benchmarks for the sector.

<sup>3</sup> for the years 2000 and 2005 for the EU or, when missing, for Germany.

was a policy goal set at European level really ambitious for the Member State in question: did it indeed require substantial changes in consumer behaviour in the country?<sup>4</sup> In a third step, the assessment took into consideration whether and how unintended outcomes and impacts affected the instrument goals.<sup>5</sup> Finally and accounting for all previous steps, aggregate judgements were made on the extent of instrument effects, differentiating between high, medium and low (cf. Table 1 and 2).

While we were striving for transparency, these assessments remain the view of the evaluator. We would like to underline that we assessed instruments in their own right rather than comparing an instrument's effects with the effects of other instruments. That is, the statement that Instrument A has produced high levels of effects does not mean that in absolute terms it has yielded more e.g. GHG reductions than Instrument B with an e.g. medium level of success. When presenting the assessment results below, we will use the outcome (rather than impact) level as a proxy which reflects the "direction of change" of impacts. This is because "back-casting" to conclusively attribute impacts requires intense calibration of an adequate baseline, and considerations of possible system changes on the supply-side.

The comparative analysis of the case studies started from a set of hypotheses (Wolff and Schönherr 2011) on success factors of and barriers to SC policy instruments. These were developed on the basis of the EUPOPP project's conceptual framework (Heiskanen and Schönherr 2009). They are rooted, above all, in the policy evaluation literature and the sociology of consumption. Our hypotheses address the role of various factors for fostering or hampering instrument effects, among others instrument design and implementation, stakeholder involvement, consumer needs and practices, policy interaction, and framework conditions of consumption including the market context.

Using such a deductive approach with pre-defined hypotheses means that we were able to root our research in existing theory on policy effectiveness and consumer behaviour. It also allowed us to focus our attention on selected explanatory factors which could then be contrasted across the various case studies. On this basis, we aimed at inferring more general statements about the conditions of success and failure of SC policy instruments. Since the small number of ten case studies does not allow for statistical 'testing' of the hypotheses ('small-n problem'), we used pattern matching as the analytical approach to appraise the hypotheses (Yin 1994; Hak and Dul 2009).

We considered a hypothesis to be confirmed by case study evidence in two ways: in a positive way, when it could be plausibly argued that the existence of the hypothesised success factor contributed positively to the instrument's effects; and in a negative fashion, when it could be plausibly argued (on the basis of counterfactual reasoning) that the absence of the hypothesised success factor led to a lower level of instrument effects than could have otherwise be achieved (cf. Fearon 1991). We considered a hypothesis to be rejected when the hypothesised success factor could be plausibly assumed not to have positively contributed to the instrument's effects (cf. Connell, Kubisch, Schorr & Weiß 1995: 82ff.; Dunn 1990, 1994: 97). Not all case studies were suited for examining all hypotheses, and in some instances evidence was inconclusive, so that no decision could be taken on whether a proposition was confirmed or rejected.

---

<sup>4</sup> Let us take the example of implementing the EU Directive on Waste Electric and Electronic Equipment (WEEE Directive) in Germany. The Directive's target of reaching a collection target of 4kg/head/year of 'WEEE' wastes is ambitious for the EU average but low for Germany. With comparatively efficient collection systems having been in place for years, the 4kg-target had already been reached prior to the instrument's implementation. Similarly, a 10% increase (attributable to instrument) in the market share of A-labelled appliances might be a great success in some countries (that have already reached an absolutely high level of market penetration of A-labelled appliances), but might constitute a comparatively poor result in other countries (that have started from a low baseline).

<sup>5</sup> Side effects may either contribute (more or less accidentally) to goal attainment; they may be neutral; or they may affect the instrument's goals in a negative way (e.g., as rebound effects).

### 3 The instruments and their effects

#### 3.1 Overview of the selected policy instruments

In terms of policy output, the case studies analysed ten European SC instruments which are summarised and classified in the tables below. In the need area of sustainable housing (Table 1), the instruments comprise:

- The UK Carbon Emissions Reduction Target (CERT) programme
- Minimum energy performance standards for buildings in Germany (contained in the Energy Savings Ordinance)
- The Energy and Environmental Expert scheme in Finland
- The individual heat consumption metering and charging system in Latvia
- The Catalan water conservation campaign “Install Me!” in Spain

Table 1 Analysed SC instruments (policy output) in the need area of “housing”

	UK	Germany	Finland	Latvia	Spain
Instrument (policy output)	Carbon Emissions Reduction Target (CERT): energy efficiency obligation for electricity and gas sector (2008-2012)	Mandatory energy efficiency standards for buildings (2009)	Energy and Environmental Expert scheme: voluntary peer-to-peer advice in the private housing sector (1995)	Individual heat metering and charging of multi-dwelling residential housing (1995)	Catalan water conservation campaign “Install Me!” (2008)
Instrument type	Regulatory instrument	Regulatory instrument	Voluntary procedural instrument	Voluntary procedural instrument	Communicative instrument with a technical support measure
Target dimension	Framework conditions of consumption	Framework conditions of consumption	Consumer behaviour (use practices)	Consumer behaviour (use practices), including technical support measure	Consumer behaviour (use practices), including technical support measure
Goals	To reduce lifetime CO <sub>2</sub> in the UK by 293 Mt by 2012 through energy efficiency measures which energy suppliers are obligated to assist implementing (partly through subsidies) in the private homes of their customers	To reduce the energy demand of buildings (above all for heating) by obligating property owners to build and renovate in energy efficient ways	To reduce energy and resource consumption in apartment blocks	To allow allocation of individual costs for heat, based on the measurement of actual consumption	To reduce household water consumption; to preserve water resources and guarantee households' water supply as long as possible during the drought
Outcome levels	High	Medium	Low to medium	Low	Medium to high
Case study	Leung (2010a)	Brunn (2010)	Heiskanen and Aalto (2010)	Indriksone et al. (2010)	Alcantud and Mazo (2010)

Source: own.

With regard to sustainable food consumption, the instruments analysed comprise (see Table 2):

- A campaign of WWF-UK to reduce the environmental impacts of food consumption, and in particular livestock-related GHG emissions, in the UK
- Public catering provisions, aiming to promote sustainability in public food purchasing, in Finland
- The “Quality product” label of Latvia
- The deposit scheme for environmentally detrimental one-way beverage packaging in Germany
- The organic waste disposal regulation in Catalonia, Spain

Table 2 Analysed SC instruments (policy output) in the need area of “food”

	UK	Finland	Latvia	Germany	Spain
Instrument (policy output)	Report and ‘framework for dialogue’ by WWF-UK and FEC on reducing livestock-related GHG emissions (2009)	Public catering requirements for sustainable meals (2009)	“Quality product” label: national food quality scheme (2001/ 2008)	Deposit system for environmentally detrimental one-way beverage packaging (2006)	Selective collection of organic waste in Catalonia (1993)
Instrument type	Communicative	Economic (public procurement)	Communicative	Economic	Regulatory (vis-à-vis municipalities); voluntary-procedural (vis-à-vis consumers)
Target dimension	Framework conditions of consumption (supply/ retailing)	Framework conditions of consumption (supply)	Consumer behaviour (demand) and framework conditions of consumption (supply)	Consumer behaviour (disposal) and framework conditions (return infrastructures)	Framework conditions of consumption (disposal infrastructures)
Goals	To increase discussion among stakeholders, and to recommend a variety of policy solutions to reduce meat consumption.	To promote sustainable meals via public catering	To promote the manufacturing of quality products from agriculture and food processing and to guarantee the quality of these to consumers by setting requirements beyond those legally prescribed	To increase the share of beverages in reusable packaging or in ecologically advantageous one-way containers by at least 80%, among others through charging purchasers a deposit	To increase organic waste collection and valuation; to reduce the amount of biodegradable waste (organic waste and paper) disposed in landfill
Outcome level	Low	Low (as yet)	Low	Medium	Low to medium
Case study	Leung (2010b)	Aalto and Heiskanen (2010)	Bremere (2010)	Schönherr (2010)	Mazo and Alcantud (2010)

Source: own.

Classifying these policy outputs according to instrument types, this synthesis covers three regulatory (i.e., command-and-control) instruments (two for housing and one for food); two economic (i.e., incentive-based) instruments (both for food); three communicative (information-based) instruments, and two voluntary procedural instruments.<sup>6</sup>

<sup>6</sup> It is noteworthy that the distinction between these instrument types is not always clear-cut.

Three of the instruments primarily target consumer behaviour, partly supported by technical measures. Two instruments jointly address consumer behaviour and the framework conditions of consumption. Of these instruments addressing consumer behaviour in some form, one relates to product demand, three to product use, and one to product disposal. The remaining five instruments do not directly address consumer behaviour, but alter the framework conditions of end consumption, for instance by regulating supplier behaviour or improving the (organisational, distributional, etc.) infrastructures for sustainable consumption.

In terms of instrument effects, four out of ten of the assessed instruments feature low outcome levels and two exhibit low to medium outcome levels. Three of the remaining instruments were assessed to have generated medium outcomes, and only one instrument high outcomes. These better performing instruments are largely regulatory and economic instruments, with the exception of one instrument that combines communication in combination with a technical support measure.

### 3.2 Assessing policy output, outcome and impact

We now proceed to briefly sketch the instruments and summarise their main outcomes and estimated sustainability impacts, as determined in the case studies. For individual instruments, results have been slightly updated vis-à-vis the case studies.

The UK “**Carbon Emissions Reduction Target**” (CERT) programme<sup>7</sup> is a so-called White Certificate scheme. In its present third programme phase (2008-2011) major electricity and gas suppliers are required to reduce lifetime CO<sub>2</sub> emissions by 185 Mt CO<sub>2</sub> by 2011, extended to 293 Mt CO<sub>2</sub> by 2012. The aim is to thus contribute to the UK’s Kyoto target as well as its national goal of cutting GHG emissions by 80% below 1990 levels by 2050.<sup>8</sup> The suppliers are to meet the overall reduction target – which is broken down into supplier-specific, quarterly targets and monitored by the UK energy regulating agency Ofgem – through assisting customers to adopt energy-efficiency measures in their homes, and through partly subsidising these measures. 40% of the supplier activities need to target vulnerable households (including low-income or elderly residents), and these are typically being offered for free. Suppliers can trade obligations and savings through bilateral contracts, but this option has rarely been made use of so far. The outcome level of CERT between 2008 and end of 2010 is rather high and includes: 3.2 million professional insulation measures and 66.3 million square meters of DIY loft insulation; in the area of heating, 63,000 fuel switch measures; with regard to lighting, distribution of some 276 mill. energy saving bulbs (CFLs); some 5,000 microgeneration measures (e.g., heat pumps, solar water heating); and distribution of 1.27 million Real Time Displays (RTDs) in the category of behavioural activities. All six obligated energy suppliers have so far complied with each quarterly target. The instrument’s carbon savings impact at the end of 2010 is estimated by Ofgem at 182 Mt CO<sub>2</sub> (including carry-over from CERT’s predecessor programme EEC II), costing the suppliers an estimated £5.5 bill. The majority of the savings is attributable to insulation (ca. 61%) and lighting measures (26%). The quota for vulnerable households was fulfilled. According to these figures, CERT would be well underway to reaching its 185 Mt reduction target in 2011. However, the actual savings might be lower: the impact estimation is based on the outcome measures, each of which counts towards a certain amount of reduction. This method does not account for the actual changes in consumer behaviour: distributed bulbs may not be used, and savings due to insulation may be

<sup>7</sup> The UK Climate Change Act (2008); the Electricity and Gas (Carbon Emissions Reduction) Order 2008 and the Electricity and Gas (Carbon Emissions Reduction) (Amendments) Order 2009 and Order 2010. The first two programme phases of CERT were called “Energy Efficiency Commitment (EEC) I + II”.

<sup>8</sup> UK Climate Change Act 2008.

overcompensated for by the greater use of heat (rebound effects), e.g. because fuel-poor people might now afford to heat their flat to the individual comfort level (Leung 2010a).

The German Energy Savings Ordinance (EnEV) 2009 is a set of **mandatory energy efficiency standards for buildings** that need to be complied with when buildings are constructed or refurbished.<sup>9</sup> The Ordinance strives to reduce the energy demand of buildings (above all for heating) by obligating property owners to build and renovate in energy efficient ways. The level of minimum energy performance standards shall be increased by 30% compared to the previous version of the ordinance. The policy outcomes we were interested in relate to (new and existing) residential buildings. Firstly, the EnEV performance standards are successfully implemented (and often exceeded) in new buildings, which make up less than 1% of the total living space in Germany. Secondly, the annual rate of energetic renovations in the existing building stock is estimated to be at 1-1.5%. A governmental target to increase the rate of energetic renovations to 3% was hence not reached and, *ceteris paribus*, is unlikely to be reached in future. In summary, instrument outcomes can be assessed to be medium. Statistical analysis and causal reconstruction suggest that in the cases where houses were energetically renovated, the increase in fuel efficiency of households and the subsequently reduced consumption of heating energy resulted in an estimated 3.1 bill. kWh annual reduction of total household final energy consumption – representing approximately 25% of total household final energy consumption reductions. In terms of impact, it can be reasonably assumed that these outcomes have contributed to the reduction of GHG emissions from household combustion plants, of total GHG emissions and – as a side effect – of other heating-related pollutants (NOx, particulate matter) that could be observed in Germany in the last decade (Brunn 2010).

The **Finnish Energy and Environmental Expert (EEE) scheme** is a voluntary peer-to-peer advice instrument. Based on the initiative of residents, it was developed by a state-owned energy agency company and a private housing services company. Implementation started in 1995. The goal is to train volunteering residents (tenants or apartment owners, depending on type of housing) to monitor energy, water, and other environmental issues in their building, to advise other residents, and to serve as a contact point, thus reducing waste, energy and other resources. A primary outcome of the initiative is the training of more than 3,000 expert residents which contributed to an increase in environmental awareness and capacity. In environmental terms, the scheme has had significant effects (5-20%) in individual cases on water use, heating energy use, and electricity consumption for common building facilities. Moreover, EEE has been observed to reduce waste. However, due to the great variation in the implementation of this voluntary instrument, these effects are not observable across the board. As an initiative operating almost entirely on private resources and being poorly monitored, the EEE scheme has achieved some significant successes. One of these is that it has persisted since 1995. The instrument's overall outcome level can be assessed to be low to medium. Its total annual (GHG) impact is estimated at a reduction of 1,327 t CO<sub>2</sub>. In comparison to the total annual CO<sub>2</sub> emissions of Finland – some 70 mill. t – this is a fairly limited impact, but the potential exists for much greater GHG reductions if more resources were invested in the scheme (Heiskanen and Aalto 2010).

The **individual heat consumption metering and charging system in Latvia**<sup>10</sup> allows energy end users (in particular in multi-dwelling residential housing with centralized district heat supply) to pay for the heat energy used by individual households based a on the measurement of actual consumption.

---

<sup>9</sup> Energieeinsparverordnung (EnEV) 2009

<sup>10</sup> Cabinet of Ministers Regulations No. 41 (1995) and No. 876 (2008) "On heat supply and usage".

The outcome level is low: between 1996 and 2006, the share of households<sup>11</sup> with individual metering has grown from 0% to only 1.06%, mainly in the context of pilot projects. A pilot project in Riga indicates that savings of heat energy exclusively attributable to metering can amount to 15%. At national scale, however, due to the low levels of implementation, the resulting environmental impact (above all, with regard to GHG emissions) is estimated to be negligible. At household level, the social impact of heat metering, as indicated by focus groups, was positive: heating costs sank while the heating comfort increased due to the possibility to adapt the heat level to individual needs (Indriksone et al. 2010).

The **Catalan Water Conservation Campaign “Install Me!”**<sup>12</sup> was implemented in 2008 during one of the worst drought periods experienced in Catalonia. It aimed at reducing household water consumption in order to preserve the water resources and guarantee household water supply as long as possible. The campaign involved awareness raising and the free distribution of 1.2 mill. water flow restrictors for taps (via newspapers, city councils, schools, and partly door-to-door). The level of its outcomes is evaluated to be medium to high. A survey by the regional water agency indicates that 91% of the (over 600) respondents considered the free distribution of water flow restrictors to have contributed to raising awareness on water scarcity and water saving. 61% of the respondents installed at least one, and 47% two of the distributed water flow restrictors, resulting in installation rates above the Spanish average. The campaign – combined, however, with the acuteness of the drought and embedded in further measures (including increased water prices) – is also likely to have triggered the realisation of additional water saving practices (in 94.1% households). With regard to environmental impact, water savings in Catalonia amounted to around 20% during the worst drought period. While it is methodologically difficult to attribute these savings to households (rather than to industry etc.) and hence to the campaign, it seems plausible that the campaign caused at least those water savings induced by the installation of free water devices – an estimated 6.5 to 8 mill. m<sup>3</sup> of water were saved per year, i.e., 65-80% of the water reduction of Catalan households in 2008 (Mazo and Alcantud 2010).

Looking at the food consumption instruments, the **report** by WWF-UK and the Food Ethics Council (FEC) on **‘Livestock Consumption and Climate Change’** (MacMillan and Durrant 2009) is at the core of a wider sustainable food campaign of WWF-UK. The report aims at intensifying the debate about livestock consumption by providing a ‘framework for dialogue’. It was developed jointly with different stakeholders, in particular through a roundtable meeting with government officials and the meat industry, and follow-up discussions. As policy instrument, the report has a ‘double nature’ in that itself is a communicative instrument but contains a list of policy suggestions for regulatory, economic, communicative or voluntary instruments to cut meat and dairy related emissions. The instrument’s outcomes are relatively low. While different societal groups, business interests and public bodies have taken note of report, it has not triggered a noticeable intensification of the debate on climate-related food issues that has been ongoing in the British public for some time. Reactions to the report were mixed. This, however, was due to the contentious implications of the entire topic (e.g., ‘Do we need to eat less meat?’). Many NGOs and policy-makers share the report’s assumption that policy changes are required to reduce livestock-related GHG emissions, and some of the meat-interest groups in the UK are willing to engage in the dialogue. Other industry groups, however, question the need to change or reduce livestock consumption, partly by negating a negative GHG balance of the livestock sector. Whether the report will contribute to policy changes will depend not only on governmental activity but

---

<sup>11</sup> In areas with centralized district heat supply

<sup>12</sup> Motion 21/VIII of Catalan Parliament (linked with Catalan Decree of Drought 84/2007).

on industry cooperation – e.g., with regard to the marketing-related policies suggested in the report. As regards consumers, focus group results point towards a certain level of problem awareness, but a low willingness to change meat or dairy consumption habits beyond ‘buying locally’ and reducing health risks. No assessment can be made in terms of the sustainability impacts directly or indirectly<sup>13</sup> resulting from the report. However, it is clear that rebound effects and carbon leakage can limit environmental effects of respective policy measures and of behavioural changes. Also, the potential offshoring of production can worsen the economic situation of the agricultural sector if it is not absorbed by income from measures such as promoting ‘less but better’ (premium) products (Leung 2010b).

The **Finnish public catering provisions** aim to promote sustainability in public food purchasing, thus setting an example for private food service providers and end consumers.<sup>14</sup> It is noteworthy that the idea of changing eating patterns via public catering is far from mainstream in Europe and, indeed, the concept of ‘public catering’ is not familiar in all European countries. The Finnish provisions from 2009 require public catering providers (i.e., food service providers catering for ministries, the armed forces, prisons) to serve more sustainable meals – from 2010 on once and from 2015 on twice a week. Sustainable meals may be vegetarian, organic and/or seasonal. Targets also exist for accompanying measures, such as increasing the capacity of food service providers through advice and training. The requirements are binding for the state administration, but there are also recommendations for municipalities as the largest provider of public food services. The implementation started slowly and at the point of analysis, many measures were still in preparation. Outcomes are hence (still) limited. A training centre supports organisational change with public catering providers. Various cities have increased the amount and options of vegetarian meals and some make greater use of organic or seasonal food. Among others, the City of Helsinki introduced a vegetarian day each week as of January 2011. This measure triggered a lively public debate on the substitution of meat with vegetables, which is apt to increase the generally rather low levels of problem awareness. An unintended side-effect may be the scheme’s influence on the development of a label for “low-carbon lunch alternatives” by a private restaurant chain that caters to many state agencies. Altogether, Aalto and Heiskanen (2010) expect the instrument to have a significant potential to alter eating habits and hence cause sustainability impacts in the long run if implemented effectively.

The **Latvian “Quality product” label** (dubbed the “Green spoon”) certifies food products that contain at least 75% raw materials cultivated in any one country or region of the EU (e.g., Latvia).<sup>15</sup> The scheme – introduced in 2001, revised in 2008 and administered since then by the agricultural ministry – aims at promoting the national production of high-quality agricultural and food products and at certifying the quality of these products to consumers. Certification criteria include, apart from the 75% threshold, requirements regarding food quality and safety, traceability and documentation requirements. Though no organic food label as such, the trademark addresses sustainable food consumption by promoting integrated farming of vegetables, potatoes, fruit and berries, regional production and consumption cycles. The main outcome of the instrument with relevance to the framework conditions of consumption – specifically, the availability of labelled products on the market – is rather low: the number of labelled products peaked in January 2008 (with 219 products) but since then dropped by 50% (to 108 products from ca. 35 producers). The labelled products encompass

---

<sup>13</sup> Via future policies possibly triggered by the report and changes in eating habits resulting from these.

<sup>14</sup> Council of State Decision of Principle on Promoting Sustainability in Public Purchasing, Finland.

<sup>15</sup> Latvian Cabinet of Ministers Regulation Nr. 663 (2008). Initially, 75% of the raw materials indeed needed to originate from Latvia. However, since this might have been challenged under Community law the scope was widened in 2008 to any one country or region of the EU. It can still be assumed that mostly Latvian producers will make use of the label, so that the label indirectly keeps promoting national food production and agricultural development.

above all vegetables and milk products whereas no meat products are certified. Selective evidence exists that the sales volume of individual products has increased after awarding of the label.<sup>16</sup> Surveys from 2009 suggest that outcomes with regard to consumer behaviour fare better: the recognition of the label by consumers is relatively high (79%) as is the trust in the label (60%). Despite the reasonably high share of consumers (ca. 44%) that declare a preference for labelled products in shops, only 2-9% of consumers said they specifically bought products labelled with the “Quality product” trademark (between 2005 and 2008). Sustainability impacts are difficult to specify, but the shifting to regional food production (or rather detaining the shift to globalised production) and integrated farming can contribute to a reduction of GHG and pollutant emissions – though only marginally, due to the low outcome levels. As regards social impacts, no data exists on potential distributional effects of the label on the income and living standards of local farmers and food producers (Bremere 2010).

The **German deposit scheme for environmentally detrimental one-way beverage packaging** is a economic instrument<sup>17</sup> that encourages consumers to return beverage packaging to retailers by means of a deposit of at least 0.25€ on most beverage packaging types considered environmentally unfavourable<sup>18</sup>. Since the instrument’s entry into force in 2006, retailers are obliged to participate in a nation-wide deposit system which ensures the appropriate recycling of beverage packaging. The instrument’s stated goals are to avoid or reduce the environmental impact of packaging waste, and to increase the market share of reusable beverage packaging or of environmentally favourable one-way beverage packaging to 80%. The deposit was introduced after the initial voluntary target quota for reusable containers had not been reached. The instrument’s outcome level is medium: while the deposit failed to reach its main objective – the stabilization of sales of environmentally preferable beverage containers at 80% of the market share in the covered market segments –, it has led to better disposal of PET<sup>19</sup> and one-way packaging and has reduced the use of tin cans. It is also a success in the sense that it triggered the establishment of an effective and coordinated recovery and recycling system for PET and other resources with return rates of more than 95% of all sold packaging covered by the deposit and an enhanced quality of the collected secondary raw materials. Moreover, improvements of energy and resource efficiency in the life cycle of both one-way and reusable packaging types that are visible in recent LCA studies are likely to have been caused – at least to some extent – by the deposit (Schönherr 2010).

The **organic waste disposal regulation in Catalonia, Spain**, aims to increase the amount of organic waste collected separately and to reduce the amount of organic waste disposed in landfills, in order to ultimately mitigate environmental impacts<sup>20</sup> from the landfilling of waste.<sup>21</sup> Introduced in 1993, the instrument requires municipalities to enable waste separation and to fulfil quantitative waste collection targets at local level. It thus provides the framework conditions for consumers – but does not oblige them – to separate household wastes. Though technically a regulatory instrument (supported by economic incentives)<sup>22</sup> addressed towards municipalities, it works as a voluntary procedural

<sup>16</sup> In the case of ‘Genuine Dark Rye Bread’, for instance, sales increased by 15% in the two years following the certification.

<sup>17</sup> German Packaging Ordinance (Verpackungsverordnung), 2009.

<sup>18</sup> in the following market segments: (a) water and carbonised soft drinks (CSD); (b) beer and beverages containing beer; (c) alcopops (alcoholic mix beverages, since 2006).

<sup>19</sup> polyethylene terephthalate

<sup>20</sup> E.g., on water, air (including GHG emissions), soil, flora and fauna.

<sup>21</sup> Catalanian Waste Law 6/93 (amended by 15/2003 and 8/2008 Waste Laws) in combination with the Law for waste treatment infrastructure financing and the waste disposal tax 16/2003 and 9/2008, Catalonia’s Municipal Waste Management Programmes (PROGREMIC) between 1995 and 2012, municipal bylaws and waste management programmes.

<sup>22</sup> See the Law for waste treatment infrastructure financing and the waste disposal tax 16/2003 and 9/2008.

instrument vis-à-vis consumers. The aggregate instrument outcomes are low to medium: by the end of 2009, 63% of Catalan municipalities had established a (fully-fledged or at least partial) system for the separate collection of organic waste. This falls short of the ambitious target that 100% of the obligated communities should have a system implemented by 1999. Since the remaining municipalities will need to pay a tax (penalty) of 10€ per tonne of disposed waste as of 2010 and at the same time can receive subsidies for the implementation, it is to be expected that these will soon establish the respective systems, enabling the whole population to dispose of their organic waste separately. So far, the vast majority of municipal systems use the street-bin collection as opposed to the door-to-door collection method (which is more effective, since less waste gets wrongly sorted). Resulting from these improvements in the framework conditions of consumption, the volume of separated organic waste has increased slowly since the start of the implementation in 1996 (to 20.5% or 316,000t in 2008)<sup>23</sup> while the fraction of wrongly-sorted waste has sunk (to 16.2% in 2008). However, none of the quantitative targets specified in the succeeding management programmes have yet been achieved (e.g., to collect 55% of organic waste separately until 2006 and only 15% of wrongly-sorted waste until 2012). With regard to the environmental impact resulting from the achieved reduction of organic waste in landfills improvements in the ecological quality of air, soil, flora and fauna, noise and odour nuisance can be assumed (Mazo and Alcantud 2010).

## 4 Explaining instrument effects

How can we explain the described instrument effects? The following factors were hypothesised to influence the achievement of outcomes and impacts:

### *Box 8: Factors influencing the achievement of SC instrument effects*

- H1: A valid intervention logic underlying the instrument
- H2: Accommodation of consumers' needs and practices in instrument design
- H3: Consideration of the framework conditions of consumption in instrument design
- H4: Involvement of stakeholders in instrument development and implementation
- H5: Synergetic interaction with other policies
- H6: A favourable market context
- H7: Further factors

Note that we do not consider these factors promoting or hampering instrument effects (for short: success factors and barriers) to be mutually exclusive and that we do not try to make a decision between them. We assume that several factors – and possibly additional ones which we have not explicitly listed (see Hypothesis H7) – can play a role.

In the following, we present the hypotheses on how the above parameters influence instrument effects (see extended version in Wolff and Schönherr 2009), and the respective case study findings.

### 4.1 A valid intervention logic

Our first hypothesis was that *the scale (i.e., scope and depth) of effects resulting from a sustainable consumption instrument increases with the formal validity of the instruments' intervention logic*. By intervention logic, we mean an 'ideal' causal story of how the instrument is intended to work. The

---

<sup>23</sup> These figures, however, relate to households *plus* industry and businesses.

validity of an SC instrument's intervention logic, in our understanding comprises at least three dimensions: *Firstly, the central concepts on which the instrument is based are clear and non-contradictory.* If this is not the case it will be difficult for authorities and target groups to implement the instrument in a stringent way. Ultimately, this will hamper its effectiveness (Mickwitz 2003; Vedung 2004). *Secondly, the instrument is designed to have a great scope of effects (by targeting many people/many products) and great depth of effects (by aiming for substantial change in the behaviour of target groups).* The larger the target group and set of products, services, and technologies addressed by an instrument, the wider is the potential for instrument effects simply because more people and artefacts are required to change. In a similar – and interrelated – logic, we can assume that an instrument with ambitious goals for behavioural change in the target groups and stringent implementation mechanisms (such as timeframes, monitoring and reporting provisions, review mechanisms, sanctions, etc.) has a greater potential to have effects than an instrument with lax mechanisms. *Thirdly, the causal assumptions on the policy pathway are plausible.* Flawed assumptions regarding causal relations, e.g., the strength of incentives required for consumers to change their behaviour, or lacking consideration of relevant context factors, will reduce the instrument's potential for creating outcomes and impacts (Vedung 2004).

Looking at the case study evidence, we find that most of our instruments have flaws of a minor or major order in their intervention logic. In a significant number of cases, the logic's degree of validity indeed helps explaining the volume of instrument effects, thus confirming the general thrust of Hypothesis 1. In the following summary of the case study evidence, we will limit the plentiful information on the hypothesis to those aspects with a potential to substantially influence instrument effects. We will present the case study results according to the clusters they form with regard to the hypothesis, and within the clusters according to the order in which they were introduced above.

For the instruments with low outcome levels we could identify many valid aspects of intervention rationales, but at least some erroneous aspects, too. For example, the **Latvian individual heat consumption metering and charging system** is based on the plausible assumption that reductions in heating energy presuppose that energy consumption and energy costs can be individually attributed to energy end consumers, and that consumers have an economic interest in reducing their heating costs. However, the instrument rationale has some blind spots regarding the behaviour of the instrument's target group and their specific needs and practices (see Section 4.2). The **Finnish public catering requirements for sustainable meals** are based on credible assumptions as to the market effects and social effects ('example setting') of public procurement. While it is still not clear how large a share of consumers will opt to avoid the public canteens on the vegetarian day, this is not expected to be a major problem. In terms of instrument design, targets exist but are less detailed and ambitious than originally intended. A review foreseen for 2010 was suspended due to a lack of resources. Since the instrument in legal terms is a collection of recommendations, no sanctions can be taken against public sector bodies that do not comply. The not very powerful intervention logic may hence account to some extent for the presently low outcomes of the instrument. The intervention logic of the **Latvian "Quality Product" label** aims at reconciling an added sustainability value for the consumer with price premiums for producers, comparable to the rationale of product labels more generally. Control of the certification procedure and promotion of the label seem to be well taken care of and Latvian consumers state a willingness to consider the label in their purchasing decisions. However, a potential weak spot in the above logic is whether food producers are at all willing to engage with the instrument and perceive the label's returns to cover the (transaction) costs of a certification. This may account to some extent for the fact that the seal is not very much used by Latvian producers. In the case of the **Catalan waste separation regulation**, policy-makers over the years both extended the scope of the instrument (from municipalities with more than 5,000 inhabitants to all municipalities in 2008) and

deepened the sophistication of its intervention logic: Municipal Waste Management Programmes at regional and municipal level were introduced with quantified targets and timelines. In addition, economic as well as communicative tools were developed to increase the incentive for building waste separation infrastructures and thus spurring the transformation. Though some success occurred, the rate of separately collected waste is still rather low so that we conclude that factors other than an erroneous intervention logic impede progress (see in particular Section 4.2). The **UK WWF/FEC report on livestock consumption** intended to create effects through encouraging discussion among policy circles and involving opposed stakeholders in a dialogue. The only flaw in this intervention logic is the low level of instrument institutionalisation: while the aim of triggering a multi-stakeholder debate was achieved, changing perceptions and creating greater acceptance in an industry whose business model is at stake in order to trigger higher outcome levels requires more and deeper measures than two roundtable meetings.

A somewhat special case is the **Finnish Energy and Environmental Expert Scheme**. It is based on the logic that trained peers can help residents in multi-dwelling buildings to save energy and reduce waste by identifying local potentials for resource saving and promoting behavioural, organisational and small technical improvements. It is the only instrument where we could detect no obvious flaws in the general intervention logic. However, in its local implementation the scheme actually reveals a plethora of intervention logics. Every expert is responsible for their respective building – without central monitoring of progress or review mechanisms. Relevant measures of progress need to build on the (remaining) potential for savings which is complicated to determine so that often quantitative targets are rejected or dropped. As a consequence of these aspects, there are no clear operational goals and guidance on what should be done by individual experts and weaknesses exist in stringently upholding the instrument's intervention logic in its implementation. It is this failure in sustaining the instrument's rationale, rather than an invalid rationale as such, which can account for the instrument's comparatively low outcome levels.

Interestingly, not only poorly performing instruments but also all instruments with medium to high outcome levels exhibit at least minor flaws in their intervention logics. For example, the rationale of both the **UK energy supplier obligation programme "CERT"** and the **Catalan "Install me!" campaign** with its free distribution of water flow restrictors feature non-contradictory concepts and goals, address the consumption patterns of wide audiences, operate with rather straightforward causal assumptions, and in addition CERT is embedded into a framework of quantitative targets, timelines and monitoring provisions. These factors certainly contribute to the instruments' relative successes. However, the mitigation potential of the technical solutions provided by the instruments is not necessarily fully exploited: water flow restrictors or energy saving bulbs may not be installed, and insulation effects may be (even subconsciously) overcompensated by greater use of heat. While according to its rationale, the **German deposit** on environmentally detrimental packaging should level out price differentials with environmentally preferable reusable packaging (that had been subject to deposits already) and eliminate the convenience of just throwing away emptied containers instead of having to return them to the point of sale. This was assumed to lead to a stabilisation or even increase in the sales of beverages with reusable packaging. However, the opposite was the case: other factors important to consumers – including the lighter material and more convenient storage of some kinds of environmentally detrimental packaging – were not considered in the intervention logic. The **German minimum energy performance standards for buildings** are a point in case where the intervention logic is rather profoundly flawed but the instrument still achieves a medium level of outcome: underlying a mandatory instrument with clear and rather ambitious targets and requirements is the philosophy not to interfere too strongly with the habits and previous rights of flat or building owners. This philosophy was asserted by some of the ministries involved in the policy process. As a

consequence, consistent controls and hence sanctions were foregone, a fact that is certainly key to explaining why the instruments' target was not reached. In addition, there are some flawed expectations of how property owners will react to the instrument which have to do with their specific needs and practices and will hence be elaborated in Section 4.2.

In conclusion, the factor "validity of intervention logic" as we defined it is no sharply discriminating factor, which allows to unambiguously differentiate success cases from failures. Rather, both better and poorer performing instruments were shown to have flaws in their rationales. The lack of discrimination may have to do with the fact that we had defined the factor 'instrument rationale' to cover a rather wide array of sub-aspects (which partly overlapped with other factors, e.g. accommodation of consumer needs and practices). While the appraisal of the hypothesis still yielded many crucial insights it would have been easier had we focussed on individual aspects or at least covered different sub-aspects in different hypotheses.

Summarising the findings with regard to the different sub-aspects, the core governance mechanisms – as reflected in the instrument *type* – seem to be linked to instrument performance: the analysed communicative instruments including labels, but also voluntary procedural instruments tended to generate comparatively low outcomes. Regulatory and economic instruments with their more compulsory natures on the whole performed better, and so did a communicative instrument that was combined with a technical support measure. Partly interlinked with the instrument type, the majority of more successful instruments had clear objectives and ambitious, quantified targets the (non-) achievement of which was monitored and credibly sanctioned. Moreover, some of the cases suggested that decentralised instrument implementation led to less consensus on goals and on the causal pathways leading to positive sustainability impacts. Intervention logics seem to be somewhat more 'reliable' when instruments address product demand rather than product use. This may possibly be due to the fact that the act of purchasing (or investing) can be more easily understood than the more complex and habit-driven dynamics of product use practices. Instruments in the need area of housing profited from the greater scope for technical abatement options and end-of-pipe solutions, when compared to sustainable food instruments. They also profited from a clearer understanding of what the goals and central concepts of the instrument were.

This leads us to a final note on the role of clear instrument goals which seems to be more complex than assumed in our hypothesis. It is a matter requiring further thought whether clear, unambiguous goals may not function as a spanner in the works of the genuinely political processes of instrument formation, ultimately undermining instrument effectiveness. "Passage of legislation often requires ambiguous language and contradictory goals to hold together a passing coalition. [...] Attempts to insulate an inherently political subject matter from politics [...] may lead directly to policy failure." (Matland 1995, 148). The clearer and less ambiguous the goals of a SC policy instruments are, the more difficult it might become to agree on the instrument's introduction. This is not to say that weak instruments with low outcome levels should be favoured as the path of least resistance. It is sometimes inevitable, however, that potent policy instruments involve substantive efforts in building coalitions among stakeholders and are preceded by social learning processes. While, in some instances, policy makers will find themselves in such a quagmire, it is important that ambitious policies be regularly brought on the agenda because only those, when put into practice, are apt to effect substantive change, as our findings show.

## 4.2 Accommodation of consumer needs and practices

The second hypothesis also relates to instrument design. We posited that *the scale of effects resulting from a sustainable consumption instrument increases strongly with the degree to which the instrument acknowledges and accommodates the diversity of needs and practices of consumers or of other instrument target groups*. The concept of consumers' "needs and practices" refers to the broad variety of institutionalised activities that are related to consumption (and largely governed by habits and routines, cf. Giddens 1984), such as cooking, shopping, care work, etc.. These activities – which require planning, organizational skills and time (Schultz and Stieß 2008) – tend to vary according to consumers' lifestyles, socio-cultural attitudes, and the social background of household members. If policy instruments do not sufficiently account for consumers' everyday needs and practices, specific groups of consumers might be required to unduly change their consumption practices, resulting in the non-use or circumvention of the instrument (Gronow and Warde 2001; Jackson 2004 and 2005; Schultz and Stieß 2008). We assumed that this would reduce the instrument's outreach and subsequently its scope of effects. On the other hand, SC policy instruments that leave consumers leeway in making use of the instrument and complying with it (e.g., by providing financial support for energy efficiency refurbishment both through a loan or a grant) might fit better to the needs and practices of a greater target group (e.g., depending on the consumers' financial situation, a loan or grant may be more attractive).

The case studies on those instruments that considerably affect consumers' everyday needs and practices (six of the ten instruments) support these reflections, though not always in a straightforward way. Only one of the assessments confirms our proposition in a positive way, i.e., a medium level of outcomes (and impacts) can be causally linked with an instrument design that accounts for consumers' daily needs and practices. The **German deposit scheme for beverage packaging** confirms our hypothesis in various ways: firstly, the high levels of consumer acceptance of the scheme may at least in part be explained by the fact that separating waste and the notion of deposits on beverage packaging were already known before the introduction of the instrument. The scheme thus tied in with existing routines easily, as soon as the returning of one-way bottles was universally and reliably possible. (Interestingly, return rates were low before a centralised take-back system had been established and consumers were forced to bring containers back to exactly the shop where they had bought the drink). Secondly, focus group members perceived the deposit as a positive criterion for purchase, since returning empty containers was perceived to relieve households of bottle waste. Thirdly, remaining problems in the instrument's implementation, to some extent, result from an unclear and unsystematic – hence consumer-unfriendly – definition of what disposable, reusable and deposit bottles are in stores. A lot of people cannot distinguish one-way bottles from reusable bottles and consequently do not consider this factor as a purchasing criteria.

Three case studies confirm our hypothesis in a negative way, i.e., *low* levels of outcomes (and impacts) can be causally linked with a *disregard* of the instrument for specific needs, practices or routines of consumers and other target groups. Brunn (2010) shows how the comparatively low outcome levels of the German **minimum energy performance standards for buildings** are related to their failure to accommodate the needs and practices of property owners. The failure is threefold: firstly, the standards do not sufficiently address the knowledge gap of property owners with regard to their heating energy consumption, potential reductions, resulting financial gains, and even the mandatory character of the energy standards. Secondly, available financial grant programmes that provide long-term and low interest rate credits will ultimately not reduce the high start-up costs of energetic renovations but stretch them over 10-20 years. As a consequence, the instrument is likely not to reach out to certain target groups. These include people hesitant to tie up their money for long

periods of time (e.g., young people that have just invested in buying a house), and people without sufficient own funds who, in Germany, are unlikely to receive bank credits for the renovation (e.g., when they are aged 65 or older). Thirdly, the instrument does not address the investor-consumer dilemma: property owners who lease their buildings have little incentive to invest in energetic renovations from which predominantly the tenants profit (since the energy efficiency of a building at present hardly influences its market value).

While **individual heat consumption metering** in theory accommodates the desire of consumers to save money and at the same time increase their comfort, it is still marginal in Latvia. This can be attributed to the following three practical failures: firstly, Latvian consumers have little information on the amortisation rates of investing in an individual metering system and, hence, do not know how soon they can actually reduce their costs. Secondly, people cannot individually decide on switching the system: in most cases, a consensus is necessary among flat owners in multi-dwelling residential housing (collective action dilemma). And thirdly, in apartment blocks leased to tenants the owners themselves do not profit from individual metering and, consequently, have little incentive to install the devices (principal-agent dilemma). The case study thus confirms our hypothesis on the relation between (lacking) recognition of the needs and practices of consumers/ target groups and (low levels of) instrument outcomes.

The **Catalan waste separation regulations** – which primarily address municipalities – did not specifically take citizens' waste collection habits into consideration. Indeed, consumers' adjustment to the separation of a new waste fraction did create certain hard-to-avoid frictions in daily routines. These related to the need to readjust routines for carrying waste to street-bins and to set up a further waste bin in limited living space – though, at least, organic waste bins could be obtained for free from the municipal authorities. Furthermore, people resented the space taken up by the new street containers and focus group members revealed their irritation about the fact that they still had to pay waste rates although they now 'eased' the municipality of the waste separation burden. In addition and despite public informational measures, uncertainties remained on how to sort specific types of waste. These flaws in instrument design and communication are likely to have contributed – along with the difficulties to provide the public waste separation infrastructure in a timely manner – to the relatively low rates of organic waste separation.

Two instrument assessments are not in line with the hypothesis as such, but still (in different ways) support its underlying assumption. Firstly, the **UK energy supplier obligations (CERT)** are a successful instrument although they are not as consumer-friendly as could be. Expert interviews and focus groups have shown that especially vulnerable households – the instrument's so-called priority group – tend to be ignorant or sceptical about suppliers' advertisements of the scheme; reluctant to contact energy suppliers in order to take advantage of the scheme; and disinclined to allow energy companies to enter their homes and carry out energy efficiency renovations. CERT measures could be even more widely implemented<sup>24</sup> and accepted among consumers if the instrument took these consumer concerns into consideration. In particular, more 'neutral' (e.g., governmental) and community-based communication on the scheme instead of supplier advertisements could help to reduce consumer mistrust. Lower thresholds to participate in the scheme could spur consumer take-up rates. Secondly, while the Finnish **Energy and Environmental Expert (EEE) scheme** in general reflects very well the diversity of everyday needs and practices in the diversity of ways in which it works, its outcome level has been evaluated to be low to medium. This case thus qualifies our hypothesis. The accommodation of consumer needs was relevant for generating effects from the

---

<sup>24</sup> if they were not 'capped' by the energy suppliers' targets.

scheme, but there may be a gap between the adaptation of the instrument to consumer needs at 'conceptual' level and at the 'practical' level of its local implementations. Here, EEEs may not be capable of sufficiently entering into the specific needs and practices of the residents in order influence their behaviour. For this, the experts require a broad range of technical competences, organisational capacities, and social skills including the capability to communicate with diverse audiences (young people, the elderly, immigrants etc). More support is necessary for the EEEs to sustain or even boost the instrument's effects.

Some of the SC instruments do not specifically accommodate consumer needs and practices, but this does not seem to be causally related to their outcome levels. Rather, the subject matter or nature of the instruments do not seem to require the acknowledgement of these needs and practices. This happens when an instrument does not necessitate substantive behavioural change from consumers, which has to be accommodated in everyday life. One point in case is the **water saving campaign in Catalonia**: once the water flow restrictors were installed the instrument did not substantially affect consumers' everyday needs, practices or habits. Alcantud and Mazo (2010) consider it likely that this fact contributed to the campaign's relative success: it meant that water saving did not require deeper behavioural changes which might potentially have involved personal sacrifices or modifications in living standards. Similarly, the **Latvian "Product Quality" label** as such is indifferent with regard to consumers' (differing) needs and practices. At the same time, using the instrument necessitates very little action from the consumer; it can easily be integrated into their buying routines and does not even require paying a noticeable price premium. The case is somewhat different with the **public catering provisions in Finland**: the recommendation or requirement to offer a vegetarian, organic or seasonal meal, not as an alternative but as only option once a weak de facto narrows down consumers' choice. Interestingly, a majority of interviewees and focus group participants did not regard this as very problematic due to the implicit health benefits (in particular, if more vegetables are consumed). In some respect, the instrument though seems compatible with consumers' everyday needs and practices: like the two previously mentioned instruments it does not require a lot from consumer. Rather, the instrument makes it easy for them to reduce their ecological footprint without making an effort and can educate them on more environmentally friendly diets in an easy yet effective way.

Finally, the **WWF/FEC report on livestock consumption** does not directly address end consumers, so that the hypothesis cannot be applied to it.<sup>25</sup>

The appraisal of the hypothesis shows that there is a potential for a number of instruments to produce greater effects if they better tap into the daily routines, specific needs, and social norms of different consumer groups. This holds not only for instrument design as such, but also for the communication of the instrument. Good PR on sustainable consumption policy instruments helps to reduce information gaps, lowers the threshold to make use of (voluntary) instruments, and can raise awareness and contribute to societal value change more generally. The example of CERT shows that SC instruments can have high outcomes despite deficits with regard to the acknowledgement of consumer needs and practices. The good performance of the instrument is tightly related to its strong institutional set-up: it is a regulatory instrument with ambitious targets, timeframes, monitoring and compliance mechanisms. It seems that when an instrument does not sufficiently accommodate consumer needs and practices these deficits can be made up by a strong institutional set-up. On the other hand, in cases were SC instruments are not well institutionalised, we can expect that it is all the more necessary to

---

<sup>25</sup> However, in their policy suggestions the authors of the report take pains to address a combination of factors – economic, social, educational – in order to achieve a change in livestock consumption.

accommodate the needs and practices of consumers and other target groups, particularly where target groups are required or expected to substantially change their behaviour.

### 4.3 Targeting of consumer behaviour and framework conditions of consumption

Our third proposition was that *the scale of effects resulting from a sustainable consumption instrument significantly increases with the degree to which the instrument addresses both consumer behaviour and adjusts the framework conditions of consumption*. We based this proposition on the finding that consumer choices are mediated through infrastructures or “systems of provision”<sup>26</sup> (Fine and Leopold 1993) which define the opportunities and limits for individual consumption behaviour and, hence, systematically limit consumer autonomy (Southerton, Chappells and Van Vliet 2004; Spargaaren 2003). For example, individual choice is limited by the way cities, energy supply systems, housing designs and products are configured (Tukker et al. 2008; Wilhite et al. 2000). Thus, changes in consumer behaviour are part of a larger change in the social and technical organization of systems of provision. And those larger framework transformations, in turn, need to be supported by the adjustment of consumer behaviour. Hence, sustainable consumption instruments should account for the interaction between consumption and the supply side (Guy and Shove 2000; Rohracher 2001; Shove 2003a and 2003b; Spaargaren 2003).

Six out of ten cases support the above assumptions, partly on the basis of counterfactual reasoning (that is, founded on plausible arguments that instrument effects would have been greater had the instrument taken into consideration the hypothesised success factor). However, our findings are not altogether conclusive regarding a connection between the instruments’ target dimensions – i.e., instruments addressing consumer behaviour vs. framework conditions of consumption vs. both target dimensions – and instrument performance. The only pattern we could identify is that three of the four instruments with a medium to high performance address framework conditions of consumption.

Two of our instruments tackle both consumer behaviour and framework conditions of consumption. One of these cases confirm our hypothesis, one does not. The **German packaging ordinance** tackles consumer behaviour by encouraging the return of one-way packaging through a **deposit**, and framework conditions of consumption by setting up an elaborate deposit clearing and disposal infrastructure. When the instrument was first introduced such a central deposit clearing system was lacking. In practice this meant that consumers had to return their one-way containers to exactly the same shop where they initially purchased the drink to get back the deposit. Faced with this inconvenience, many consumers chose to dispose of the beverage containers in household waste, by littering public spaces etc. Only when the Packaging Ordinance was amended in 2006 and changed the systems of provision – by introducing a centralised clearing system and an easy-to-reach take-back infrastructure – the system started to run smoothly, resulting in return rates between 95-98% of all containers sold. The case thus supports our hypothesis. The **Latvian certification scheme “Quality product”** aims both at steering consumer purchases towards the labelled product and at increasing the availability of such products on the market. However, the fact that it addresses both target dimensions does not seem to have been decisive or at least not strong enough to create medium or high outcome levels.

Three of the analysed instruments primarily target consumer behaviour, partly supported by technical measures. Two of these case studies substantiate our proposition, though in a negative way. The

---

<sup>26</sup> These are negotiated interactive relationships between consumption and production in a sector.

**Finnish Energy and Environmental Expert scheme** itself addresses only consumer behaviour. However, it has co-existed for a long time with more technical programmes to foster energy efficiency in apartment buildings which influence the framework conditions of household energy consumption. This helps to tap both the 'human factor' and technological potentials, but the two-track approach is not effective: on the one hand, energy and environmental experts (EEEs) are not sufficiently trained to identify and correct energy wasting practices. On the other hand, housing managers and other professional staff are not motivated to involve the non-professional EEEs in decisions concerning investments and technical maintenance. A truly *integrated* instrument could help reduce such frictions and increase the effectiveness of both types of schemes. The **Latvian** legislation allowing **individual heat metering and charging** renders visible and attributable (with the help of a technical support measure) the heat consumption of individual households. In accordance with our hypothesis, Indriksone et al. (2010) argue that the low-performing instrument is likely to have yielded greater outcomes had it been supported by framework measures – e.g., expansion of financial support programmes promoting individual heat consumption metering and regulable radiators –, but also by measures addressing consumer behaviour directly.<sup>27</sup> The rather successful **Catalan water conservation campaign** addressed consumer behaviour through communication and a technical support measure. Its success can largely be attributed to the demonstrable implementation of the water flow restrictors. Further measures carried out during the drought which addressed the framework conditions of water consumption – the restriction of urban water supplies to municipal tanks – are unlikely to have affected household water consumption, since restrictions in the water supply to households could be avoided due to these measures.

Five of the analysed instruments focus on altering framework conditions for (end) consumption and do not target the (purchasing, use or disposal) practices of consumers as such. Three of the respective case studies corroborate our proposition, though in a negative way. Firstly, the **Catalonian waste legislation** aims at providing framework conditions for organic waste disposal. Its insufficient outcomes (as contrasted against its targets) were traced back not only to difficulties of municipalities in setting-up the infrastructure but also to consumer behaviour, i.e. to low biowaste collection rates among the population. While consumer behaviour had not been considered in the original legislation, it became an issue in later amendments: the revenues from the waste disposal tax can now be used for municipal campaigns to increase citizens' understanding of and participation in the system. Secondly, the **Finnish public catering requirements for sustainable meals** focus on framework conditions and only address the behaviour of consumer indirectly, by 'choice-editing' their options of meals with public caterers. Focus group discussions and interviews suggested that the instrument would be more effective if it also addressed consumers directly, e.g. through well-designed awareness raising and social marketing campaigns. These could help to prevent negative effects such as the loss of customers to less sustainable alternatives. The **UK White Certificates** (the CERT programme) aim to adjust the framework conditions for household energy consumption. The fact that the actual energy consumption practices of households are outside the instrument's scope has been criticized as obscuring its real effects (because, for instance, better insulation may induce people to actually heat more), a fact that can be seen to support the above hypothesis. Like CERT, the German **minimum efficiency standards for buildings** seek to 'green' the framework conditions for energy end consumption by residents. Brunn (2010) locates the instrument's core weakness in its failure to tap into the needs of its actual target group (property owners) (see Section 4.2) and thus rejects Hypothesis 3. Finally the **WWF/FEC report on livestock consumption** and climate change is

---

<sup>27</sup> Above all, awareness raising on the benefits of individual metering and information of its use after installation, including through energy advisory services.

primarily directed towards policy-makers and the livestock industry with the goal of transforming the framework conditions of meat and dairy consumption. It is embedded in a wider campaign of WWF-UK (“One Planet Food”) that more explicitly targets consumers’ nutrition habits. However, since the report has not produced effects beyond awareness raising the use of this case study for testing the hypothesis is limited.

Hypothesis 3 was difficult to interpret. This has to do with the limitations inherent in counterfactual reasoning but also with the fact that no particular patterns emerged when trying to link the ways in which the instruments address the two target dimensions to their performance. However, independent of this link the majority of cases supported the assumption that instruments that jointly targeted consumer behaviour and the framework conditions of consumption were more likely to be effective. For policy-making, this implies that technical improvements and social or behavioural issues should be addressed in conjunction. In addition, the fact that high-performing instruments largely targeted framework conditions of consumption supports the view that changes in individual consumer behaviour require the existence of enabling systems of provision.

#### 4.4 Stakeholder involvement

Hypothesis 4 stated that *the involvement of stakeholders in the development and /or implementation of a sustainable consumption instrument significantly fosters the creation of instrument effects*, i.e. changes in consumption patterns and resulting sustainability gains. This is because the increasing complexity of production and consumption settings requires policy-makers to draw on the knowledge and cooperation of target groups (Coenen 2009; Cohen and Murphy 2001; Wolff 2004). Stakeholder involvement fosters learning about the everyday needs, practices, and capacities of different consumer groups. Hence, it helps to avoid misspecification of instruments and to improve the quality of decision-making and subsequent policy outputs. Especially if changes in consumption patterns require the negotiation of new systems of provision, social learning is required, based on the interaction between various stakeholder groups including consumers (Bijker et al. 1989; Rohrer 2001 and 2003; Russell and Williams 2002). Stakeholder involvement can also boost an instrument’s acceptance and legitimacy, thus diminishing the veto power of organized societal actors (Edelenbos and Klijn 2006) and their potential resistance in the implementation process. Finding the appropriate level and intensity of stakeholder involvement is critical for the successful development and implementation of a sustainable consumption policy instrument (Rubik et al. 2009).

In the context of our case studies we were able to investigate a broad range of parameter values, i.e. cases with no or hardly any stakeholder involvement, cases with stakeholder involvement at the decision-making stage and stakeholder involvement in the implementation stage. As we have already seen, the case studies professed a variety of outcome levels (from low to high) and policy pathways (e.g., stakeholder influence boosted vs. hampered instrument effects). Generally, the case studies tended to confirm the hypothesis.

For example, the **energy supplier obligation programme (CERT)** in the UK showed that the participation of the target group of instruments is an important success factor if sustainable consumption policy instruments are to induce substantial changes in behavioural patterns. CERT regulates major energy suppliers in a way that potentially deprives them of business opportunities, or at least aims at transforming their business model – from selling units of energy to marketing energy services. Such an intervention with long-standing business practices and business cultures in particular requires target group cooperation in order to forego resistance in the implementation process. For the design of the instrument it was hence favourable that similar programmes based on supplier targets had been running on since 1994: when consultations on CERT were started in 2006,

stakeholders already had a good grasp of the instrument. Target group cooperation was also eased by the fact that energy suppliers can charge the costs of the programme to consumers. Other stakeholders such as insulation companies, installers, white goods manufacturers and social housing providers were already supportive of the instrument, since they could reasonably expect to profit from CERT. In the implementation, CERT requires close cooperation between the regulating agency and energy suppliers, e.g. through quarterly reports, and this cooperation was assessed to work well.

Another case highlighting the importance of target group involvement is the WWF **report on livestock consumption** and climate change in the UK. The instrument demands a shift in the diet of individual consumers that might adversely affect the livestock industry. This is not likely to happen if there is no long-term involvement of this target group in the form of information sharing, “green marketing” of dietary alternatives, and ultimately transforming business models, e.g., through supplying “less but better” (premium quality) meat. The roundtable meeting accompanying the report was a fairly successful effort at bringing together opposing interests, even if not all industry stakeholders agreed with the report’s recommendations.

The **Catalan water saving campaign** demonstrates that beyond immediate target groups the involvement of intermediaries and civil society can be crucial. Firstly, the fact that ironmonger associations and distribution chains were asked to stock and promote water flow restrictors contributed to the campaign’s effectiveness, by making access easy should people want to install more than the freely distributed devices. Secondly, an influential environmental NGO was involved in the design and implementation of the campaign and this increased the campaign’s legitimacy.

Evidence that stakeholder involvement may be a necessary but not sufficient condition for the success of a SC policy instrument was provided by the two Latvian case studies. The regulation on which the **individual heat consumption metering** system is based was developed with the participation of a professional association of heat controlling/ registering enterprises which advocated provisions aimed at promoting heat metering and regulable radiators (including through subsidies), but this did not safeguard the instrument’s use by many households. It might be speculated, however, whether the involvement not only of industry but of *end consumers* might have helped to avoid some of the flaws in the instrument’s intervention logic and public communication of the instrument, in particular with regard to ease of installation and amortisation rates, subsequently increasing instrument success. In the case of the “**Product Label**” the initial setting of award criteria was conducted under the aegis of a business organisation (‘Marketing Board’) and involved the relevant food producer associations. However, food producers themselves have not proposed many products for certification. It is possible that the producers did not perceive a business case when the scheme developed, and that stakeholder involvement did not help to change this perception.<sup>28</sup> Later, when the scheme was taken over by government, producers complained about a bureaucratisation of procedures.

The Finnish case of setting and implementing sustainability requirements for **public catering** shows that the involvement of stakeholders is not necessarily only positive. Broad consultative and cooperative involvement of (industry, governmental and environmental) stakeholders appears to have provided an opportunity for industry and various ministries to suggest a range of implementation options which in effect make the instrument requirements (i.e., the outputs) more ambiguous than initially foreseen. This in turn may lead to a diversity of interpretations of the requirements and may be

---

<sup>28</sup> We did not find evidence that the lacking interest of food producers in the label reflected a so-called principal agent dilemma – with the association (‘agent’) voicing positions not fully representing the interests of the food producers (‘principals’) in the design of award criteria.

confusing for the actors implementing the instrument. Ultimately, this may account for the (at least presently) rather low level of outcomes.

The case study on the German **energy saving ordinance** points in the same direction. In Germany there is no need for stakeholder consultation or involvement in the case of ordinances (as opposed to laws), since these can be changed by governmental decree. However, the 2009 ordinance was revised in parallel with the energy savings law and stakeholders used the respective consultation channels to try influence the ordinance indirectly. In this process, property owners – who represent a significant voter potential in Germany – have proven to be highly influential. They successfully pushed for weaker control and efficiency standards and fought the expansion of certain obligations.

The **Energy and Environmental Expert (EEE) scheme** deviates from the above examples in that not policy-makers but stakeholders themselves – residents and housing companies – initiated the instrument (and implement it). EEE started as a ‘pilot’ scheme that was later diffused to more sites but not standardised in its implementation. Due to this enduring ‘pilot’ character, only limited *new* stakeholders have been involved. The scheme as it exists today is still purely ‘internal’ to the housing company. Few outsiders (e.g., municipal officials, NGOs) make contact with the EEEs and the general awareness of the EEE scheme is low. This partly confirms the above hypothesis: while stakeholders are key to explaining the instrument’s effects, involvement of new stakeholders might have fostered public recognition of the work done by the EEEs and contributed to mobilising resources to diffuse the scheme.

Qualifying the above hypothesis, the **German drinks deposit** case shows that stakeholder involvement during instrument development needs to result in a measure of consensus (at least in the central points/issues) in order to guarantee stakeholder cooperation in instrument implementation. While the deposit’s introduction was negotiated among others with major industry stakeholders, no agreement could be achieved between these and the coordinating environmental ministry on one particular aspect, namely the building of and cost transfer for a collection and clearing infrastructure. Due to this point of contention the deposit bill was avidly opposed and legally challenged by industry when it came into force in 2003. Only when legally defeated, industry started to comply with its obligations under the packaging ordinance. Once implemented (by 2006), a process of social learning took place in which the system’s advantages to consumers (easy return system) and retailers/producers (standardised handling facilities and easy recovery of valuable secondary resources) led to general acceptance of the system.

The **Catalan waste separation legislation**, finally, is an interesting case in that there was practically no stakeholder involvement in the initial policy process – neither the different public bodies at local and regional level, nor industry, environment or consumer organisations were involved or even consulted. Mazo and Alcantud (2010) perceive this as one cause of why the attainment of the law’s objectives was (and still is) delayed. Lacking consumer involvement might also account for the fact that the more consumer-friendly method of garbage collection – the door-to-door system as opposed to the street-bin collection – was only later introduced as an implementation option for municipalities.

Stakeholder involvement in the development and implementation of the analysed instruments was typically dominated by industry groups. While environmental groups were involved in a number of cases of instrument design, consumer organisations were less frequently consulted and had lesser opportunities to voice their perspectives in relevant decision-making fora. This may have to do with the fact that in many countries consumer organisations presently focus on questions of consumer rights and consumer protection that are perceived as only loosely related to SC policy making. As a consequence, our initial assumption that stakeholder involvement will promote learning about “everyday needs, practices, and capacities of different consumer groups” certainly needs to be

qualified. Such learning can only take place when consumer interests are more closely integrated into policy-making than they are presently. In addition, focus group discussions, simulation games or similar methods may help to achieve a greater fit of policy instruments with consumer needs, practices and capacities.

Furthermore, inclusion of producers, intermediaries or other stakeholders in instrument implementation tended to promote instrument success, e.g. by sharing implementation costs, promoting social learning or making more sustainable products more easily available.

Moreover, the case studies demonstrated that stakeholder involvement is not per se a recipe for success. The quality of such involvement and its effectiveness at generating basic consent/acceptance (at least in major points) as well as the capabilities of decision makers in managing such stakeholder processes with a view to preserving an ambitious target setting vis-à-vis critical lobbies, are key.

Instruments such as the CERT scheme and the German deposit show that involvement of stakeholders can be a crucial success factor in the implementation phase. Particularly where instruments hinge on, e.g. industry cooperation for success, these groups must be accepting of the goals of the instrument. This kind of stakeholder involvement is fundamentally different from stakeholder involvement in instrument design in that it implies a de-facto burden sharing between the state and private actors. Such burden sharing is mostly connected to the notion of extended producer responsibility in Europe and will probably rise in importance in the coming years. It is therefore essential for policy makers to closely look at relatively successful cases and the ways in which target groups were incited to cooperate and, in some cases, even endorse such instruments.

On a final note, the Finnish public catering case illustrates a second point in this regard: stakeholder involvement both at the design and implementation stages may be important in motivating relevant actors to take voluntary measures in support of a policy instrument or put into practice supportive measures that were previously perceived as lacking legitimacy/customer acceptance. In the Finnish case, this is illustrated through catering providers taking effective action in their own work in preparation for expected higher demand for sustainable meals, including purely vegetarian menus.

## 4.5 Policy interaction

The implementation of SC policy instruments is also affected by the fact that the instruments do not come in isolation but in the context of other policies and instruments with which they potentially interact. Unsurprisingly, not all of those policies are aligned to the cause of sustainable consumption. Policy-makers often send consumers “mixed messages” (e.g., Biggart and Lutzenhiser 2007; Mont 2007) which can curb an SC policy instrument’s potential effects. We therefore posited that *the scale of effects resulting from a sustainable consumption instrument varies strongly with the extent to which it interacts with other policies* (cf. Boonekamp 2005; Child et al. 2008; Simoes et al. 2005; Sorrell 2003; van der Doelen 1998). *While synergetic policy interaction will reinforce an instrument’s outcomes and impacts, antagonistic interaction is a major cause of low levels of instrument effects.* Synergetic policy interaction means that one or several other co-existing policy instruments support the SC policy instrument under review either in its goals or in its governance mechanisms. Antagonistic policy interaction takes place when competing instrument goals or mechanisms contradict or undermine those of the SC policy instrument in question.

Hypothesis 5 was confirmed for almost all instruments, independent of the need area. It was hence as relevant in the field of sustainable food as in the field of sustainable housing where presently much more instruments are in place and interact with each other across several scales. Altogether, we could

identify more cases of synergetic than antagonistic policy interaction; the latter was more widespread for sustainable food consumption instruments.

Most case studies confirm Hypothesis 5 in a positive way. For example, Leung (2010a) describes for the **UK energy supplier obligations** (CERT) that the various policies addressing energy efficiency in residential buildings, mainly for the fuel poor, interact relatively harmoniously at the level of instrument goals. By directing public attention to fuel poverty and fuel efficiency they contribute to CERT's rather high outcome and impact levels.

The case study on **mandatory energy efficiency standards for residential buildings in Germany** supports the hypothesis in a qualified manner. The instrument is supplemented by a range of policies that support its goals (most notably, an energy performance certificate for buildings) or its governance mechanisms (e.g., financial support for energy efficient construction and renovation; procedural provisions that allow residents in owner-occupied multi-apartment dwellings to decide on energetic renovation without unanimity). They all help explaining the standards' relative success (as compared to the other instruments under investigation). Nevertheless, Brunn (2010) argues that an improved coordination of these policies would likely boost the instrument's outcomes and impacts. Likewise, the hypothesis gains qualified support in the case study on the **Finnish Energy and Environmental Expert (EEE) scheme**. The most relevant policy interaction occurs with a voluntary agreement of the residential building sector on energy efficiency in apartment buildings, signed by all large providers of rental housing. Whereas policy interaction is synergetic, the agreement can also be seen as undermining the need for the EEEs by driving energy management more into the hands of housing management professionals. Alcantud and Mazo (2010) argue that the **Catalan "Install me!" campaign's** outcomes are most likely due to the synergetic and well-coordinated policy interaction with other instruments targeting the same goal (to preserve water resources during the drought). The respective instruments include communicative activities (by multiple public and business actors at national, regional and local level), regulative interventions restricting urban water supplies and, most importantly, increases in water prices. Among the sustainable food instruments, the **organic waste separation regulation in Catalonia** has been complemented over the years by a wide package of supporting policies. These have helped to increase instrument effectiveness, thus corroborating Hypothesis 5. The package includes a Municipal Waste Management Programme which defines targets and timeframes for introducing waste separation infrastructures at regional level; subsidies for introducing necessary infrastructures at the local level; a landfill waste disposal tax both for penalising and providing support to non-compliant municipalities; an extension of the original instrument's scope; and the obligation for municipalities to set up own schedules and strategies for goal achievement.

The hypothesis is confirmed in a 'negative' way by three of our case studies. The low outcomes of the **individual heat consumption metering system** in Latvia can partly be explained by the weakness of synergetic, complementing policies aiming to increase the energy efficiency of multi-apartment buildings that could, e.g., promote the installation of meters. Similarly, the (as of yet) low effects of the **public catering provisions for sustainable meals** in Finland may to some extent result from antagonistic policy interaction: for instance, procurement of organic food conflicts with the aim to keep public sector costs as low as possible. Also, the public stimulus for increased purchasing of vegetarian food may require new ways of implementing nutritional and purchasing requirements, and hence new competences. Lastly, organic and seasonal foods may present hygiene problems for kitchens that have so far been mainly using pre-processed foods, and are not equipped to process raw foodstuff according to current hygiene regulations. With a view to the future, there is a potential for national nutritional guidelines to support the instrument by guiding catering providers in environmental aspects as well. The **WWF/FEC report on livestock consumption** (UK) is not supported by any notable public policy instrument working towards the goal of reducing livestock consumption and increasing

dialogue on the issue. This lack of synergetic interaction may have contributed to the relatively low instrument effects, indirectly confirming our hypothesis. Policy interaction with the UK government's "Food 2030" Strategy and resulting future policies may even be antagonistic, considering that the Strategy maintains that "there are some groups that advocate a diet with less meat as a way for consumers to reduce the environmental footprint of their diet. But the evidence to inform appropriate consumer choices and policy responses *is currently unclear*" (own italics). In the Strategy, hence, „reducing the food system's greenhouse gas emissions" is only one line of future activity, next to potentially conflicting lines such as "ensuring a resilient, profitable and *competitive* food system" (own italics).

Finally, one of the case studies shows that synergetic policy interaction may be a necessary but not sufficient condition for instrument success. While implementation of the **Latvian "Quality Product" label** has been supported by subsidies for, e.g., the communication and marketing of the label, this synergetic policy interaction was not strong enough to prevent the rather low levels of instrument outcome.

The **German deposit on disposable beverage packaging** was designed to fit with other waste legislation in Germany and is a consistent part of the larger packaging ordinance so that instrument interaction did not play a role at national level.<sup>29</sup> The hypothesis can therefore neither be confirmed nor rejected beyond stressing the importance of consistency of new instruments with existing policies.

To conclude, synergetic and antagonistic policy interaction seems to be relevant determinants of instrument effects. Brunn (2010) finds that synergetic interaction in the sense of instruments aiming in the same direction does not suffice to foster instrument success. Instead, he calls for policy instruments to truly complement each other in their efforts, tackling different aspects of the problem. Heiskanen and Aalto (2010) add to this the observation that instruments that are 'functional alternatives', i.e., that are seen as alternative ways to achieving the same goals – can also 'compete' for attention and resources. The lack of cooperation and coordination between the instruments can reduce their effectiveness.

## 4.6 Market context

In Hypothesis 6 we posited that *the scale of effects resulting from a sustainable consumption instrument is highly contingent upon a favourable market context*. A 'favourable market context' with regard to sustainable consumption can mean, for instance, that prices for energy or meat are high so that instruments aiming at a reduction of energy or meat consumption will be attractive to consumers for monetary reasons. More generally, we assumed that even a well-designed and implemented policy instrument could fail if the sustainable products, services or technologies the consumption of which the instrument aimed to foster were not easily available on the market (e.g., De Pelsmacker et al. 2005); if the costs of purchase and the transaction costs linked to their consumption were significantly higher than those related to less sustainable products (ultimately leading to "consumer lock-in", Zauberman 2003); or if consumers could not get appropriate information on the more sustainable product alternatives, i.e. when market transparency was restricted.<sup>30</sup>

---

<sup>29</sup> On the EU level, however, there were concerns about potential conflicts with European competition law. The bill was legally challenged (in 2001 and 2004) and consequently reviewed.

<sup>30</sup> Relevant information can pertain to the purchase of the products (e.g., to their comparative sustainability; their lifecycle costs; other quality characteristics) as well as to the adequate use or disposal. Typically, for consumers to make use of such data, the information needs to be easily obtainable (e.g., free of cost), easy to understand, and considered to be credible (e.g., Aalto et al. 2008; Akerlof 1970; Coffman 2002; Jordan et al. 2004; Leire and Thidell 2004; Stiglitz 2000).

The hypothesis is confirmed for the great majority of the cases and across most instrument types – regulatory, economic and procedural ones, including labels, with the (unsurprising) exception of the one purely communicative instrument analysed.

For example, the rather high outcomes of the **UK White Certificates** can at least partly be accounted for by market factors: in the context of high energy prices the **CERT programme** is attractive to use since it provides households with subsidies for energy efficiency measures and reduces the transaction costs of renovations (when compared to renovations carried out without the support of energy suppliers). Such “market pull” factors were supported by the “political push” of the individual supplier targets: energy companies are under the sanctionable obligation to carry out sufficient measures to reach agreed-on GHG reduction targets. The medium to high outcome level of the **Catalan “Install me!” campaign** can be related to the fact that the water flow restrictors were easily accessible – due to their free distribution and because policy makers had involved ironmongers and distributors –; that citizens were well informed on where to buy them; and that additional devices (beyond those distributed freely) were inexpensive (ca. 3 Euro).

Four case studies confirm our hypothesis in a negative fashion. The **public catering provisions for sustainable meals (Finland)** are an example where the low degree of instrument success is clearly dependent on limitations to the availability of the food products in question – in sufficient volumes and homogenous quality (e.g. in the case of organic food), at ‘reasonable’ prices, and in accordance with EU procurement law. The case study on the **Catalan waste separation legislation** traces back the delayed built-up of municipal waste separation infrastructures (above all the treatment plants), among others, to the fact that regional legislation had initially not considered that some of the obligated municipalities needed financial help to meet the high investment costs. The failure of the **German deposit on drinks packaging** to stabilize sales of reusable and environmentally preferable beverage containers can also be linked, among others, to an unfavourable market context. Firstly, discounters used its introduction as an entry point for eliminating reusable packaging from their shelves (thus limiting availability for their customers) and pushing new low-price beverages further into the market, thus undermining the instrument’s very goals. Today, many retailers do not offer reusable packaging in their sales mix anymore with detrimental consequences for the target of a 80% market share for those packaging types. Secondly, the ambiguities regarding which bottles are disposable, reusable or subject to the mandatory deposit restricted market transparency with regard to buying the more sustainable products, thus further decreasing the overall market share of reusable packaging. Finally, the low outcomes of the **Latvian “Product Quality” label** have to be attributed to a significant degree to the action and strategies of market players – in combination with socio-political factors. Firstly, food producers reduced their support of the label and limited the range of labelled products by almost 50%. This happened when the label’s administration was transferred from a business organisation to the ministry of agriculture in 2008 and certification criteria were sharpened. Secondly, although the label gets sufficiently promoted, is anchored in relevant distribution channels and well-known among the Latvian public, consumers consider it only rarely when buying food. This can be attributed to uncertainty with regard to the label’s added value and to the confusing variety of other labels. Above all, it is likely to be an effect of the so called “knowledge-action gap”, possibly in combination with the rather poor economic conditions in Latvia.

In a more roundabout and complex way, the case of the **mandatory energy standards for buildings in Germany** also shows how unfavourable market conditions – on one of several relevant markets – frustrate instrument effects. Generally, the market context for improving the energy performance of buildings is rather favourable. Above all, energy prices are high and expected to rise so that energy efficiency renovations are attractive. Also, subsidies and readily available loans mitigate price differentials. However, for the rather large group of private property owners who lease their buildings

another market context is relevant, too: the property market. And on this market, the energy performance of buildings (unlike their location and size) does not significantly affect the value of buildings. As a consequence, property owners who lease their property – and therefore do not directly profit from energy efficiency measures – are unusually reluctant to comply with the standards (Brunn 2010). We find similar countervailing market trends when trying to account for the low diffusion of **individual heat consumption metering in Latvia**. On the one hand, the market context can be regarded as ‘favourable’ in that heat energy tariffs are rising, the technology is well available on the market and ample service providers exist that see to its installation. On the other hand, against the backdrop of an overall weak economic situation and in the absence of respective grant programmes consumers regard the absolute costs for installing meters and radiators that can be individually regulated as an obstacle. In addition, focus groups showed that the demand for individual metering may suffer from consumers’ mistrust of corruption during the tendering of the installation service and of the involved business interests more generally. These findings underline the importance of ‘trust’ for the functioning of markets (North 1990).

For the case study on the (purely communicative) **WWF/FEC report on livestock consumption (UK)**, low instrument effects cannot be traced back to market factors. Finally, in the case of the **Energy and Environmental Expert scheme**, the share of energy, water and waste management costs in housing costs have risen over the past years and in particular electricity prices are expected to continue to rise. This may stimulate more interest in the EEE scheme as a way to reduce housing costs.<sup>31</sup> However, since the latest available figures on participation in the initiative date from before these price developments, we cannot make a definite statement on their impact.

From the appraisal of Hypothesis 6 we draw several conclusions. Firstly, when looking at determinants of effectiveness of a given SC policy instrument it is necessary to pay attention to *different* markets (e.g., energy and property markets) and to possibly countervailing trends on these different markets. Secondly, within the systems of provision the market context becomes relevant for instrument effectiveness often in combination with other, e.g. socio-political, factors. This could be seen from the Latvian product label where the impact of the market context unfolded in interaction with societal preferences and a politically prompted change in instrument stringency. Thirdly, we need to stay aware of ‘consumer inertia’, i.e. the fact that consumers may not change their behaviour immediately in reaction to changing context conditions such as rising prices, but that there might be time lags. Finally, SC instruments of course are not only affected by the market context(s) but themselves often intervene in and shape markets – including in ways that can, in turn, *negatively* influence their own effectiveness, as could be seen from the German drink packaging deposit.

## 4.7 Other factors

Case study authors were encouraged to keep an open mind regarding explanatory factors relevant for individual cases but not covered in our pre-specified hypotheses, so as to do justice to the empirical richness of the cases and arrive at “thick” accounts of reality (Gerring 2001). Success factors beyond those conceptualised in our hypotheses included transparent political communication<sup>32</sup> and the devotion of political support or sufficient resources. Other barriers emerged from budgetary restrictions, time-consuming planning and co-ordination processes in the setting up of SC

---

<sup>31</sup> On the other hand, EEEs may have to ‘compete’ with professional and commercial services for reducing energy use.

<sup>32</sup> E.g. on why the aimed at changes in consumption patterns are necessary; on the impacts of the respective un-/ sustainable consumption practices; and on the contribution of public bodies to more sustainable consumption.

infrastructures (e.g., organic waste treatment plants) and demanding social skills in the interaction with end-consumers.

We will elaborate on the last example. The **Finnish Energy and Environmental Expert (EEE)** scheme is interesting for our purposes since it underscores in a very rich fashion the relevance of socio-cultural factors for the functioning of SC instruments. The case study shows that social relations within the buildings where EEEs operate and appreciation of their work are key factors determining whether people are willing to volunteer for the task and whether their activities are successful. As the EEE is a position of trust, EEEs are selected on the basis of volunteerism. Despite a public discourse on social cohesion and a possible rejuvenation of collectivism in Finland, several trends contribute to sinking numbers of volunteers: high resident turnover, the heavy pace of working life and decreasing commitment to voluntary organisations operating in the neighbourhood. Also, the work of EEEs is not very socially rewarding and can entail “telling others what to do”, e.g., advising them on energy use or pointing out mistakes in sorting waste. Many EEEs find these types of responsibilities very difficult, so turnover is high. In order to avoid problematic interaction between EEEs and other residents, experts agreed that EEEs should neither be “policemen”, “busybodies”, “fanatics”, “hyperactive” nor “gossipmongers”. If there are not many volunteers, it may in some cases happen that persons are selected that are unsuited for the task and that may subsequently undermine the appreciation of the entire scheme. Social skills, trust and good interaction within the building are key to effective EEE activity. These high social preconditions limit the nation-wide scope for sustainability impacts from EEE schemes. From a symbolic perspective, focus groups debated whether the EEE scheme represented environmental protection as a kind of ‘hobby’ which people can engage in if they feel like it. Leaving energy use and waste management in apartment buildings to volunteers might send the signal that these tasks were not taken very seriously, undermining the work of the EEEs. The case study thus shows various angles under which socio-cultural issues, in addition to the factors elaborated above, affect the effectiveness of the EEE scheme.

## 5 Conclusions

In the paper at hand we assessed the effects of ten European sustainable consumption instruments from the areas of ‘housing’ and ‘food’, and we discussed factors influencing their performance. In the need area of housing a relatively more extensive selection of instruments from all instrument types was implemented over a longer period of time with better data available thus facilitating the analysis. In the need area of food it was more difficult to conduct impact assessments because instruments tackling consumer behaviour are still very scarce and often localised, while data is not easily available. The results presented here can, therefore, be only regarded as tentative.

The paper has shown that there is a variety of instruments and ‘levers’ through which consumption can be influenced in order to promote SC patterns. Yet the dynamic interaction between consumption and production, and markets and public policies, makes steering of consumption very difficult. The relationship between changes in consumption patterns and sustainability effects is rarely linear. It is mostly indirect, mediated by the resulting impacts on production patterns.

Nevertheless, we can draw some conclusions from the comparative analysis of the case studies with regard to the design and implementation of SC instruments and, more encompassing, of transforming systems of provision. The case studies have shown that SC policy instruments successful in changing consumer behaviour with regard to their governance mechanisms tended to have a number of characteristics: firstly, the large majority of them were regulatory and economic instruments, i.e. had mandatory and sanctionable obligations. Communicative and voluntary instruments alone did not yield comparative levels of results, though they made indispensable contributions in policy mixes. As a

general lesson, the existence of complementary supportive policies within policy mixes was often decisive in promoting instrument effects. Secondly and partly interlinked with the first aspect, the majority of more successful instruments had clear objectives and ambitious, quantified targets the (non-) achievement of which was monitored and credibly sanctioned. As a lesson for policy-making this means that SC policy should not be afraid of 'tough' instruments and ambitious targets. The costs that emerge from such policies for target groups are to some extent offset by efficiency gains and innovation effects. One case (CERT) suggests that policy acceptance is positively influenced when the remaining burden is equitably shared between consumers and producers and when more vulnerable consumer groups are particularly considered. Furthermore, our case studies showed that SC instruments were more widely used and more successful when they fitted with the constraints and requirements of consumption habits in everyday life. For policy-making this implies that SC policies need to better target the consumer. More 'consumer-friendly' instrument designs can be achieved, for instance, by better integrating consumers into policy-making and by using focus groups with consumers in ex ante impact assessments of future instruments and reviews of existing instruments.<sup>33</sup> Finally, we found that the majority of the more successful SC instruments addressed not (only) consumer behaviour as such but modified the structures and systems that define the opportunities and limits for individual consumption. This makes it possible for consumers to change their behaviour without having to shoulder disproportionate costs. Also, the inclusion of producers, intermediaries or other stakeholders in instrument implementation tended to promote instrument success, e.g. by sharing implementation costs, promoting social learning or making more sustainable product alternatives more easily available. In accordance with that, policy makers should adopt a more integrated approach to sustainable consumption and production. Technical improvements and social or behavioural issues should be addressed in conjunction. As well as sustainable consumption policies within one need area, sustainable consumption and sustainable production policies need to be more closely aligned. Where sustainable consumption policies try to create change, and sustainable production policies do not help to provide products and services accordingly, effectiveness will be limited.

Taken as a whole, the EUPOPP case studies also suggest that a combination of environmental and other – preferably immediate – co-benefits offer improved prospects for the success of an instrument. This is because people tend to be more motivated to take action when there is a visible positive effect "close to home". For instance, energy efficiency measures tend to be rather successful because saving energy is related to cost savings as well as the more remote goal of climate protection. In the same vein, consumers with a preference for locally grown and/or organic produce tend to appreciate the associated health benefits and the prospect of contributing to the local economy, at least as much as the more general environmental benefits of such products. For policy-making this implies that designing SC policies in ways that provide immediate co-benefits can highlight progress and achievements or, respectively, provide 'consolation' in case the environmental improvements are not locally visible or conclusively attributable to the instrument.

The authors of this report concur with literature in that the failure of many instruments to foster more sustainable consumption practices is partly the result of the complexity of understanding human behaviour and how to change it. Our findings confirm some basic difficulties encountered in empirical research and theory-building in the area of policy effectiveness in influencing consumer behaviour towards more sustainability. Through our hypotheses based on knowledge created across disciplines

---

<sup>33</sup> On a European level this creates new problems as overarching instruments can hardly take into account several different target groups in different countries. This means to carefully design policy instruments which are demanding but do not intervene too much in consumer habits.

and embedded into a theory-based approach to evaluation, we were able to elucidate for our ten case studies rich analytical narratives that helped us explain how and why they were (not) effective. The cross-cutting contribution of our approach is twofold: firstly, we have gone beyond traditional evaluative approaches in that we devised methods for assessing the level of successfulness of our instruments against their sustainability impacts. Even though this area of research is still very young, mainly due to the complexity of establishing causality between outcomes (e.g. CO<sub>2</sub> emitted or saved through changed consumer behaviour) and impacts (e.g. consequences of those emitted/saved emissions on human health, agricultural productivity, or biodiversity) we tried to approximate these through analytical narratives and policy arguments as well as indicative MFA screenings as best as possible. As data availability improves and the theoretical basis for understanding consumer behaviour and its impacts matures this approach can be further developed. Secondly, our findings confirm the importance of interpretative research and theory-building in the area of sustainable consumption. Elliott (1999, p.121) pointedly summarises this point (in Eckström 2003) when he argues that, to be truly accurate and useful, such research “requires a willingness to undertake research that does not assume any one answer to explaining consumer behaviour, no one single solution, but approaches consumer culture expecting to find multiple meanings and a rich construction of reality and illusion beyond the merely rational.”

## 6 References

- Aalto, K. and E. Heiskanen (2010): *Impact Assessment Paper: Requirements for public catering to serve sustainable meals, Finland*. Unpublished Manuscript within the EUPOPP project.
- Alcantud, A. and D. Mazo (2010). *Impact Assessment Paper: The “Install me!” Campaign – a communicative campaign within the drought context in Catalonia*. Unpublished Manuscript within the EUPOPP project.
- Bemelmans-Videc, M-L., Rist, R. and Vedung, E. (2007). *Carrots, Sticks and Sermons – Policy Instruments and Their Evaluation*. New Brunswick: Transaction.
- Bremere, I. (2010). *Impact Assessment Paper: The “Quality Product” Label in Latvia*. With contributions from Irina Aleksejeva and Daina Indriksone. Unpublished Manuscript within the EUPOPP project.
- Brunn, C. (2010). *Impact Assessment Paper: Minimum energy performance standards for buildings in Germany*. Unpublished Manuscript within the EUPOPP project.
- Connell, J.I., Kubisch, A.C., Schorr, L.B., Weiß, C. (1995). *New Approaches to Evaluating Community Initiatives: Concepts, Methods, and Contexts*. Roundtable on Comprehensive Community Initiatives for Children and Families. The Aspen Institute.
- Dunn, W.N. (1990). Justifying Policy Arguments: criteria for practical discourse, *Evaluation and Program Planning* 13(3): 321-329.
- Dunn, W.N. (1994). *The Functions of Policy Argument*. In: Public Policy Analysis (2<sup>nd</sup> edition). Prentice Hall.
- EEA (2005). *Household consumption and the environment*. Copenhagen: European Energy Agency. EEA Report 11/25.
- EEA (2007). *Europe’s environment. The fourth assessment*. Chapter 6: Sustainable consumption and production. Copenhagen.
- Ekström, K. (2003). Revisiting the Family Tree: Historical and Future Consumer Behavior Research. *Academy of Marketing Science Review* 7 (2003). Online at: <http://www.amsreview.org/articles.htm>
- Fearon, J. D. (1991). Counterfactuals and Hypothesis Testing in Political Science, *World Politics* 43(2): 169-195.
- Gerring, J. (2001). *Social Science Methodology: A Criterial Framework*. Cambridge.
- Hak, T. and Dul, J. (2009). Pattern Matching. In: A. J. Mills, G. Durepos and E. Wiebe (eds). *Encyclopedia of Case Study Research*. London, pp. 663-665.
- Heiskanen, E. and Schönherr, N. (2009). *EUPOPP Conceptual Framework. EUPOPP Work Package 1, Deliverable 1.2*. With contributions from Aalto, K., Adell, A., Alcantud, A., Barth, R., Bremere, I., Brohmann, B., Fritsche, U., Larcom, S., Schäfer, B., Schmitt, K., Wolff, F. Online at [www.eupopp.net](http://www.eupopp.net).
- Heiskanen, E. und K. Aalto (2010): *Impact Assessment Paper: The Environmental and Energy Expert scheme, Finland*. Unpublished Manuscript within the EUPOPP project.
- Howlett, M. (2005). What is a Policy Instrument? Policy Tools, Policy Mixes, and Policy Implementation Styles. In E. Pearl, M. M. Hill and M. Howlett (eds). *Designing Government. From Instruments to Governance*, Montreal, Ithaca, N.Y.: McGill-Queen’s University Press, 31-50.

- Indrikson, D.; Bremere, I. and I. Aļeksejeva (2010). *Impact Assessment Paper: Heat energy usage metering in Latvia*. Unpublished Manuscript within the EUPOPP project.
- Leung, D. (2010a). *Impact Assessment Paper: UK Carbon Emissions Reduction Target (CERT)*. Unpublished Manuscript within the EUPOPP project.
- Leung, D. (2010b). *Impact Assessment Paper: "Livestock consumption and climate change: A framework for dialogue" by the WWF (World Wildlife Federation) and FEC (Food Ethics Council)*. Unpublished Manuscript within the EUPOPP project.
- MacMillan, T. and R. Durrant (2009). *Livestock consumption and climate change: a framework for dialogue*. Food Ethics Council/ WWF-UK. At [http://assets.wwf.org.uk/downloads/fec\\_report\\_.pdf](http://assets.wwf.org.uk/downloads/fec_report_.pdf)
- Mazo, D. and A. Alcantud (2010). *Impact Assessment Paper: Selective garbage collection of organic waste specified within the Catalanian Waste Law (Llei reguladora dels residus)*. Unpublished Manuscript within the EUPOPP project.
- North, D. (1990). *Institutions, Institutional Change and Economic Performance*. Cambridge.
- Prittitz, V. (2001). *Politikanalyse*. Stuttgart: Lucius & Lucius Verlagsgesellschaft.
- Skjarseth, J.-B. and J. Wettestad (2009). A framework for assessing the sustainability impact of CSR. In: In: Barth, Regine/ Wolff, Franziska (eds.): *Analysing Corporate Social Responsibility in Europe: Rhetoric and Realities*. Edward Elgar: Cheltenham, pp. 26-37.
- Vedung, E. (2004). *Public policy and program evaluation*. New Brunswick: Transaction Publishers.
- Wolff, F. and N. Schönherr (2009). *Impact Assessment Tool for Sustainable Consumption Instruments (2nd Draft)*. With contributions from Eva Heiskanen. [www.eupopp.net](http://www.eupopp.net)
- Wolff, F. and N. Schönherr (2011): The Impact Evaluation of Sustainable Consumption Policy Instruments. In: *Journal of Consumer Policy*, Vol. 34, Issue 1: 43-66.
- Yin, R. K. (1994). *Case Study Research. Design and Methods*. Thousand Oaks.