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Scientific Support to Policies (SSP) – Specific Support action



Sustainable Consumption Policies Effectiveness Evaluation (SCOPE²)

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Executive summary

Introduction

The quest for making consumption and production patterns more sustainable has already a long history. It was mentioned as an action point in the Rio Conference in 1992. A new mandate was created via the Johannesburg Plan of Implementation of 2002 that called for the development of a Ten-year Framework of Programs on Sustainable Consumption and Production (10 YFP on SCP). In 2006 SCP it was included in the revised EU Sustainable Development Strategy (SDS). Implementing an action from the revised SDS, the EC published an SCP Action Plan (EC 2008). Given the policy interest in SCP, and the complexity of realising it, there is obviously a great demand for insight into what policy instruments are best suited to support SCP. Under the EU's 6th Framework Programme, therefore a project was performed by the Netherlands Organisation for Applied Scientific Research TNO (Netherlands), the Sustainable Europe Research Institute (SERI, Austria/Germany) and the International Institute for Industrial Ecological Economics (IIIEE) of Lund University (Sweden). The project covered of the following elements:

- An inventory and analysis of the effectiveness of policy instruments, voluntary business initiatives and more systemic approaches to realise SCP. The first two are the current prevailing approaches towards realising SCP, where at the same time it is more and more acknowledged that changes to more sustainable systems of consumption and production need a systemic perspective too.
- A gap analysis, focusing on effectiveness gaps (how instruments and approaches can be applied more effectively, alone or in combination), sectoral and geographical gaps (successful approaches are applied in some sectors or countries, rather than all), and white spots (new instruments and approaches that seem necessary but are not applied at all).
- Conclusions and recommendations.

The full report covers 400 pages and it is rather difficult to reflect the depth and richness of the conclusions in a traditional executive summary of a few pages. This executive summary hence is build up in the following way:

- Relatively short texts discussing the main conclusions of each part of the study
- The most important summary tables of the main report, added consecutively after the summary text.

Inventory of instruments and approaches

The Table below gives a review of instruments and approaches inventoried which were divided into policy instruments, business initiatives and systemic approaches. The instruments and approaches are manifold, and applied in many different situations (countries, industry sectors, etc.). Within the confines of the project it was impossible to do a comprehensive evaluation of effectiveness for all instruments and approaches and situations. We hence had to seek resource to the following working method:

 Long lists of instruments and approaches and application areas were generated, where possible giving an impression of success and failure factors of the approach;

- For about 8-12 cases per area (policy instruments, business initiatives, and systemic approaches) a more in depth analysis was done. Where possible and available, the conclusions of the own case study analyses where confronted with findings of other review studies. Cases were selected in such a way that
 - Each type of policy instrument, business initiative and systemic approaches would preferably be covered by one or two cases;
 - The consumption domains mobility, food and housing/energy use¹ should preferably be covered at least by one or two cases.

Table 0.1:	Overview, systemising the instrument mixes towards sustainable consumption and greening the
	market

	Policy instruments			
Administrative	Bans, product standards, material and quality requirements, emission levels, regulation of chemicals, recycling, and recovery quotas; public procurement policies; recommendations of official documents with a normative but non-binding character			
Economic	Environmentally related taxes and subsidies; Fees and charges; Licenses and permits; Emission Trading Scheme			
Informational	Mandatory environmental information from governments to the public or to upstream governmental bodies (e.g. for statistical reasons) and from business to the public and/or to governments; mandatory and voluntary certification, eco-labelling, consumer advice, consumer campaigns, education voluntary certification schemes			
Business initiatives				
Demand side	Green private procurement; green products, technologies and operations			
Supply side	Eco-labelling and social labelling; choice editing, green marketing; product service systems			
	Systemic approaches			
Innovation system approaches (IS)	IS approaches look at support of innovation in general, and aim to identify what functions or factors in the innovation system need support to let innovation flourish (e.g. the availability of a vision, risk capital, lead markets, entrepreneurs, schooling, research capacity, etc.). The approach was not developed for fostering sustainable innovation per se, but can be used for it, e.g. when countries use the lessons for fostering innovation in the field of environmental technologies.			
System innovation approaches (SI)	System innovation approaches were developed around 2000 by groups of mainly Dutch, British and German scholars. The aim is to understand the change to SCP as change in a complex system, that cannot be fully predicted or steered in traditional ways, but needs experimentation, learning, and novel governance approaches via coalitions of front runner societal actors.			

Gap analysis and effectiveness assessment

Effectiveness assessment

The cases evaluated and the results of the effectiveness assessment are summarised in tables 0.2 and 0.3. General conclusions with regard to effectiveness assessment are:

• There are very few, if any, studies that assess the intended and actual outcomes of business initiatives. For policy instruments, most studies focus on energy efficiency instruments. Effectiveness assessments of system innovation and innovation system approaches are few and far between, mainly due to the fact that these instruments were only introduced rather recently.

¹ The focus on food, mobility and housing/energy using products stems from the fact that these domains drive together around 70-80% of the environmental impacts in Western economies (e.g. Hertwich, 2005; Tukker et al., 2006a and 2006b)

- In the case of policy instruments, regulatory and financial instruments like minimum standards for energy efficiency of housing, and congestion taxes, have a higher impact than softer informative instruments such as labels.
- Having surveyed and analysed some business strategies, it is clear that there is very little coordination of business efforts on macro-economic level and the number of companies involved in greening the market activities is very low; but it is still much higher than that of companies that develop alternative business models for sustainable consumption. Seemingly voluntary actions of companies often are driven either by existing or anticipated regulatory actions, public demand and public opinion. Most business initiatives aim at incremental improvements leaving the existing business chains intact.
- Effectiveness and efficiency of many instruments and initiatives is often hard to evaluate due to the problem of 'attributability'. For instance, the EU mandatory energy labelling is supported by the availability of A-rating products from well-known brands, by the existence of proper retailer stock policy and by the price support that reduces price differentials.
- The former point reflects however another key message (see Table 0.4). Combinations of instruments targeting the same area seem to be more effective than individual policy instruments. This package of policy instruments itself needs to be supported by actions and strategies of other actors, most notably business. An example is the labelling legislation on organic food that in itself probably has limited effect. Support of organic food by large retailers not only helps distribute organic food to general public, but it also increases consumer awareness and reduces consumers' price premium. The same influence is reported if organic food is included as a requirement in public procurement.
- In sum, even for changes in consumption and production patterns on the short term, a systemic view has important added value for determining the most effective mix of instruments and business initiatives.

White spots

This section identifies *the main "white spots*" in sectors, products, target actors or geographical areas, where successful policy instruments, business initiatives and systemic innovations have not yet been applied, but might be applicable. Table A0.5 provides a comprehensive white spot analysis.

The most important general white spots are:

- National SCP Action Plans have been devised only in 3 EU countries²
- Regulative measures in SCP are less employed than economic and particularly informative instruments
- Most instruments focus on production and products. Consumption processes are only addressed by voluntary and information instruments are employed

In the domains housing/energy use, mobility and food a long list of instruments and approaches has been identified, that could be applied on a much broader scale than today. Reference is made to Table A0.5. Some illustrative examples include:

 $^{^2}$ It should be acknowledged though, that most EU countries develop sustainable development strategies, which may include issues related to SCP

Housing and energy using products

- Diffusion of zero-energy housing concepts differs markedly across EU member states, suggesting that some member states are more successful in tackling bottlenecks for diffusion as others;
- Energy labelling could cover more products as today (mainly household appliances)

Mobility

- Congestion charges in combination with improved public transport have proved to be very effective in reducing mobility impacts, but are applied in jus a few cities
- Only a limited number of airlines have a user-friendly way of purchasing CO2compensation certificates when booking a ticket.
- Eco-driving programs (i.e. lessons in fuel efficient driving) are applied in just a few EU member states

Food

- Choice editing or promoting sustainable food by retailers is effective, but applied by part of the retailers only;
- There is a high difference in market share of organic food and concepts like slow food across EU member states, reflecting the difference in stimulation measures.

Gaps

This section aims to identify the main *gaps in the existing toolbox of policy instruments*. The analysis identifies whether new instruments and initiatives are needed, or new mixes of thereof, or whether an extensive use of existing instruments will suffice for greening of the market and setting conditions and incentives for businesses to invest in innovation that stimulates more sustainable consumption patterns and contributes to greening of the markets. The analysis is reviewed in Table A0.6.

The most important general gaps are:

- There is a clear implementation gap: translating statements made at major events like the World Summit on Sustainable Development or major policy documents like the Sustainable Development Strategy in practice seems difficult.
- There is a lack of coherent and shared vision on SCP, and its institutional implications³.
- Current SCP policies mainly address marginal improvements in the economic system, but do not address fundamental issues like
 - The growth paradigm
 - The fact that the current way of organising the economic system did not lead to a fundamental improvement of quality of life in Western countries, despite a massive 'economic growth' in the last decades
- It is more exception than rule that SCP policies are truly developed from a systemic perspective (compare Table A0.7). This is both true for the short term (what mix of actions can bring (usually incremental) change now, given the

³ For instance, a concept like SCP has a domain-over-arching nature, but in EU member states, EU DG ENV and UNEP, in most cases the topic is handled by rather small units at the bottom of the hierarchy.

positions of different actors?) and the long term (how can a process be organised for long term change?).

In the domains housing/energy use, mobility and food a long list of gaps been identified. Reference is made to Table A0.6. Some illustrative examples include:

Housing and energy using products

- Minimum energy performance targets exist only for heating, not for lighting, hot tap water, etc.
- No incentives for limiting the amount of living space in m2 per person;
- No dynamic targets for the housing sector to improve material and energy efficiency, standards are minimum standards and standards for more ambitious solutions (e.g. 'passive houses' are absent.

Mobility

- Important differences in energy taxation per modality exists (e.g. no taxation on marine and airline fuel)
- The central role of the car in the mobility system is not put up for discussion.
- Mobility is usually neglected in (sustainable) public purchasing

Food

- Except for health and safety regulations, voluntary instruments dominate;
- Policies aimed at reducing meat consumption are hardly in place yet;
- Unlike for other industrial sectors and the mobility sector, there are hardly targets for the food sector to reduce its life cycle environmental impacts.

Conclusions and recommendations

The main objective of this section is to derive operational guidelines for policy makers with clear recommendations for how sustainable consumption and greening of the markets can be facilitated by a combination of measures and institutional adaptations.

For this, a matrix of actors and instruments has been developed, and specified for the domains food, mobility and housing/energy use. The actors include supra-national organisations like the EU, national governments, local and regional governments, and actors along the value chain (including consumers). Instruments include administrative, economic and informative policy instruments, as well as business initiatives at the demand and supply side. Instruments are divided into established instruments, under-explored instruments, and *innovative instruments* (colour codes used in the tables). The results are provided in Table A0.8-A0.10. Some illustrative examples include:

Housing/energy use

- Establish a top runner scheme for housing/houses (EU)
- Exercise sustainable public procurement for public buildings and their energy supply (governments);
- Development of standards for zero-energy houses (EU, governments)

Mobility

- Establish a top runner scheme in the automotive field (EU)
- Implement congestion charges; develop infrastructure for non car mobility (local and regional governments, national governments)

• Adapt fuel pricing (particularly for aviation) (EU)

Food

- High VAT on food products with high environmental impacts (e.g. meat) (EU, national governments)
- Informative campaigns influencing meat consumption levels (EU, national governments)
- Making impact of food visible (e.g. via carbon footprint labels; retailers).

Apart from the domain-specific recommendations, some general policy recommendations can be given. Where they seem obvious rules for professional policy making, our findings show that in the SCP they are only partially applied. These include:

- Ensuring adequate stakeholder involvement, impact on decision-making. This element is usually well organised in most EU member states and at EU level;
- Development of clear multi-dimensional sustainability targets. There is a clear reluctance to set such goals in an SCP context (e.g. targets with regard to overall resource-efficiency improvements in society)⁴;
- Clear agreements on implementation steps to be taken by different agents. Given the widely experienced 'implementation gap' in the field of SCP, also this point needs attention.
- Implementation control, success monitoring and feedback loops. This is partially covered at national and EU level by institutions such as EUROSTAT and the EEA (and similar ones at national level).

Finally, it has to be repeated that SCP is a concept that de facto seeks to make our economic system as a whole more sustainable. Though this is usually neglected, it hence must address some fundamental questions about how the economic system works, and if it provides quality of life for the masses in the most effective way. Dealing with topics such as 'beyond GDP', 'de-growth', and 'effectiveness in quality of life provision' hence must have a place on the SCP agenda, how difficult they may be to deal with.

⁴ In the economic field, the situation is markedly different. There is agreement on e.g. targets with regard to inflation, state debt, etc., that reflect a 'healthy economy'.

	Applied in EU member states	Type of instrument	Relevance	Impact	Side effect	Cost effectiveness	Competitiveness and employment	User value
	Crosscutting		-	-				
One	35-h working week	MA	++	+/-	/	-	Ø	++
Some	CO ₂ taxes	ME	+	+	/	+	+/-	+/-
One	Sustainability weeks	VI	+	Ø	/	Ø	+	+
	Housing							
All	Minimum requirements for existing buildings	MA	++	++	/	++/-	++	+
Most	Financial incentives for energy saving investments in existing buildings	VE	++	++	/	+/-	++	+
	Electricity use							
Some	Feed-in tariffs for electricity from renewable sources	ME	++	+	Ø	++	++	+
All	Energy labelling	MI	+	+	-	+	+	+
	Mobility							
Some	Third-payer support for public transport	VE	++	Ø	/	+/-	/	+
Few	Congestion charges	ME	++	++	-	+/-	/	++/-
Few	Eco-driving programme	VA	+	+	/	++	/	++
	Food							
Most	National label for organic farming	VI	+	Ø	-	+	+/-	++
Some	Public procurement of organic food	VA	+	+	/	-	+	+

Table 0.2: Inventory. Policy instruments - effectiveness assessment of 12 cases

Note: ++ highly positive; -- highly negative; / no effects; + positive; - negative; Ø no effects observed.

	Env	Environmental			Economic					
Applied in EU	Relevance	Impact	Side effect	Cost effectiveness	Competitiveness & employment	User value				
	Electricity and energy use in Housing									
Green private procurement	Skanska, Sweden	++	+	-	-	+	++			
	BedZed, UK	+	+	-	+	+	-			
Green products and technologies	BedZed, UK	++	++	Ø	+	+	++			
Eco-labelling and social labelling	Indesit, Italy	++	+	-	+	+	+			
Product service systems	AMG, Italy	++	+	Ø	+	+	+/-			
	RUSZ, Austria	++	++	Ø	+/-	+	++			
	Mobility									
Green products and technologies	Toyota Prius, EU	++	++	Ø	-	+	+/-			
Product service systems	Mobility Car Sharing, Switzerland	++	++	-	+	+	+/-			
	Food									
Green private procurement	Waitrose, UK	++	+	Ø/-	+	++	++			
Green products and technologies	Sheepdrove Organic Farm, UK	++	+	-	+/-	+	+/-			
Eco-labelling and social labelling	Änglamark, Sweden	++	+	-	+/-	+/-	++			
Product service systems	Aarstiderne, Denmark	++	+	Ø	+	+	++			

Table 0.3: Inventory. Business initiatives - effectiveness assessment of 10 cases

Note: ++ highly positive; -- highly negative; / no effects; + positive; - negative; Ø no effects observed.

Instrument category	Regulation	Economic incentives	Voluntary agreements	Information
Regulation	Building code + energy performance standard	Building code + training tools	Building code + subsidies for demonstration for achieving higher standard	NA
Information	Labelling + energy performance standard	Labelling, audit	Labelling / audit + subsidy	Labelling + voluntary standard
Economic incentives	Subsidy + energy performance standard	Subsidy + energy information centre	Subsidies + tax	Subsidy + VA
Voluntary agreements	NA	VA + audit	VA + tax exemptions	NA

Table 0.4: Gap analysis. Effectiveness improvements by combining instruments

Source: (Khan, Harmelink et al. 2007)

General white spots							
 National SCP Action Plans h 	ave been devised only in 3 EU countries	3					
 Regulative measures in SCP 	are less employed than economic and pa	articularly informative instruments					
 In sustainable consumption field mostly voluntary and information instruments are employed 							
Policy instruments hardly ever address consumption processes or consumer behaviour, because of							
consumer sovereignty principle							
 No challenge of systemic issues 	ues like the growth paradigm						
 Lack of evaluation studies of 	EU-wide policies						
Energy use in housing	Mobility	Food					
Lack of incentives for companies	Many produced cars have higher	Declining trust in food quality and					
and private consumers to build new	emission level than 120 g of	lack of effective measures to assure					
energy-efficient private houses and	CO2/km	consumers					
retrofit old housing stock	Convertion alternation of fam	Timited monther of much set that and					
Lack of proper housing in many	Congestion charges are so far	Limited number of products that are					
European countries leads to	applied only in few countries.	labelled with Fair Trade labels and					
construction of nouses with interior		oneir set to compete with					
Energy prices are not yet desigive	A agong to public transportation is	Prices of organic and least food are					
for choosing more energy-efficient	still not adequate in many European	often higher than of food produced					
construction processes and more	cities and prices can be quite high	in industrial farms with intensive					
energy_efficient houses	compared to car use	agriculture methods					
Lack of information on energy-	White spot is spatial planning that	There are still white spots in the					
efficiency to end consumers -	facilitates more sustainable	actions of retailers for sourcing					
energy labels on buildings are not	mobility and sustainable housing	ecological organic and local food					
applied everywhere	natterns	ecological, organic and local lood					
Penetration of eco-labelled energy-	Still few airlines provide the service	Lack of measures that address over-					
efficient appliances differs among	of calculating CO2 emissions to	consumption of calories					
European markets and among	passenger and the possibility to	·····					
products	compensate for emissions						
Geographical white spots in passive	Lack of consensus about the best	Geographical white spots in organic					
houses dissemination - mostly in	environmental and social	food distribution - mainly Italy,					
Germany and Austria, Switzerland	alternatives for fuels	Denmark					
and Scandinavia							
White spots in incentives for	Eco-driving programmes still	Still unclear are the forces that					
increasing the use of renewable	operate on small scale and is not	shape the introduction and the					
energy for various purposes in the	mandatory	market share of organic food in					
construction process and in the		different countries					
household operations							
Greening supply chains by	Greening supply chains in mobility	Lack of action for greening food					
construction companies is in the	domain at best takes place in terms	supply chains and lack of clear					
initial stage and employed by few	of purchasing bio-fuels, but not	understanding for how food					
companies	greening the vehicle production	supplies from across the world					
White met in the see desire of	chains White most in one design of	Could and should be audited					
white spot in the eco-design of	white spots in eco-design of	white spots in eco-design					
nouses done by architects and often	officient and heat from	approaches to food derivery					
construction companies	environmental performance point of	reduction strategies in different					
construction companies	view	countries					
The energy efficiency labelling	Eco-labelling of car fuel efficiency	There is information overload for					
directive or the energy star	and emission levels is on the way in	consumers – too many food labels					
programme mostly target household	some countries but not in all	addressing different aspects of food					
appliances and office equipment	some countries, out not in an	– eco-labels social labels food					
and less other products		miles, carbon labels, etc.					
Voluntary eco-labels in the housing	There are white spots in air freight	There is large difference in the level					
sector do not exist in all countries	labelling, e.g. Air freight	of recognition of the eco-labels in					
	transported food	different countries					
Green marketing is almost non-	Green marketing is picking up in	Green marketing of food is gaining					
existent in construction sector	mobility domain, but mainly from	momentum, but there are issues					
	major car manufacturers, not much	with trustworthiness - green					
	advocating the use of public	marketing rules do not exist in all					
	transportation	countries					
Product-service systems are still	Product-service systems in mobility	Product-service systems in food					
niches mostly developed for	domain represent a tiny niche of	domain are niches with box					
sharing or remanufacturing	less than 0.1% of the total number	schemes, local farmers markets and					
appliances with some "pay per	of people who own a car.	some food delivery schemes					
service" schemes in housing							

Table 0.5: Gap analysis. White spots of instruments in housing, mobility and food

Table 0.6: Ga	n analysis.	Gaps of ins	truments in	housing.	mobility	and food
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General gaps

- Inefficiency of the current economic system to provide and sustain the true quality of life to people
- Lack of coherent and shared vision on SCP
- Lack of systemic approach in developing SCP policies
- Gaps between intended and actual outcomes of SCP policy instruments
- Implementation gaps of SCP policies

Energy use in housing	Mobility	Food
Minimum requirements for	Gap between intended and actual	Mainly information-based and
existing buildings mostly do not	outcomes, e.g. Reducing impacts from	voluntary instruments, with
include other than heating and	transport - net increase of 20% in CO2	exception of regulation on health
hot water supply systems, e.g.	emissions from transport over the past 10	and food safety
lighting	years	
No common standard developed	No phasing out of fuel intensive vehicles	No clear understanding of what a
for zero-energy buildings	and planes with high fuel consumption	sustainable food and sustainable
	levels	diet is
No rating system developed for	No phasing out of planes with high fuel	Gap in measures for phasing out
individual eco-buildings	consumption levels	export subsidies
Building passport usually does	Gap is devising mobility systems that	No measures to make the
not include such aspects as	combine public transport, taxies, car	environmental consequences of
information on materials,	sharing with biking, IT-based solutions	individual food purchasing
maintenance, upgrading and	(e.g. videoconferencing)	choices visible to end consumers
demolition		
Labelling of buildings is mainly	Not all fuel are taxed in accordance with	No taxation of food products
based on criteria for energy	their life cycle impacts, e.g. marine fuels	with high CO2 impact or with
efficiency		high footprint.
Focus on absolute energy savings	Mobility system is still seen as a system	Gap in measures to reduce meat
instead of energy saving in single	based on private car ownership	consumption, e.g. no action to
appliances in single new		increase VAT on meat products
buildings		
Few minimum energy efficiency	Gap in applying top runner approach for	No action to reduce direct
requirements for household	mobility system: no clear knowledge on	environmental of food and drink
appliances to ensure that energy-	the best types of fuel on the market and	consumption from travel to
intensive appliances do not enter	the best alternative vehicles available	shops, storing, cooking and
the market		waste generation
No incentives for the reduction	Gap in employing alternative and hybrid	No attempt to develop a
of living space m ² /person	solutions, e.g. car sharing and pooling	combined socio-ecological label
		for food products
No stimuli for production of	Very few governmental programmes that	Gap in consumer understanding
renewable energy on public roofs	encourage reduced demand for mobility	of different food related labels,
	with focus on daily travel and commuting	ecological, local produce,
		organic, Fair Trade, etc.
No CO2 emissions trading	Often, mobility is a neglected aspect in	Labelling of the origin of food
scheme for households	public purchasing	for all food products is absent
No differentiated VAT rate for	No differentiated VAT rate for cars of	No concrete targets for food
zero emission buildings	different fuel efficiency and CO2	domain to reduce environmental
	emissions	and social impacts
No concrete targets for housing	No clear allocation of responsibility	Few, if any, measures to
sector to improve its resource	between actors in mobility domain for	investigate or stimulate self-
and energy efficiency	how to reach concrete CO2 reduction	sufficiency of various countries
	targets set up for transport sector	in terms of food supplies

Time frame	Housing	Mobility	Food	Level of change
Short term	Build only energy	Improve public	Identify what	System
Goals: mostly	efficient buildings and	transportation system	sustainable food and	optimisation
agreed	identify ways for	Improve efficiency of	sustainable diet is.	through technical
Means: fairly	retrofitting the	cars and fuels	Identify measures to	solutions,
clear	existing housing stock		satisfy the criteria of	involvement of
Problems:			sustainable diet.	society and
getting all				incentive provision
stakeholders				
moving				
Middle term	Improve construction	Identify and stimulate	Consider self-	System re-design
Goals: mostly	techniques for energy	use of alternative	sufficiency for Europe	Experimenting,
agreed	efficient houses and	transport systems,	for most of the	testing new ideas
Means:	stimulate retrofitting	e.g. car sharing, and	products, devise	in niches,
unclear	of the existing	combinations of the	strategies for sufficient	stimulating self-
Problems:	housing stock with	existing and	supply, avoiding food	organising
specifying	new methods	alternative systems	loses.	capacity
direction and				
identifying				
means				
Long term	Retrofit the entire	Develop integrated	Devise a long term	System innovation
Goals: not	housing stock and	mobility system that	strategy for sustainable	Challenging the
agreed	continuously improve	is reliant on collective	food production and	mainstream
Means: not	efficiency of passive	or shared systems	healthy diets,	systems and
clear	and CO2 neutral	and/or on vehicles	incorporating slow	values, finding
Problems:	newly built houses,	and modes neutral in	food ideas and goals of	alternative ways
challenging	reconsider	terms of CO2 and	moderation, with all	for higher quality
mental models	space/capita and	other environmental	food surplus going to	of life
and prevalent	devise alternative	and social impacts.	other regions of the	
values	ways of living with		world to eradicate	
	increasing share of		malnutrition and	
	collective spaces.		starvation there.	

 Table 0.7: Gap analysis. Short, middle and long-term goals, means and problems with reaching various levels of sustainable consumption and production from a systemic perspective

Instruments	Policy instruments			Business initiatives		
Actors	Administrative	Economic	Informational	Demand side	Supply side	
European Commission	Expand requirements for existing buildings; Develop codes and standards; <i>establish top-</i> <i>runner scheme for</i> <i>building material</i> <i>and houses</i>	Differentiated VAT rate for zero emission buildings; remove VAT on energy efficient materials		Standard development for zero-energy buildings		
National governments	Expand requirements for existing buildings; public production and procurement of renewable energy for public buildings Develop codes and standards; <i>establish top-</i> <i>runner scheme for</i> <i>building material</i> <i>and houses</i>	Energy taxes; subsidy schemes; establish demonstration centres Differentiated VAT rate for zero emission buildings; regressive tax on energy use/person; remove VAT on energy efficient materials	Establish top- runner scheme for building material and houses	Standard development for zero-energy buildings		
Local and regional authorities	Integrated spatial planning; public production and procurement of renewable energy for public buildings; combined heat and power plant			Enable community washing centres and other sustainable home services		
Construction and construction material companies			Continuing education	Require top- runner certified material, standard development for zero-energy buildings proactive use of eco labelled	Participate in standard setting; provision of knowledge in innovative solutions; participate in standard setting	
Energy providers		Establish feed-in tariffs		Education and support for efficient energy consumption; expand eco- tariffs;	Invest in combined heat and power; invest in alternative energy sources;	
Banks		Support for green		Offer special		
Producer and supplier of household appliance		loans		green loans Participation in labelling schemes	Development and supply of high efficient products	

Table 0.8: Conclusions. Recommended Actor and Instrument Matrix Energy use in Housing

Instruments	Policy instruments			Business	initiatives
Actors	Administrative	Economic	Informational	Demand side	Supply side
House			Mandatory	Require top-	
owners			information on	runner	
			energy	certified	
			performance of	material	
			buildings	enable	
				community	
				washing	
				centres and	
				other	
				sustainable	
				home services	
Tenants			Mandatory		
			information on		
			energy		
			performance of		
			buildings		

Note: established instruments; underexplored instruments; innovative instruments

Instruments		Policy instrument	s	Business initiatives		
Actors	Administrative	Economic	Informational	Demand side	Supply side	
European Commission	Top-runner approach		Disassociating mobility from private car ownership; mandatory eco- driving curricula	Efficiency labelling for cars;		
National governments	Speed limits; obligations for non- fossil fuels; top-runner approach; infrastructure for non-car mobility; infrastructure to satisfy human needs locally; public purchase of env. friendly vehicles	Taxation and fuel pricing; support of car sharing	Disassociating mobility from private car ownership; mandatory eco- driving curricula	Efficiency labelling for cars;	Demand alternative fuels and vehicles	
Local and regional authorities	Speed limits; Congestion charges; infrastructure for non-car mobility; infrastructure to satisfy human needs locally; public purchase of env. friendly vehicles	Support of car sharing;	Disassociating mobility from private car ownership		Demand alternative fuels and vehicles	
Car manufacturers		Support of car sharing		Efficiency labelling for cars;	Supply alternative vehicles	
Car dealers				Efficiency labelling for cars;	Supply alternative vehicles	
Public transport companies				Provide mobility services	Demand alternative fuels and vehicles	
Civil society organisations			Disassociating mobility from private car ownership			
Consumer			Information on car performance		Demand alternative fuels and vehicles	

Table 0.9: Conclusions. Recommended Actor and Instrument Matrix Energy use in Mobility

Note: established instruments; underexplored instruments; innovative instruments

Instruments	Policy instruments			Business initiatives	
Actors	Administrative	Economic	Informational	Demand side	Supply side
European	Further	Taxation of	Questioning		
Commission	development of	food products	meat		
	CAP; production	with high	consumption		
	quota on meet	emissions;	levels		
	products	higher VAT on			
	*	meat products			
National	Production quota	Taxation of	Development of	Less meet dishes	
governments	on meet products	food products	national organic	in public	
8	· · · · F · · · · · ·	with high	labels:	canteens	
		emissions:	auestioning meat		
		higher VAT on	consumption		
		meat products	levels: making		
		····· r	environmental		
			consequences of		
			individual food		
			nurchasing		
			choices visible		
Retailers			Making	Development of	
			environmental	national organic	
			consequences of	labels: establish	
			individual food	regional food	
			purchasing	chains	
			choices visible		
Specialised				Establish	
producers and				regional food	
suppliers				chains; food	
				delivery	
				services;	
				consumer	
				producer	
				networks	
Local food				Establish	
suppliers				regional food	
				chains	
Civil society			Questioning		
organisations			meat		
			consumption		
			levels		
Consumer				Demand organic	
				food; demand	
				regional food;	
				choose meet	
				reduced diet	

Table 0.10: Conclusions. Recommended Actor and Instrument Matrix Energy use in Food

Note: established instruments; underexplored instruments; innovative instruments