



Sustainable consumption policy instruments and their impact

Results from case studies and material flow analyses

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Outline

- (1) Effects of SC policy instruments:
Results from 10 European case studies
- (2) Future instrument bundles and their potential impact:
Results from scenario development and material flow analysis

(1)

Effects of SC policy instruments:
Results from 10 European case studies

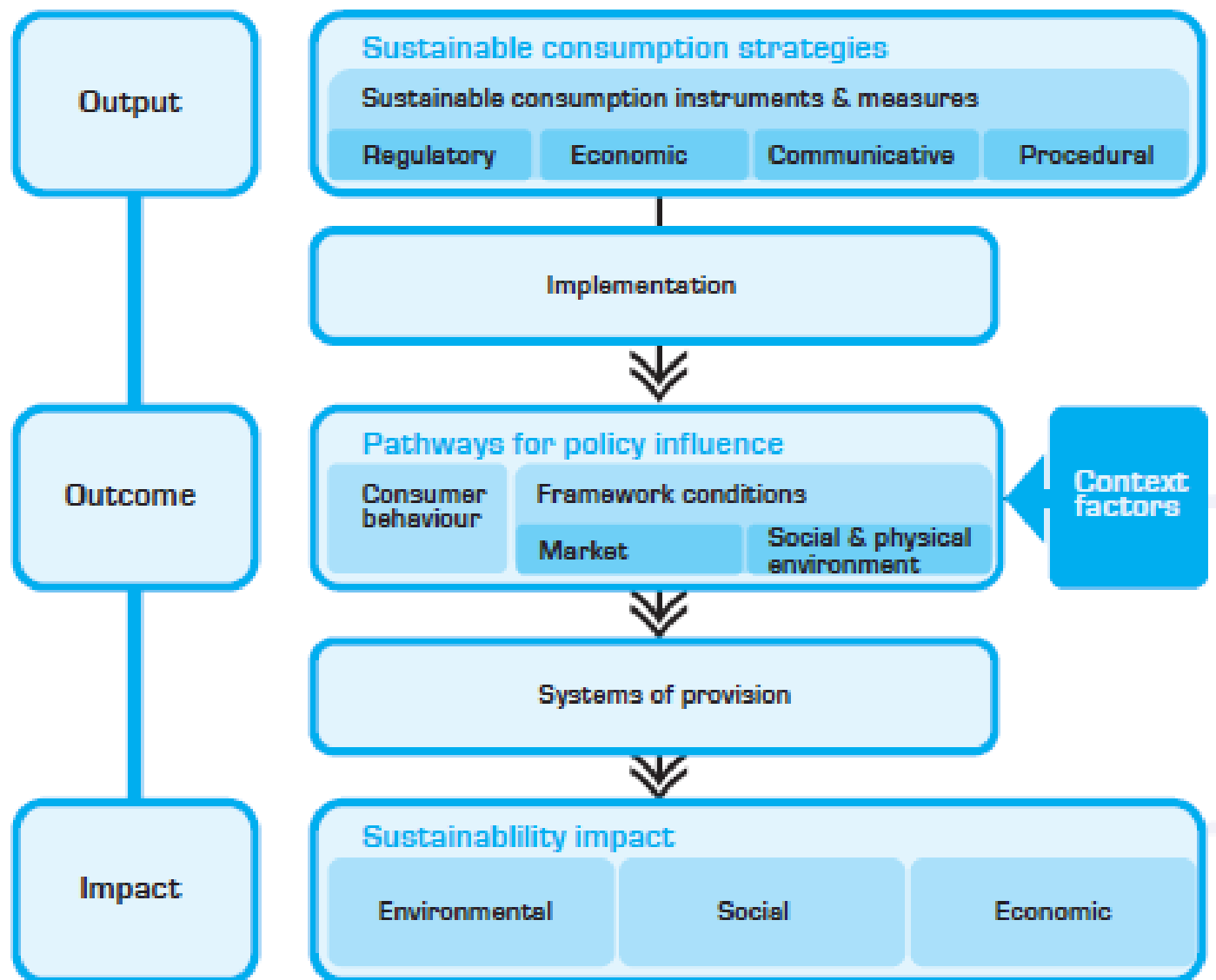
Sustainable consumption policy instruments in EUPOPP



- What instruments did we analyse?
 - mostly public policy instruments
 - explicitly aiming to improve sustainable consumption (SC): purchasing, use, deposal
 - targeting demand side or product policy
 - need areas of housing and food
- How did we analyse them?
 - ten case studies in five EU countries
 - qualitative and quantitative methods
 - common analytical framework



SC policy pathways and instrument effects



Hypothesized success factors of & barriers to instrument effects



Instrument design

- (1) A valid intervention logic
- (2) Accommodation of consumer needs & practices
- (3) Targeting of consumer behaviour & framework conditions of consumption

Policy process

- (4) Stakeholder involvement in instrument design & implementation

Context factors

- (5) Synergetic policy interaction
- (6) A favourable market context

...will increase instrument effects.



The selected instruments



Finland

Germany

Latvia

Spain

UK

Housing

Energy and Environmental Expert scheme (1995)

Mandatory energy efficiency standards for buildings (2009)

Individual heat metering and charging of multi-dwelling residential housing (1995)

Catalan water conservation campaign "Install Me!" (2008)

Carbon Emissions Reduction Target (CERT) (2008-2012)

Outcome: low-med.

Medium

Low

Medium - high

High

Food

Public catering requirements for sustainable meals (2009)

Deposit system for environm. detrimental one-way beverage packaging (2006)

"Quality product" label: national food quality scheme (2001/ 2008)

Selective collection of organic waste in Catalonia (1993)

Report and 'framework for dialogue' by WWF-UK and FEC on reducing livestock-related GHG emissions (2009)

Outcome: Low

Medium

Low

Low - medium

Low



The selected instruments



Finland

Germany

Latvia

Spain

UK

Housing

Energy and Environmental Expert scheme (1995)

Mandatory energy audits

Regulatory

Individual heat metering and charging of multi-dwelling residential housing (1995)

Catalan water conservation campaign "Install Me!" (2008)

Carbon Emissions Reduction Fund

Regulatory

Outcome: low-med.

Medium

Low

Medium - high

High

Food

Public catering requirements for sustainable meals

Economic

Deposit system for environmental products

Economic

"Quality product" label: national food quality scheme (2001/ 2008)

Selective collection of organic waste

Regulatory

Report and 'framework for dialogue' by WWF-UK and FEC on reducing livestock-related GHG emissions (2009)

Outcome: Low

Medium

Low

Low - medium

Low



The selected instruments



Finland

Germany

Latvia

Spain

UK

Housing

Energy and Environmental Expert scheme (1995)

Medium or high outcome

Individual heat metering and charging of multi-dwelling residential housing (1995)

Low

Catalan water conservation plan (2001)

Medium or high outcome

Medium - high

Carbon Emissions Reduction Plan (2009)

Medium or high outcome

High

Outcome: low-med.

Medium

Food

Public catering requirements for schools (2001)

Economic

Outcome: Low

Deposit system for environmental products (2001)

Medium or high outcome

Medium

"Quality product" label: national food quality scheme (2001/ 2008)

Low

Selective collection of organic waste (2001)

Regulatory

Low - medium

Report and 'framework for dialogue' by WWF-UK and FEC on reducing livestock-related GHG emissions (2009)

Low





Success factors and barriers



Intervention logic





- ◻ Intervention logic: ‘ideal’ causal story of how the instrument is intended to work
- ◻ High explanatory power
 - ◻ e.g., (flawed) assumptions on target group behaviour
 - ◻ e.g., stringent mechanisms (quantified targets and timeframes, monitoring, controls, credible sanctions)
- ◻ Examples
 -  Energy efficiency standards for buildings (Ge)
 -  CERT (UK)



Accommodation of consumer needs and practices



- Majority of cases (6/10) support hypothesis
- Instruments were regarded as 'consumer-friendly' when they, e.g.,
 - tie in with consumers' daily routines
 - strengthen their knowledge and capacities
 - account of concrete circumstances in which consumption & investment decisions are taken
- Examples
 -  Individual heat metering (Lv)
 -  Deposit on beverage packaging (Ge)



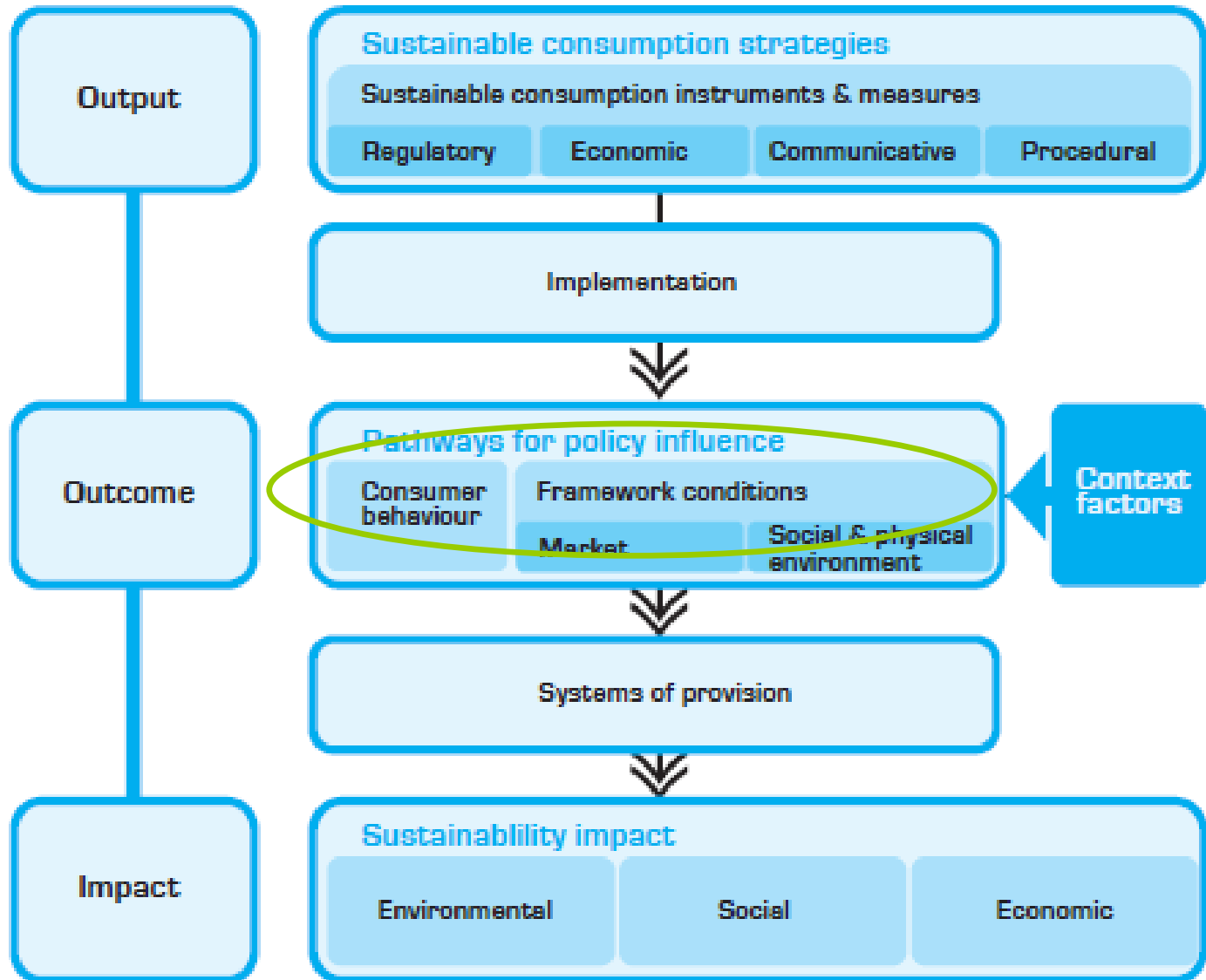
Target dimensions



- Target dimensions:
 - consumer behaviour
 - framework conditions of consumption
- Findings not altogether conclusive
 - but: 3 of the 4 instruments with medium to high performance addressed framework conditions → changes in individual consumer behaviour require enabling systems of provision
- Examples
 - GPP on sustainable meals (Fi)
 - Select. collection of organic waste (Es)





Target dimensions





Stakeholder involvement





- Involvement in:
 - instrument design
 - instrument implementation → 'burden sharing'
- Confirmation for majority of cases
- But:
 - greater representation of industry groups than consumer or environmental interests
 - stakeholder involvement not per se a recipe for success: in some cases stakeholders used their involvement to push for weaker standards in design and to obstruct implementation
- Examples
 -  Deposit for beverage packaging (De)
 -  Water saving campaign (Es/Ct)



Policy interaction



- Policy interaction at level of instrument goals or mechanisms
- Confirmed by almost all cases (& need areas)
 - link between good instrument performance & synergetic (goal-level) policy interaction
 - less frequently: link between weak performance and antagonistic policy interaction, or absence of supporting policies
- Examples
 -  WWF report livestock consumption (UK)
 -  Water saving campaign (Es/Ct)



Market context



- Confirmation: Effectiveness of SC instruments is highly contingent upon favourable market context, e.g.,
 - prices
 - product availability
 - market transparency
 - trust in proper market procedures.
- Examples
 - Heat metering (Lv), Food-GPP (Fi)
 - Instruments for EE in buildings (Fi, Ge, UK)



Additional factors



- Other success factors:
 - transparent political communication
 - devotion of political support or sufficient resources
- Other barriers:
 - budgetary restrictions
 - time-consuming planning and coordination processes
 - demanding social skills in interaction with end-consumers

Conclusions

- ◻ Variety of instruments and 'levers' through which consumption can be influenced
- ◻ Dynamic interaction between consumption and production, and markets and public policies makes steering of consumption very difficult
- ◻ Nevertheless possible to identify lessons
 - "EUPOPP policy recommendations"
 - development of scenarios for material flow analysis re. sustainability impact of future instrument bundles

(2)

Future instrument bundles
and their potential impact:
Results from scenario development
and material flow analysis

Instrument Bundling...

- ◻ to cover more than one consumption phase (purchase, use, disposal)
- ◻ to include various types of instruments which reinforce each other
- ◻ to focus on one group of consumers in a certain consumption “setting” (e.g. catering at school), and on a specific issue (e.g. less meat)
- ◻ ideally be achievable at EU level (transposition of existing national/regional instrument to EU level and combination with existing EU level instruments → optimisation)

Instrument bundle: food



- Increase diet awareness
 - implement a regular vegetarian day per week
 - vegetarian catering in public education
- More sustainable diets
 - levy/tax on meat, health communication
- Increase organic food
 - *GPP + campaigns/social networks; tax incentives*
- Reduce food waste
 - longer shelf life in retail, and customer knowledge on “best use before”

Instrument bundle: housing

- electricity consumption from **use** of appliances (toprunner, improved label)
 - heating requirements from **building** characteristics (optimized EPBD + registry + incentives)
 - heating/hot water systems **choice** (substitution via tax, incentives, “green” quota for new systems& retrofit)
- Instrument bundle for all types of demand and behaviour

EUPOPP Scenarios



- Scenarios: consistent view on possible futures, exploring effects of “what if?”
- Two eupopp scenarios:
 - Reference development with given policies (business as usual = **BAU**) as baseline (comparator)
 - Sustainable Consumption (**SC**), assumes implementing SC instrument “bundles” for food and housing

From Effect to Impact



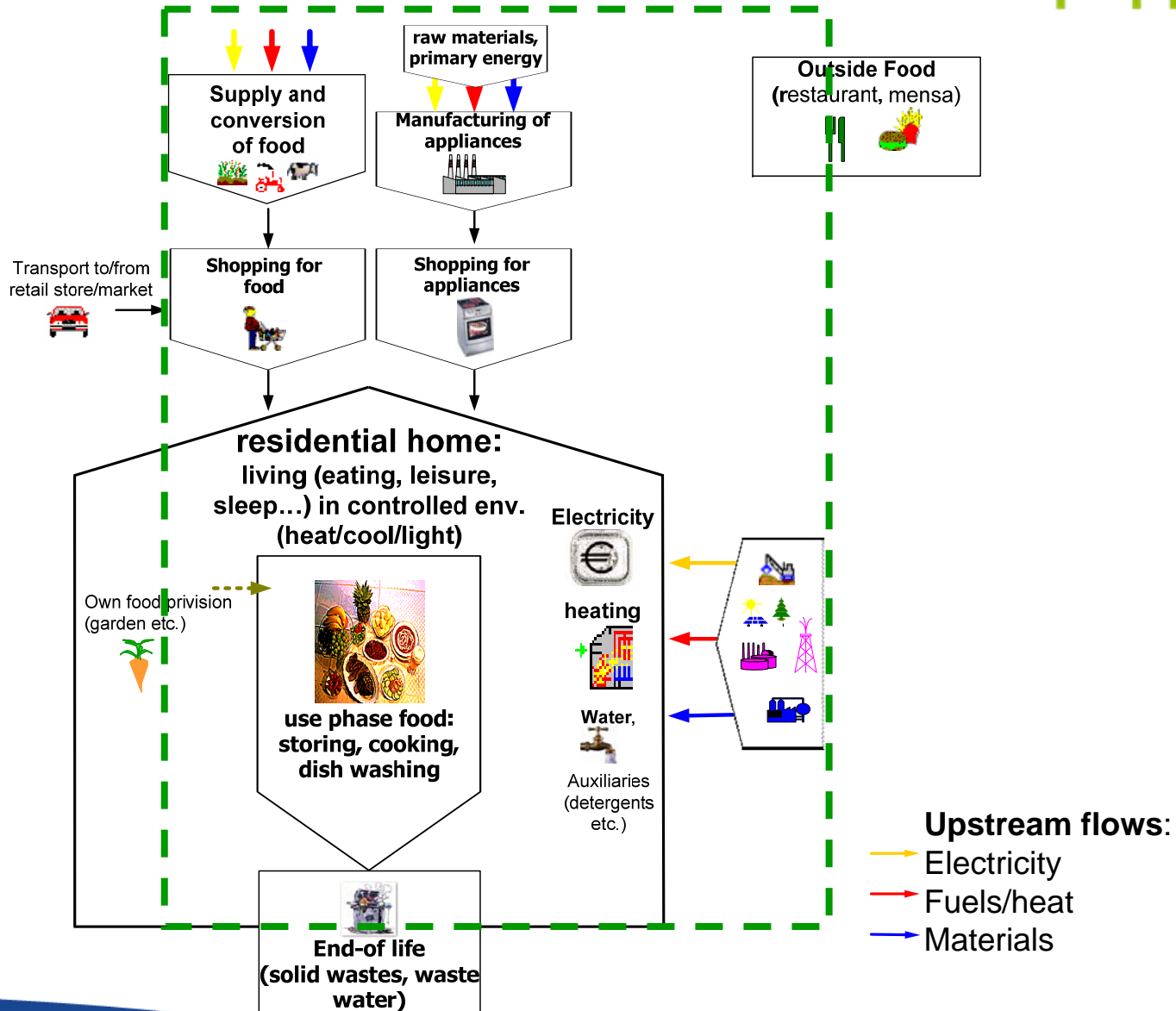
Indicators to assess sustainability impacts

Dimension	Indicator	Expression	
		quantitative	Qualitative
Environment	GHG emissions (CO ₂ , CH ₄ , N ₂ O)	✓	
	Air emissions (SO ₂ , NO _x , particulates)	✓	
	Non-renewable primary energy (coal, gas, oil, uranium) and raw materials (alumina, copper, iron ore, sand etc.)	✓	
	Land use (areal footprint)	✓	
	Agrobiodiversity		✓
	Water use	✓	
Social	Distributional effects (income)	(✓)	✓
	Gender equality (income/living standards, time budget, labour market structure)	(✓)	✓
	Employment	✓	
	Health (e.g. PM ₁₀ emissions, diets)	(✓)	✓
Economy	Costs to households (monetary)	✓	
	Costs to society (monetary)	✓	

Scenarios: SC vs. BAU

- Impact of sustainable consumption (SC) instrument bundles determined by **comparing** SC scenario with BAU
- Impacts are **relative** (incremental) to BAU baseline, include rebound
- Comparison with 2005/2010 also possible, as well as analysis of individual instrument impacts

MFA System Boundaries



SC vs. BAU: Food



2030	unit	BAU	SC-1	SC-2	SC-1 vs. BAU	SC-2 vs. BAU
GHG emissions						
CO ₂ eq	million t	587	568	516	-3%	-12%
CO ₂	million t	192	187	170	-2%	-11%
air emissions						
SO ₂ eq	million t	10,0	9,6	8,8	-4%	-12%
PM ₁₀	million t	0,13	0,13	0,12	-2%	-11%
primary energy						
non-renewable	EJ	2,9	2,9	2,6	-2%	-11%
renewable	EJ	0,3	0,3	0,3	-2%	-11%
raw materials						
non-renewable	million t	58	56	51	-3%	-12%
renewable	million t	2731	2589	2346	-5%	-14%
other indicators						
Land Use	billion m ²	3545	3521	3110	-1%	-12%
Cost	billion €	520	513	510	-1%	-2%

SC vs. BAU: Housing

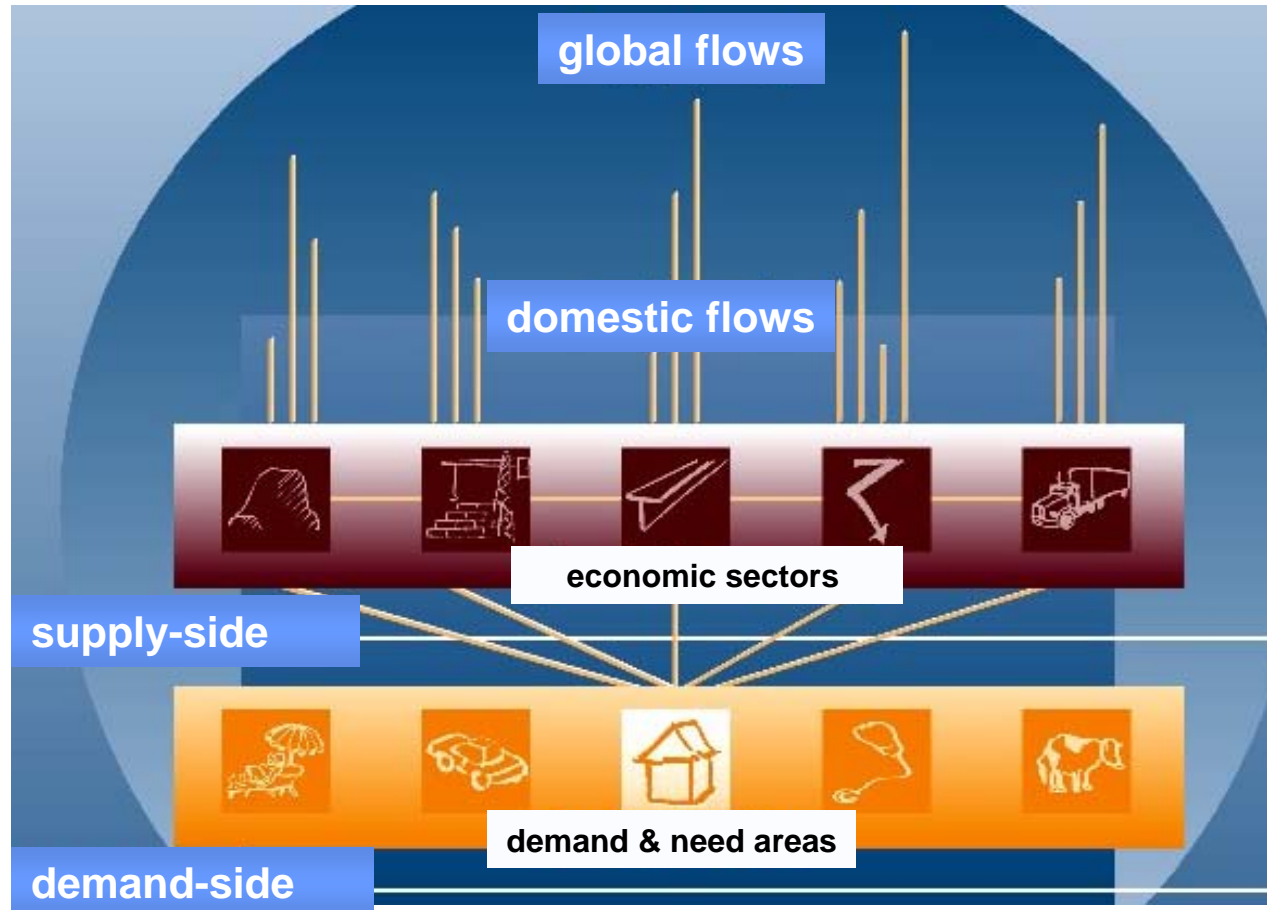


2030	unit	BAU	SC-1	SC-2	SC-1 vs. BAU	SC-2 vs. BAU
GHG emissions						
CO ₂ eq	million t	887	679	646	-23%	-27%
CO ₂	million t	828	632	601	-24%	-27%
air emissions						
SO ₂ eq	million t	1,4	1,3	1,2	-8%	-13%
PM ₁₀	million t	0,14	0,15	0,14	8%	2%
primary energy						
non-renewable	EJ	15,6	11,9	11,3	-24%	-28%
renewable	EJ	5,6	7,1	6,8	28%	21%
raw materials						
non-renewable	million t	33	29	28	-11%	-15%
renewable	million t	1682	1283	1245	-24%	-26%
other indicators						
Land Use	billion m ²	4	4	4	-1%	-6%
Cost	billion €	454	420	399	-7%	-12%

SC vs. BAU: all

2030	unit	BAU	SC-1	SC-2	SC-1 vs. BAU	SC-2 vs. BAU
GHG emissions						
CO ₂ eq	million t	1474	1247	1161	-15%	-21%
CO ₂	million t	1019	819	771	-20%	-24%
air emissions						
SO ₂ eq	million t	11,4	10,9	10,0	-4%	-12%
PM ₁₀	million t	0,27	0,28	0,26	3%	-4%
primary energy						
non-renewable	EJ	18,6	14,7	13,9	-21%	-25%
renewable	EJ	5,9	7,4	7,0	26%	20%
raw materials						
non-renewable	million t	91	85	79	-6%	-13%
renewable	million t	4413	3912	3627	-11%	-18%
other indicators						
Land Use	billion m ²	3550	3525	3114	-1%	-12%
Cost	billion €	973	933	862	-4%	-11%

Local & Global Flows



Cross-sectoral and **cross-boarder** material & energy flows + transports: global interlinkages

SC: International Dimension



BAU	GHG emissions, domestic share in EU-27		
	CO ₂ eq	CO ₂	CH ₄
EU food + housing 2010	92%	92%	86%
EU food + housing 2020	92%	92%	87%
EU food + housing 2030	91%	91%	86%

BAU	air emissions, domestic share of EU-27			
	SO ₂ eq	SO ₂	NO _x	PM ₁₀
EU food + housing 2010	93%	74%	78%	81%
EU food + housing 2020	94%	73%	78%	82%
EU food + housing 2030	94%	64%	75%	77%

BAU	primary energy, domestic share of EU-27		
	total	non renewable	renewable
EU food + housing 2010	56%	49%	99%
EU food + housing 2020	60%	48%	99%
EU food + housing 2030	57%	44%	99%

BAU	rwa materials, domestic share of EU-27		
	total	non renewable	renewable
EU food + housing 2010	52%	80%	52%
EU food + housing 2020	55%	81%	54%
EU food + housing 2030	54%	82%	53%

- Emissions of BAU mainly within EU-27, but significant imports of energy & materials

SC: International Dimension



SC scenarios	GHG emissions, domestic share in EU-27		
	CO ₂ eq	CO ₂	CH ₄
EU food+housing 2010	93%	93%	86%
EU food+housing 2020 SC-1	92%	91%	87%
EU food+housing 2030 SC-1	91%	90%	88%
EU food+housing 2020 SC-2	92%	92%	87%
EU food+housing 2030 SC-2	91%	90%	87%

SC scenarios	air emissions, domestic share of EU-27			
	SO ₂ eq	SO ₂	NO _x	PM ₁₀
EU food+housing 2010	93%	76%	79%	81%
EU food+housing 2020 SC-1	94%	73%	79%	83%
EU food+housing 2030 SC-1	94%	64%	76%	78%
EU food+housing 2020 SC-2	94%	73%	79%	83%
EU food+housing 2030 SC-2	94%	64%	76%	78%

SC scenarios	primary energy, domestic share of EU-27		
	total	non renewable	renewable
EU food+housing 2010	56%	49%	99%
EU food+housing 2020 SC-1	63%	48%	99%
EU food+housing 2030 SC-1	63%	44%	99%
EU food+housing 2020 SC-2	63%	48%	99%
EU food+housing 2030 SC-2	63%	44%	99%

SC scenarios	rwa materials, domestic share of EU-27		
	total	non renewable	renewable
EU food+housing 2010	52%	80%	52%
EU food+housing 2020 SC-1	57%	80%	56%
EU food+housing 2030 SC-1	57%	80%	57%
EU food+housing 2020 SC-2	56%	80%	56%
EU food+housing 2030 SC-2	56%	80%	56%

- Emissions of SC scenarios more within EU-27 than in BAU, with less imports of energy & materials
- no "shift" to other countries!

Thank you!