



EXECUTIVE SUMMARY

The aim of the EUPOPP project is to analyse the effects of sustainable consumption strategies and policy instruments. The focus of EUPOPP is on strategies and instruments targeted at the *demand side* – private and organisational consumption – taking into account the interdependencies between demand-side and supply-side factors. For this purpose, we use an integrative, multidisciplinary conceptual framework that draws on policy science, consumer studies, and material flow analysis. This framework is outlined in Deliverable 1.2 of the EUPOPP project and summarised in the present paper.

The role of unsustainable production and consumption patterns has been on the international policy agenda for more than a decade. Over the last decade, many European governments have developed strategies to promote sustainable consumption, and the European Commission has launched an Action Plan for Sustainable Consumption and Production. Yet relatively few policy instruments directly target consumer behaviour, and most are mostly communication-based, e.g. labels. The one-sidedness of sustainable production and consumption policy to date can be partly attributed to the uncertainties related to the governance of private consumption.

While there is a particular need for research to address sustainable consumption, we acknowledge that consumption is intertwined with production. We define sustainable consumption as *a more ecologically but also socially premised way of buying and using goods and services*. While it is impossible to define sustainable consumption patterns in absolute terms, it is possible to determine consumption patterns that are relatively more sustainable than current trends. In the EUPOPP project, progress toward sustainable consumption is measured using environmental, social and economic criteria. The focus is on two of the major fields of consumption in terms of environmental impacts, i.e., housing and food.

The effects of sustainable consumption strategies and policy instruments depend on a complex network of pathways. Firstly, strategies and policy instruments are realised in various *outputs*, such as laws, regulations, programmes and implementation measures. Secondly, these outputs can result in variable *outcomes* in terms of changes in consumer behaviour (the demand, use and disposal of products and services). Thirdly, the changes in consumer behaviour can have various *impacts* on environmental, economic and social sustainability, which are mediated via changes in production patterns, consumption patterns and entire product systems. In EUPOPP, we address these problems by analysing three pathways: (1) from policy ideas to policy outputs, (2) from policy outputs to policy outcomes and (3) from policy outcomes to sustainability impacts.

From policy idea to policy output

We can trace the pathways from policy idea to policy output by constructing *intervention theories* in order to identify the conditions under which policy ideas can lead to the expected outputs, and eventually, outcomes. Policy instruments are central here, and we define them as the set of techniques of governance by which public and private institutional actors support and effect social change. These instruments include: (1) regulatory instruments, (2) economic instruments (including green public procurement), (3) communication-based instruments (including labelling) and (4) voluntary and procedural instruments.

By defining generic intervention theories for each type of instrument, we have identified particular contextual factors that can influence the success or failure of policy instruments and instrument mixes. These include human resources and capacities, level of knowledge and public opinion, functionality of the market, availability of sustainable products and services, the level of commitment by addressees, the reputation of delivery agencies, as well as trust and capacity for co-operation. Our review of factors influencing success and failure will be complemented by a more detailed analysis. We will also analyse the feasibility and effectiveness of ‘packages’ of policy instruments and hybrid instruments. Inventories will be made of policy instruments for sustainable consumption in Europe, and case studies will be conducted of selected instruments.

From policy output to policy outcome

In order to specify the links between policy outputs (concrete implementation of instruments) and policy outcomes (changes in consumer behaviour), we have reviewed consumer research in economics, psychology, social psychology and sociology. Gender aspects of sustainable consumption are also highlighted¹. Literature suggests that policy instruments can target consumer behaviour directly and indirectly, the latter by changing the market environment or by modifying the social and physical environment of the consumer (Table 1).

¹ Schultz, I. & Stiess, I. (2009) *Gender aspects of sustainable consumption strategies and instruments*. Institut für sozial-ökologische Forschung (ISOE). Deliverable 1.1 of EUPOPP. Online: <http://www.eupopp.net/>

Table 1: Target areas for policy influence on sustainable consumption

Consumers/individual citizens	Market environment	Social and physical environment
<ul style="list-style-type: none"> • Ability and opportunity • Routines and habits • Motivation and norms • Confidence and empowerment 	<ul style="list-style-type: none"> • Prices • Product information • Consumption feedback • Market transparency • Availability of products and services • Use of government market power and example 	<ul style="list-style-type: none"> • Systems of provision • Enabling infrastructures and conditions • Support for local sustainable communities and social groups
Timing and 'windows' of opportunity		

These target areas are interlinked, but policy instruments are frequently designed to target one of them, either positively or negatively. Some mechanisms focus primarily on the *individual* e.g. through incentives, persuasion or support to change attitudes or behaviour. Other mechanisms aim to change *the market environment* by changing the relative prices of products, or by providing information about products, consumers' purchases (feedback) or about the market in total. Policies can aim to change the entire structure of the market by supporting innovative solutions, setting minimum product standards or banning certain products. Government can also use its market power through green public procurement to bring new products into the market and by 'leading by example'. Policies can also influence consumption via the *social and physical environment* by, e.g., providing enabling infrastructures and conditions, such as sustainable urban plans, or by sustainable consumption initiatives in local communities.

From policy outcomes to sustainability impacts

The relationship between consumption patterns and sustainability effects is rarely linear. We can identify a number of mediating chains:

- a. *Changes in consumption patterns usually have an effect on the natural environment only via changes in production patterns.* For example, if consumers substitute green electricity for the electricity mix of their current supplier, this should have an impact on the production of various kinds of electricity, and the ensuing greenhouse gas emissions. There are intervening variables, however: e.g. the impact depends on whether demand for green electricity exceeds the existing supply. The changes in the effects from consumption to production and to

greenhouse gases are not always linear, either, but depend on how the production system adapts to changes in demand.

- b. *Changes in consumption patterns are mediated via changes in other consumption patterns (and then followed by changes in production patterns).* For example, purchasing of more energy efficient appliances should lead to less consumption of electricity. But because it is relatively cheaper to use more energy efficient appliances, they may be used more frequently. This is called a direct rebound effect. Decreased outlays for energy can also lead to changes in the consumption of other commodities. Thus part of the savings in energy is offset by increased consumption of other services. This type of rebound effect is called an indirect rebound effect.
- c. *Long-term structural changes in production and consumption patterns are a further mediating factor.* Savings of energy and natural resources are often partly offset by 'transformational' or 'enabling' effects, which are a further category of rebound effects. For example, efficiency advances in information and communication technologies have increased the demand for more communications and transportation. Another example of transformational effects is the microwave oven, which is energy-efficient for heating food; it has not replaced conventional ovens, but instead engendered a totally new category of ready-to-heat food products.

This discussion does not imply that rebound effects always offset the gains from sustainable consumption policy measures. The opposite kind of positive spin-off effects are also conceivable. However, attention needs to be paid to the intervening variables between changes in consumption patterns and the resulting effects on the environment, society and the economy. In EUPOPP, material flow analysis is used to identify the influence of changes in consumption patterns on other parts of the product life cycle (including dynamic effects such as increase or decrease in the demand for various factors of production). Influences of changes in individual consumption patterns on overall consumption patterns and influences of changes in products and technologies on overall consumption patterns are addressed on a case-by-case basis.

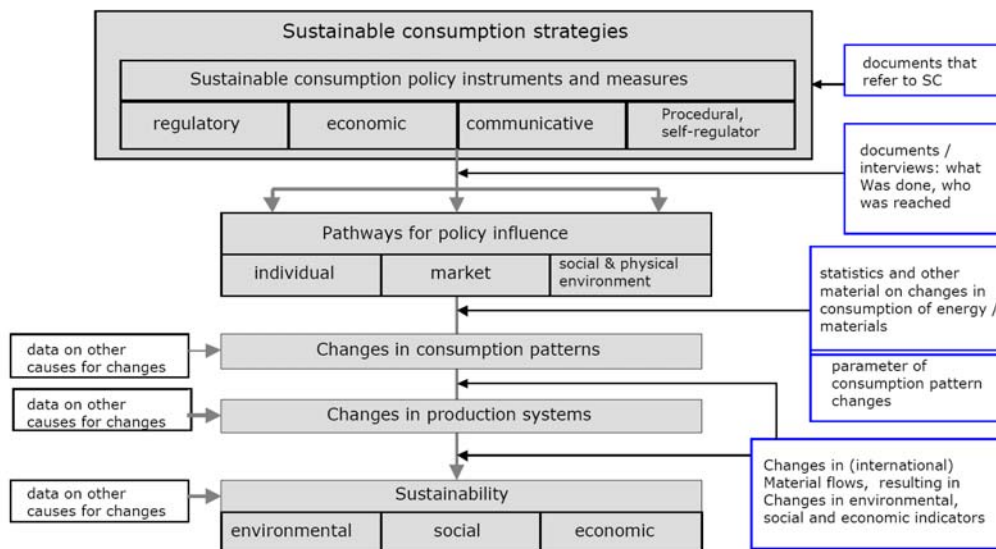
Sustainability impacts are measured in EUPOPP in terms of progress in selected indicators (Table 2). The environmental indicators reflect common policy priorities and pressures from consumption on the environment. We highlight the social dimension of sustainability through indicators that relate to the goals of sustainable consumption policies (equity and quality of life). Because economic analysis of these types of policy instruments is complex, in the economic dimension we focus on the costs of the policies to households and to society.

Table 2. Indicators of progress toward sustainable consumption used in EUPOPP

Environmental	Social	Economic
<ul style="list-style-type: none"> - Greenhouse gas emissions - Non-renewable primary energy use - Land use - Agricultural biodiversity - Raw materials - Water use 	<ul style="list-style-type: none"> - Distributional effects on income/living standards - Gender equality (income/living standards, time budget, gender labour market structure) - Employment - Health 	<ul style="list-style-type: none"> - Costs to households - Costs to society

Implications for empirical assessment

The framework outlined above provides the following empirical analysis scheme for the EUPOPP project (Figure 1). Firstly, the relevant policies are identified and described using documents that refer to sustainable consumption. The policy output is measured by analysing documents and, where appropriate, interviews to identify how the policy was implemented and what pathways were used to influence consumption. The policy outcome is measured using statistics and other information on changes in consumption of energy and materials, or when appropriate, other indicators of consumption pattern changes. The gathered information is then filtered and assessed through an Impact Assessment tool. The link between changes in consumption patterns and changes in production patterns and the resulting sustainability impacts is modelled using material flow analysis to derive the impact of the policies on key indicators of sustainability.



Secondly, it is recognized that policies for sustainable consumption are not the only factor influencing the changes in consumption and production patterns or the sustainability impacts. They are influenced by many factors such as economic, technological and socio-demographic developments. We acknowledge context as a crucial element that makes the mechanism of the intervention work.

The successfulness of policies can be evaluated in terms of goal achievement or using external parameters (results-based evaluation). We primarily rely on 'results-based evaluation' in order to address the total impacts of packages of sustainable consumption policy instruments. A further step is necessary to isolate the outcomes and impacts due to sustainable consumption policies from other factors also exerting an influence on our observed measures. These factors are taken into account in defining the baseline (business-as-usual scenario), and then estimating the incremental impact of the policy against the baseline.

Finally, the impacts are translated into quantitative indicators (e.g., greenhouse gas emissions, costs). For this, the material flow analysis will be used both for the baseline and for the policy scenario. The difference between the two is then the effect (impact) of the policy. EUPOPP aims to 'test' various assumptions on the quantitative links between policies and impacts, and also consider several baselines (business-as-usual scenarios) to estimate uncertainty.