CASUAL
Co-creating Attractive and Sustainable Urban Areas and Lifestyles

WP 1-2: Critical review of urban sustainable policies and assessment

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Introduction

This paper aims to synthesise how the sustainable city and lifestyle is being addressed in different urban policy documents in Europe. The aim of this report is to contribute to an understanding of the different approaches to sustainable urban policy in European cities. To this end, the analysis intends to illustrate how the production and consumption side in cities (or city-regions) are addressed in different policy documents. This will be exemplified by eight city-regions in the Netherlands, Austria and Sweden. Since policies are not only integrated horizontally, but also vertically, the analysis includes also EU and national policy documents. The peculiar ways by which sustainable development policies mediate between the production and the consumption of the built environment, has been investigated with the following determinants in mind. A first determinant is **policy design** of types and bundles of measures, communication and participation processes and how they are formally integrated in strategies to influence consumer behaviour. A second determinant is **the openness of traditional top-down policy paradigms to innovative bottom-up approaches,** and the possibility for such approaches to influence strategic policy making.

1 Overview of approaches and tools towards sustainable city and lifestyle on the local level

In the following part of this paper we aim to briefly introduce the reader to the policy and academic discussion around the governance of sustainable production and consumption on the local level. These conceptual delimitations will help us to define our approach to the area of policy research on sustainable consumption and inform our methodological investigation into the policy documents for the latter parts of the report. For this purpose it will be necessary to

- discuss the concept of sustainability and sustainable consumption as an engine of policy integration in urban development and spatial planning policies all around Europe (1.1)
- briefly explain the focus on lifestyle and consumer behaviour in relation to the integration of sustainable urban development as a policy ideal (1.2)
- elaborate on the design of policy instrumentation for sustainable development policy (1.3)

1.1 Approaching integrated sustainable production and consumption (SPC) on the local level

Sustainable consumption and production are important concepts in the policy debate around sustainability. Ever since the 1992 Rio Summit, the question of unsustainable consumption practices and behaviour has played a dominant role in discussions around sustainable development policy. Chapter 4 of Agenda 21, the main sustainable development policy document to emerge from the "Earth Summit" held in Rio is entitled "Changing Consumption Patterns" and it addresses the unsustainable nature of modern industrialized societies' consumption patterns (UNCED, 1992). With the design of the Marrakech Process at Johannesburg in 2002, a global process to support the elaboration of a 10-Year Framework of Programs (10YFP) on sustainable consumption and production, policy-makers internationally showed their enduring commitment towards the issues related to sustainable production and consumption (SPC). At EU level, SPC has been added as a further "priority challenge" to the EU Sustainable Development Strategy, alongside issues climate change and clean energy; and sustainable transport (EEB 2009).

Cities have come to be understood as the territorial level on which tackling questions related to sustainable production and consumption is most effective. Of the established areas of policy development, urban and transport planning are often marked out as having the greatest potential to successfully shape sustainable lifestyles and behaviour. By signing the Charter of European Sustainable Cities and Towns towards Sustainability (Aalborg Charta) in 1994, cities obliged themselves to integrate the concept of sustainability into all policy fields and planning practices. Policy focus on SPC results from the realization that behaviour has direct social and environmental effects on the achievement of sustainable development objectives in urban transport and housing. The focus on sustainable consumption and production implies a willingness to change unsustainable patterns through a focus on behaviour (EC 2012, SED 2003).

Despite wide spread policy consensus around the idea of achieving sustainable urban development through change of unsustainable behaviour in mobility & transport and housing & living, there is no unanimous agreement on how best to achieve this.

Differences in the way that policies approach the question of production and consumption are founded on contrasting understandings of the aims and goals of sustainable production and consumption. Policies aiming at transforming unsustainable behaviour in Housing and Mobility have often been guided by the idea that it suffices to consume more, more efficiently, rather than less or differently. As an effect of eco-efficiency, sustainable consumption is thought of nothing but greater sustainability in the way we produce the built environment rather than as a change of the values that sustain behaviour. But in terms of eco-efficiency, policies have had difficulties to address "rebound effects", where the consumption of ever more resources in the wake of technological developments outpaces their potentially positive effects. On the level of the EU for instance, a White Paper on Integrated Product Policy was for some time after the Rio Summit "as close as it wanted to get to addressing consumption "(SDC 2003)

Box 1: Defining sustainable consumption

Since the Rio summit, contrasting definitions of sustainable consumption have emerged. They embody a differential emphasis both on the role of production and consumption and the importance of lifestyle as a policy lever. A list of these definitions can be seen below.

The use of goods and services that respond to basic needs and bring a better quality of life, while minimizing the use of natural resources, toxic materials and emissions of waste and pollutants over the lifecycle, so as not to jeopardize the needs of future generations (Ofstad, *1994*).

The special focus of sustainable consumption is on the economic activity of choosing, using, and disposing of goods and services and how this can be changed to bring social and environmental benefit. (*IIED 1999*).

Sustainable consumption means we have to use resources to meet our basic needs and not use resources in excess of what we need. (*Participant definition, Kabelvåg, IIED 1998*)

Sustainable consumption is not about consuming less, it is about consuming differently, consuming efficiently, and having an improved quality of life. (*UNEP 1999*).

Sustainable consumption is consumption that supports the ability of current and future generations to meet their material and other needs, without causing irreversible damage to the environment or loss of function in natural systems (*OCSC 1999*).

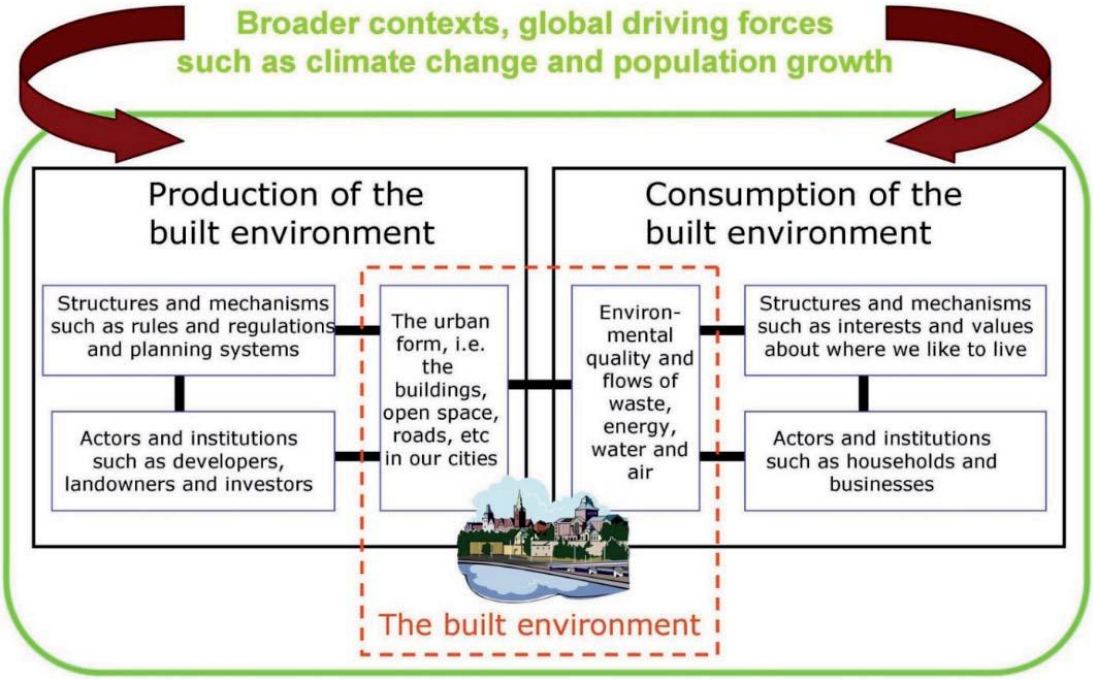
Sustainable consumption is an umbrella term that brings together a number of key issues, such as meeting needs, enhancing quality of life, improving efficiency, minimising waste, taking a lifecycle perspective and taking into account the equity dimension; integrating these components parts in the central question of how to provide the same or better services to meet the basic requirements of life and the aspiration for improvement, for both current and future generations, while continually reducing environmental damage and the risk to human health (*UNEP 2001*)

Source: SEC 2003, pp. 14

In contrast, the SUME project was founded on a model of sustainable spatial planning giving equal weight to the structures shaping the production and consumption of the built environment and the agency of actors that continually use, consume and reproduce it. Following Davudi et. al., the sustainable consumption of the built environment cannot be fully explained either in terms of the rational choice of agent or their cultural habits and routines, but

must be accounted for in the mutual constitution of both explanations. As such, policies that aim to change consumption preferences of the built environment, for instance towards high density compact form type of urban dwellings, cannot contend themselves with providing users with rational economic incentives they need to complement and adapt these incentives with a deep understanding of the social context that influences agent's preferences for low density living, that is the specific context in which, what Davudi et. al. call, "unsustainable behaviour" arises(Davoudi S. et al (2009)).

Figure 1: The new model of development processes with detailed breakdown of the factors affecting the development process



Source: UNEW/TU-Delft, FP-7-Project SUME, 2011

In this view, an integrated model of the built environment is build on a set of principles of infrastructure provision that sustainable urban development policy should be guided by and a set of procedural principles that will combined to allow a greater ability of policies to tackle unsustainable behaviour. In breaking with the subjective-objective dichotomy in the constitution of the built environment, the SUME model founds itself thus on a definition of urban sustainability in the explicit transgression of the dualism between urban form and behaviour; the break with a conception of social, economic and environmental factors conceived in isolation from each other; the transcendence of vertical segregation and the fostering of horizontal integration in policy formulation; and, finally, the mutual coexistence of supply and demand side measures in the shaping of sustainable built environments (Davoudi S. et all (2009))

Principles for the sustainable production of built urban environment

In SUME, **four principles for sustainable urban infrastructure provision that satisfy an integrated perspective of consumption and production** were identified (Schremmer et al 2010, SUME project, Deliverable 1.2, p. A13):

- **Higher densities and compact development** by supporting residential building types with higher densities (beyond single family houses) in case of (re)construction and thus avoid urban sprawl. This concept supports a lower degree of land consumption and helps to protect the surrounding natural areas. Further it enables to decrease or stabilize distances and thus decreases the energy consumption for transport as well as the material consumption for technical infrastructure. Moreover the energy consumption of housing can be reduced, as in general coupled houses need less heating energy than free-standing houses.
- **Public transport accessibility and focus of densities along (high capacity) public transport lines.** This enhances the possibilities to provide more efficient and attractive public transport services in the same way for housing, economy and social infrastructure.
- **Mixed-use development** and polycentric distribution of ancillary functions of daily use (shopping and services). In a region with a well mix of functions, all facilities should be reachable in short distances which is a pre-requisite for eco-friendly transport modes like walking and cycling.
- **Improvement of the thermal quality** in the existing and new building stock should in principal lead to a decrease in the specific energy demand for space heating (and cooling). However there are trade-offs between the energy savings in space heating and the energy embodied in the material input for infrastructure and technologies.

Principles for an integrated sustainable production and consumption policy

The greater need for and focus on policy integration is a direct result of the recognition that the challenge of sustainable development on the local level needs to address both structures and the agencies that sustain them. In accordance with this integrated urban planning paradigm, SUME recommends **three procedural principles** for the definition of integrated sustainable urban policies on the local level(Davoudi S. et all (2009):

- **Policies should be cross-sectoral:** Policies should be produced in the sharing of decision making competencies at different levels of government and experiment new forms of partnership and networks which govern within, between and across these levels, in order to allow for an integrated vision of sustainable urban development to take hold.
- **Policies should target all relevant actors:** Policies should integrate and involve all actors and citizens affected by a particular measure, in order to satisfy the balance between those that produce and those that consume the built environment.
- **Policies should address users lifestyles** Policies should be tailored to the needs and behaviours of specific actors and their interests as much as possible, in order to increase their ability to address unsustainable consumption of the built environment.

Together these policy principles build the framework for a process of continual policy integration in the governance of the sustainable built environment on the local level.

After having briefly defined the turn towards sustainable consumption and the use that has been made of it in integrated models of the built environment, the following part aims to more specifically describe the role that sustainable lifestyles play in the turn towards sustainable consumption.

1.2 Sustainable consumption policy and the focus on lifestyles

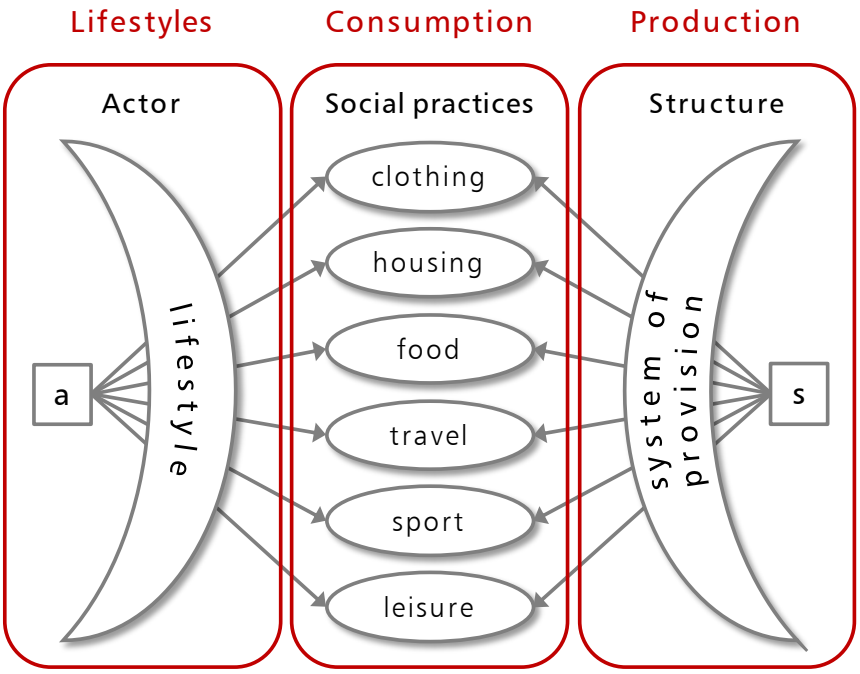
Focus on lifestyle has changed the way we think about mobility, housing & living in the contemporary city. In its reference to lifestyle, contemporary sociology denominates the increasing **decoupling of individual preferences from traditional structures of social differentiation** and inequality. Research on lifestyles examines the self-proclaimed life plans of individuals which insert themselves in a generalized pluralisation of individual pathways and cultural orientations. This approach contrasts the methods arguing from structural inequalities: Questions of income or profession, markers of vertical differences, are in the context of lifestyle research clearly relegated to the background in favour of horizontal indicators such as **education, gender or age as factors influencing lifestyle choices, such as the consumption of energy, mobility choices and residential location (Beckmann et al 2006).**

An understanding of sustainable lifestyles has since the Agenda21 process been part and parcel of policies addressing sustainable consumption and production- they are commonly understood "as patterns of action and consumption, used by people to affiliate and differentiate themselves from others, which: meet basic needs, provide a better quality of life, minimize the use of natural resources and emissions of waste and pollutants over the lifecycle, and do not jeopardize the needs of future generations" (Mont, 20071)

Understanding lifestyles is important to understand changing unsustainable behaviour. Sustainable consumption policy commonly founds itself on the hypothesis that there is a bias of measures in terms of strict production of urban form, ignoring the unknown capabilities emanating from citizens, communities and consumers at large, that these policies stimulate and foster. We appear to be locked into current consumption patterns by a combination of market incentives, psychology and conditioning, social structures and norms, institutional frameworks, cultural values and narratives.

Consumption practices are shaped both by the lifestyle choices of individuals and the system of provisions that make these practices possible. Sustainable development policies do not address consumption practices with instruments working on the actor side alone. This is illustrated in Figure 2 below.

Figure 2: Factors shaping consumption practices



Source: ÖIR, adapted from Spaargaren 2003 pp.689

Policies directly and indirectly shape consumption practices, for they may be conceived both as a set of production and consumption side interventions, combining infrastructural and cultural perspectives on the production and consumption of the built environment.

Policy documents as way to produce the sustainable city

On one side, policy documents can be understood as a set of objectives, strategies and measures targeting the technological infrastructures that structure the ability of actors to change their consumption patterns. Starting from an analysis of lifestyles, a policy for the fostering of sustainable consumption can use the "system of provision" as an effective leverage on consumption practices. The pluralisation and privatization of local markets mean that more options are given to actors than before, whether that concerns choice of mobility or choice of type of energy supply for heating and electricity. Smart Metering is a practical example for infrastructures that give more opportunities to customers in the regulation of their household energy consumption behaviour, than would have been possible before. This may be named the "infrastructural perspective", producing a certain image of the sustainable city.

Policy documents as a way to produce sustainable lifestyles

At the same time a policy can be understood as a set of objectives, strategies and measures targeting the values that structure the ability of a particular social group or individual to evaluate and change their daily routines. To agree with Spaargaren, one is in search of a policy language "reducing the complexity of sustainable consumption in such a way that it fits the practical logic of daily life" (Spaargaren 2003 pp. 690). The targeted nature of intended efforts based on the assessment of lifestyle has often been pointed out as an

important factor in policy success. Policies that focus on consumption change have targeted their instruments towards different lifestyles and distinguish themselves by sometimes extensive empirical investigation into the market for their policy measure. Communication may imply reductions of emissions according to existing conventions (lower carbon emissions) or it may directly demand citizens to change their conventions. This may be named the "cultural perspective, creating normas and conventions framing sustainable lifestyles

To understand the social practices forming consumption behaviour on the local level one needs to understand both "cultural" and "infrastructural" perspectives. An integrated perspective on changing unsustainable behaviour through addressing lifestyle choices may have to give equal weight to infrastructures promoting choice and methods for understanding and targeting policy measures towards particular culturally induced patterns of consumption (Spargaaren 2003, pp. 697).

After having briefly defined the role that a focus on lifestyles plays in the turn towards sustainable consumption in sustainable urban policy documents and, the following part examines how policies can approach the question of lifestyle-guide change of consumption behaviour.

1.3 Instruments of sustainable development policy

The design of sustainable consumption and production policy crucially depends on the interaction of classic and new policy approaches. Classic policy and approach instruments indirectly and directly influence the choices of consumers, even if they do not typically target the change of cultural values sustaining consumption behaviour. We can commonly distinguish between the following classic set of policy tools and instruments that shape the behaviour of agents:

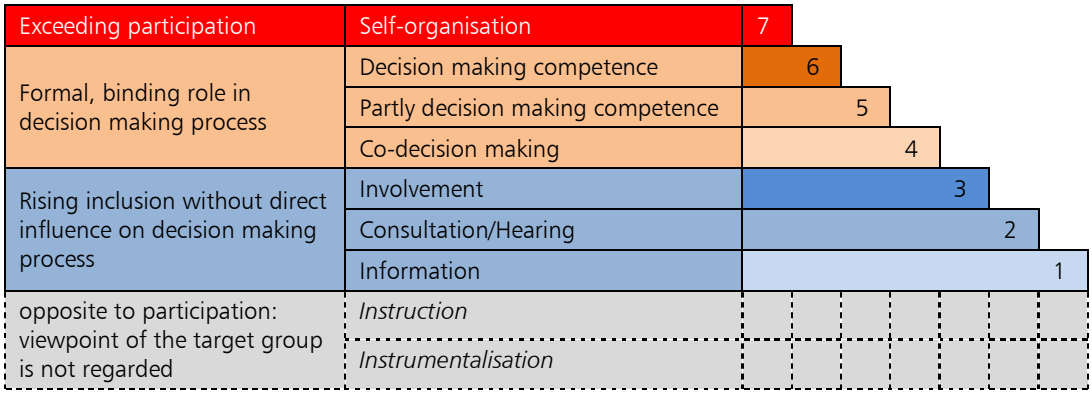
- **Regulatory instruments**: Regulatory tools aim at influencing consumer behaviour through laws, directives and regulations. Regulatory tools generally target local/national authorities, producers or retailers, rather than consumers e.g. ban on incandescent light bulbs, EU waste directive.
- **Economic Instruments**: Economic tools are market-based instruments, mainly employed by governments to influence and monitor the economy by adjusting taxes and/or public spending (expenditure). Economic tools often influence the price of goods and services, and directly distort consumer preferences Example: Congestion tax.
- **Information and awareness raising**: Information provision and awareness raising tools are those that aim at providing information on a product or service (e.g. product qualities, certification, how to use the product, etc.) to consumers, with the hope that informing the consumer or raising awareness about certain product attributes will influence consumer behaviour. Example: Public information campaign on behaviour in public transport

New instruments and partnerships have especially aimed at targeting change of values through engaging citizens and interests groups that have traditionally been excluded in the process of policy making. The question of citizen participation occupies a special role in

the ability of policies to influence consumption behaviour. Because complex environmental and sustainability challenges are linked to broad drivers such as increases in wealth and consumption trends, addressing these challenges necessitates engagement of citizens in a conversation on values and action as part of the policy process. We have seen the emergence of a category of policy tools that directly targets deliberation on the values and reasons sustaining the consumption of the built environment. These tools directly aim at influencing consumer behaviour (e.g. targeting consumers' feelings, influence of others, influence of social norms, etc.). Example include for instance citizen juries; deliberative fora; media campaigns, online user networks etc

The form of participation varies in different processes from mere information to more active forms of contribution and co-operative decision making to autonomous self administration (Wright, Block, Unger 2008). The Arnstein Ladder distinguishes seven levels of participation (see figure below). The higher the level of participation, the more citizens can influence the process. The lower levels allow less active integration of citizens but create the necessary basis on which the higher levels of participation rely. To clear our understanding of participation the figure also shows approaches which might be confound with participation processes but do not harmonize with the idea of participation: In our understanding **instrumentalisation** and **instruction** are no forms of participation, as they do not include the point of view of the target groups, but focus on the interests of decision makers. E.g. public relations measures for fixed decisions seek for public support. Further self-organisation is not regarded, as it is exceeding participation.

Figure 3: Levels of participation



ÖIR based on Wright/Block/von Unger 2008 and Sherry Arnstein 1969.

In our perception of participatory processes awareness raising is like information a basic element of participation. The Arnstein ladder does not refer to **awareness raising** but compared to mere information, awareness raising is a step further. Awareness raising and information methods merge seamlessly and are not always clearly to be distinguished. But in general we can say that awareness raising takes a more active role and focuses much more on the change of behaviour and consumption. The aim of awareness raising is to promote the visibility and credibility of certain issues within a community or society. To raise awareness means besides informing, to educate people about a topic or issue with the intention to influence their attitudes, behaviours and beliefs towards the achievement of a defined purpose (Sayers, Richard, 2006). By fostering understanding of backgrounds and different viewpoints, it is an important pillar on which higher levels of public participation can be built on. In contrast to information, awareness raising often is geared towards the initialisation of a reflection processes.

The design of sustainable development policy on the local level will be conceived as a combination of a bundled set of top-down classic strategic policy instruments working with a set of bottom-up instruments that allow some degree of participation of citizens and other stakeholders in the policy process.

Having defined how an integrated perspective on the shaping of lifestyles, consumption and production practices may translate into a particular set of policy instruments, the following chapter will summarize our discussion towards a tentative conceptual framework for policy analysis, and explain our approach and methodology to examine this question.

2 Structure of the report and general methodology

In the following part we will briefly elaborate on our understanding of the ability of policies to address lifestyles and sustainable consumption practices. This will allow us to present the reader with the structure of the report, our methodology and some methodological limitations.

2.1 How policies to address sustainable city and lifestyles

In the last chapter we have tried to conceptually delimit our area of investigation into the concept of sustainability and consumption and production in urban development policies to several observations:

(a) The translation of the concept of sustainability into spatial planning practice entailed an unprecedented integration of policy fields' actors and processes that can be accounted for in a set of several principles of sustainable urban planning related to the compact urban form ideal.

(b) The focus on sustainable consumption is strongly related to an integrated view of the built environment. Sustainable consumption is shaped both by lifestyles and the system of provision that sustainable policies define.

(c) While it is possible to differentiate in principle which measures address urban form (regulations and infrastructure provision are production side measures) and which the consumption of the built environment (financial incentives, standards and codes as well as public information campaigns are measures of consumption side), it is **the way that measures are integrated with others, how they are discursively framed and how they apply the above mentioned sustainable development principles that ideally determines their ability to change consumption patterns**.

(d) The greater the openness towards innovative bottom-up led approaches, the greater the chances that policy is informed by local knowledge. Sustainable consumption policy is marked by the temporal existence of strategy and implementation in a set of projects of social mobilization embedded in broader reference frameworks that make these projects possible. **Studying the sustainable consumption policy on the local level means thus to analyse the projects as vehicles of social mobilization and the reference frameworks that make these projects possible.**

These observations, supported by some examples of policies that have tried to address behaviour and the outcomes of the SUME project, can lead us to the following set triad of general questions into the form of sustainable policy on the local level:

- How are categories of instruments combined into bundles to mediate between consumption and production side that comprise measures that engage, encourage and enable sustainable consumption behaviour?
- What do policies do to target a specific audience with a specific message in accordance with the lifestyle group that is addressed?

- What extent of engagement of stakeholders and actors through participatory and engaging instruments do policies allow?
- How do policies include non-standardized approaches to target behaviour and consumption into strategic policy practices on the city-wide level?

These guiding observations can lead us to the following definition of the ability of a sustainable urban development policy to address the sustainable consumption through a focus on lifestyles of actors:

A sustainable urban development policy demonstrates its ability to change consumption patterns in a sustainable manner in its capacity ***to inform the choices of actors*** *and enhance their capability to choose by measures enabling, encouraging and engaging choice, discursively and procedurally relating the complexity of sustainability policy to the logic of daily life and designing a system of* ***provision*** *that structurally provides choice for more sustainable living.*

Guided by these definitions, we will examine policies aiming at sustainable urban development in Europe with a particular focus on Sweden, Austria and the Netherlands. Guided by our understanding of the ability of policies to foster consumption change we have divided our analysis into two main parts:

(1) An analysis of **urban policy documents** of selected cities in Sweden, Austria and the Netherlands.

(2) An analysis of bundles of measures and projects

2.2 Analysis of urban policy documents

From the vantage point of **urban policy documents, the first part** will study the continual integration of ideas, policy sectors, actors and instruments in relation to sustainability, and aim to define a set of convergence and divergence patterns between the policies studied. The output will be a set of general conclusions on how policies understand sustainability, how cross-sectoral policies are and what they do to integrate citizens into the policy process.

Our analysis of urban policy documents will be guided by the following questions

(1) How are the different dimensions of sustainability combined in the objectives of the analysed policy documents?

(2) How are different policies fields and areas integrated?

(3) To what extent are stakeholders and citizens integrated in policy processes?

Our analysis is structured in four parts

- The objectives of policy documents in relation to the dimensions of sustainability,
- The principles that guide production and consumption of the built environment
- The governance of stakeholder involvement
- The governance of citizen participation

Selection of policy documents

All documents studied are strategic policy documents. We have selected this type of documents for several reasons:

- they entertain a certain degree of authority over other policy documents, and set the context for specific local projects and measures.
- they address a wide variety of different planning fields and can be used to diagnose the general tendency towards integrated sustainable urban policy making.

For our analysis we have selected the following policy documents:

Austria	Salzburg	Spatial Development Concept
	Graz	Comprehensive Plan (STEK 4.0) Participation project "Time for Graz"
	Vorarlberg	Vision Rheintal
	Vienna	Comprehensive Plan (STEP05, STEP 2025), Masterplan Transport, KLIP II
Sweden	Göteborg	Comprehensive Plan for Gothenburg, Heading for a Greener Region
	Stockholm	Walkable City Plan, RUFS 2010, Sustainable Energy Action Plans (SEAP) Plan Transport??
The Nether-lands	Amsterdam/Randstad	Amsterdam 2040, SEAP; Amsterdam Structural Plan,
	Rotterdam	Sustainable Energy Action Plans (SEAP)

Source: ÖIR

2.3 An analysis of bundles of measures and projects

Part two will study a selected set of **bundles of measures or projects** from sustainable urban development policies first from a macro-logical perspective looking at several city wide policy documents, and second, looking at particular policy examples in Vienna and Stockholm in more detail. The output of part two will be a description of the process and context in which these bundles of measures and projects emerged and an evaluation of the impact that these particular measures had on the behaviour and consumption change.

The **study of the policy design** will be founded on a two part structure.

In the first part, we will look at a set of measures in Housing and Mobility in city wide strategies and compare policies according to the ambitions and objectives they have to transform consumption, they way they strategically target certain user groups and try to involve them in policy making process

Methodologically the analysis of the integration of production and consumption to foster behaviour change will be conducted through textual and pictographic analysis of bundles of measures in the areas of housing & living and mobility & transport.

This should help us to describe how policies:

- bundled to categories of measures to effectively mediate between consumption and production side
- are targeted towards a specific audience with a specific message in accordance with the lifestyle group that is addressed.

In the second part we aim evaluate the effectiveness of a selected set of measures of sustainable consumption policy in Vienna and Stockholm with regards to their effects on output that is their ability to affect and trigger change in consumer behaviour. The analysis aims to verify and sharpen the conclusions formulated of part 1, by looking at several examples of policy in Vienna and Stockholm in more detail.

The analysis for each city is structured along two parts.

- A first part will resume the city specific results that have emerged form part 1.
- In a second part we will analyse two bundles of measures from each city in housing & living and mobility & transport.

This comparison of both analyses should help us to gain some results on what determines policy design

- **both in terms of the balance and type of measures used**
- **as well as the integration of these measures in city wide strategic aims and policies.**

The findings from our analysis of urban policy documents will inform our discussion of measures in part 2, and the results from our impact evaluation of bundles of measures will feedback into our general synthesis concerning the ability of policies to change consumption patterns and address lifestyles.

We will in this context particularly concentrate on the areas of **housing & living** and **mobility & transport,** because they are often mentioned as areas where behaviour change is most important in relation to sustainability.

For every document we used the following analytical grid to determine the above mentioned contents in the housing & living and transport & mobility part. For this purpose, measures were first filtered according to their propensity to foster consumption and then categorized in either consumption side or production side interventions.

Every type of instrument can both work on the production and consumption side, impacts on sustainable consumption are both determined by the diversity of tools used to sustain policy in a particular sector and the use of new participatory tools that particularly work on the consumption side. Participatory tools as well as the expected impact on sustainable consumption are considered to have no expression on the production side, the fields are thus kept in grey.

Table 1: Analysis grid for measures addressing lifestyle choice

[CITY] Housing & Living		Production side	Consumption side
Objectives, operational targets, policy priorities			
Measures	Regulations		
	Infrastructure provision		
	Financial incentives (opportunities)		
	Restrictions/Enabling measures		
	Awareness raising		
	Participatory tools		
	Expected impact on sustainable consumption		

Source: ÖIR

Selection of policy document

All documents in this part are city wide policy documents and evaluations and descriptions of particular policy projects and measures in the area of Transport and Housing. We have selected these documents for the following reasons.

- The analysis of concrete policy examples is a better indicator of the targeted nature of policy and the degree of social mobilization permitted and wanted,
- The analysis of concrete measures and policy examples and their evaluations will allow us to illustrate some impact of policies on behavioural choices and changes.
- The analysis of these documents will allow us to sharpen our understanding of the differences in the sectors of mobility & transport.

Table 2: Selection of policy documents

City	Policy	Source
Vienna	Parkraumbewirtschaftung (Parking space regulation)	"Entscheidungsgrundlagen für die Ausweitung der Parkraum-bewirtschaftung in Wien"(MA18 2012) https://www.wien.gv.at/verkehr/parken/kurzparkzonen/
	Vienna Bike City	Fahrradfreundliche Wohnbauten(MA50 2012)
Stock-holm	Congestion charge policy	Eliasson, Jonas, "Lessons from the congestion charging trial" Expert group Summary, "The Stockholm congestion charging trial what happened?", http://www.stockholmsforsoket.se/upload/Rapporter/Expert_group_summary_060621.pdf Börjesson et al (2012) "The Stockholm congestion charges – 5 years on. Effects, acceptability and lessons learnt" Transport Policy, Volume 20, March 2012, Pages 1–12
	Sustainable Järva	"Stockholm: sustainable Järva", http://cityclimateleadershipawards.com/stockholm-sustainable-jarva/, last update unknown. "Sustainable Järva", http://www.re-green.eu/en/go/green-building-leading-cases1, last update unknown. Rutherford Jonathan(2008) Unbundling Stockholm: The networks, planning and social welfare nexus beyond the unitary city, in Geoforum Volume 39, Issue 6, November 2008, Pages 1871–1883

The comparison of results from urban policy documents and analysis of pilot projects and particular examples should allow us to formulate some conclusions about the status of sustainable consumption in urban policy practice, particularly whether these approaches successfully influence regular policy making or position themselves as exceptions.

2.4 Limits of our analysis

At this point we want to mention several limitations to the significance of our analysis.

(1) The shift to sustainable policy integration in the process of sustainable urban development policy does not impose itself on already existing government structures or institutional planning cultures without resistance, since it is clearly embedded in historically defined boundaries of responsibilities between levels of government and within the different administrative units of municipalities themselves. While rhetorically concepts of vertical and horizontal integration find their natural place in virtually all contemporary sustainable urban policy documents analysed, some differences between policies are difficult to detect without any closer empirical investigation of the cultural and mostly informal practices sustaining the process of policy formulation as such.

(2) At the same time, policy efforts insert themselves into an always already existing set of infrastructures in the built environment, so that the quality of a behavioural instrument cannot be conceived of as independent of it. Where a transport infrastructure is already good and provides choice between different modes, the likelihood of impact on sustainable behaviour is higher even though the reasons are not explicitly target of policy change.

Without an analysis of the level of infrastructure provision existing in a given city, the ability of policies can only be represented in terms of their formal correspondence to an ideal definition of how sustainable consumption policy should look like. **That is the below presented analysis can in no way be understood as an impact evaluation of particular instruments and policies but as a policy review in the area of sustainable consumption and production**.

3 Analysis of sustainable policy integration in urban development policy documents from Austria, Sweden and the Netherlands

In the following part we aim to analyse policy documents in Sweden, Austria and the Netherlands in the context of the process of sustainable policy integration described above.

In the first part of this chapter 13 policy documents of eight cities are analysed to identify how the **concept of sustainability** is addressed and conceptualized. Complementary to the SUME principles of sustainable urban planning, other concepts might be identified. It will give us an idea how the process of policy integration translates into the combination of different policy fields. **Particular importance will be given to the role and importance of the social dimension as an indicator of how the social levers of sustainability are addressed.**

In the second part, we will look at the principles of infrastructural provision by which these policies operate. We will analyse how they correspond to the SUME principles for sustainable infrastructure provision. **This will allow us to say whether the image of urban form propagated in these strategies is more or less informed by considerations for sustainable choice.**

In the third part analyses the implementation of **sustainable policy integration in the working process of making the policy**. In other words, we will look at how policy documents articulate the process of putting urban sustainable policy "on paper". We will analyse **the image of the policy process that policymakers aim to propagate of sustainable urban policy to others through policy documents.** One part of this analysis focuses on the way that stakeholders are integrated in the policy process.

In a fourth part we will look at the policy documents in the way they integrate citizens (as residents) through participatory instruments and tools. Particular importance will be given to openness of processes towards non-traditional actors such as NGOs and others of civil society- **We will investigate the way that these are integrated, whether these target particular lifestyle groups and whether they aim to change consumption behaviour.**

3.1 Objectives and rationales of policy documents in relation to the dimensions of sustainability

In the following, the rationales and objectives of the policy documents are described and broken down by the dimensions of sustainable development – economy, ecology and society regarding future generations. The aspect of good governance is discussed in the chapters 2.3. and 2.4. The aim of this part will be to analyse the understanding of sustainability more specifically with regards to the importance of the social dimensions of sustainability, for, as we assume, there exists a positive correlation between the emphasis on the social dimensions of sustainability and the openness towards addressing lifestyles and changes in sustainable consumption.

Future generations

The question of how to develop a city so that **future generations find the same opportunities** and chances is regarded in different intensity. Some cities directly refer to this principle and state that *"acting considering the interests of future generations"* is important and that a *"sustainable city development puts the common wealth of the society on a long-term perspective in front of the short-term interests of individual"* (City of Graz, 2012). Others cities admit that to follow this principle *"all stakeholders involved have to be aware and accept that this means to afford the expenses of such a development* (City of Vienna, 2014).

The economic dimension

Despite the positive outlook of growth, each city faces competition on a European scale and has to maintain and expand its qualities in order to stay competitive. Cities are thus struggling to be get commercial and financial services located in their business centres. The sectors of production and innovation are increasingly interesting for cities in recent years and the aim is to accommodate the headquarters of important branches. (STEP 2005)

The economic aim for all cities and regions analysed thus is to be attractive to investors (developers, landowners, etc.), which looks strongly at the production side of the built environment. The objectives are to safeguard and improve the infrastructural and local based framework conditions in order to allow the further development of competitive economic, education and research institutions. These framework conditions comprise provision of state-of-the-art **utilities infrastructure** (clean water, energy provision, waste and wastewater treatment, flood protection, logistic centres and alike) as well as **transport accessibility**.

Some comprehensive plans, such as SEAP Rotterdam, give particular importance to the quality of sustainable infrastructures as attractors of outside investment. In some plans, they can indeed be characterized as a set of "consumptive amenities", that is as infrastructures that should make cities more enjoyable and attractive to the consumption preferences of particular user groups. In Amsterdam, for instance, particular importance will be given to making the city attractive to the young and talented, and the provision of sustainable walking and cycling infrastructure plays a particular role in this regard. In other plans(KLIPII; STEP05, GRAZ STEK), attraction of outside populations is not as targeted to specific preference groups- sustainability is not a similarly understood as a lifestyle choice and location preference.

Reasonably priced areas are required from developers to create new or enlarge existing housing areas. The costs of land are generally interlinked with the prices of the apartments to be built and thus have indirectly a social and a consumption side aspect. Comprehensive plans answer traditionally to the demand for land to be developed by zoning of development areas and the designation of future (transport) infrastructure as well as by protecting green spaces.

The economic dimension further pays deference to the fact that a competitive region is also a region with a good image and a good quality of life for residents, labour, visitors and persons moving to these cities. This includes the provision of a variety of housing and workplaces, well-developed services and a broad range of culture and entertainment (Stockholm City Plan).

In general the economic aspect of sustainability targets the production of the built environment. The consumption side is addressed only indirectly.

The ecologic dimension

In general, the ecologic dimension of urban planning acts on the maxim that all development should be designed in a way that minimises the impacts of the environment. In praxis, human actions like the developing settlements clearly have a strong impact on the environment; be it in displacing or impacting plants and animals or by sealing the natural earth. Consequently, even a minimized impact may still be a strong impact on the ecology, depending of the size of the project and the prior use of the area.

Within the urban context, green spaces and public areas are strongly seen as places for **recreation** and as a substitute for the "untouched" landscape provided by rural settlements. This is strongly evident with slogans like **"social green"** (City of Graz), **"natural and historic environments that attract"** or **"access to the coast"** (Gothenburg, comprehensive plan). Further, green spaces safeguard or allow for a pleasant micro-climate both in form of large, connected green open spaces or even woods as well as in form of increased stock of trees, e.g. **roadside greenery** (Graz). Profound ecologic preservation is rather covered by national or federal programmes, e.g. Natura 2000 initiatives and alike. All in all, the aims often concentrate on **protecting the existing green infrastructure** (parks, woods, green spaces, open spaces, etc.), but also mention the creation of more green spaces and the improvement of the biodiversity. Objectives in this direction can be found in all policy documents screened, from environmental objectives (Sweden) to comprehensive plans to even some programmes on sustainability and climate change (e.g. in Rotterdam or Vienna, but not in Stockholm and Gothenburg). Green infrastructure is also connected with the social needs of open space which links it to the social dimension (see below). Another aspect in the policy document is the **improvement of the air quality,** which targets the housing as well as the transport sector. For both the aim is to reduce the emissions of CO_2, greenhouse gases and other pollutants (particles).

- In the housing sector the approaches include **energy efficient retrofitting** of buildings (STEP05, KLIP II, Gothenburg Heading for a greener region). Further, cities started to construct **new buildings according to low energy and passive house standards** with several pilot projects (e.g. Gothenburg). Others adjust the pre-requisites for funding accordingly (Vienna, KLIP II). Additionally, the documents mention the aim to produce **heat and electricity** in an (more) environment friendly way and to simultaneously enlarge the **district heating networks,** especially in the SEAPs. Heat and energy production shall shift from fossil fuels to renewable sources (waste in Vienna, waste heat and wood pellets in Stockholm and Gothenburg). Complementary, cities and private persons invest in solar panels and wind power plants, the latter are mostly located outside the city borders (SEAPs).
- As regards the transport sector, the aim is to create an **urban** structure **supporting environmental friendly modes** that leads to only **limited use of the car** (Stockholm, Walkable City Plan). In particular the urban structure should allow expanding public transport lines and should provide an agreeable environment for walking and cycling. Further the use of less exhaustive cars (e-mobility) for "not preventable" car trips is envisaged (Vienna).

Other important ecologic topics are the **recycling and treatment of waste and wastewater.**

In all these attempts of the economic dimension, the focus lies on the production side of the built environment.

The social dimension

In general all documents speak of improvements in the **provision of space and accessibility for social infrastructure** (education, art and culture, leisure and sports, health).

The social dimension of transport is related to the design of transport infrastructure and the quality of transport services. The objectives raised are to ensure **comfortable public spaces** along roads and to allow for **social control** and thus security (Graz). Insecure, badly visible roads and "tunnel" situations shall be avoided (Graz). Other documents refer to the enhancement of security in the region as a general challenge (Stockholm region). Apart of the security issue, the aim is to make public transport accessible to all.

The social dimension is strongly considered related to housing & living. There are several similar approaches in this regard, but the planning doctrines can vary significantly between the cities. The main planning aims of the cities are described in the following.

- Most cities intend to provide of green areas allowing for social integration and non-commercial leisure facilities. E.g. the City of Graz calls for more **"social green",** meaning green and open spaces for different user groups. Attractive public spaces are also planned to be a meeting place for people of different background (Stockholm Region). Vienna mentions that public spaces shall provide facilities for different user groups and indicate that participation becomes increasingly important in order to negotiate the conflicts between user demands (STEP2025).
- The idea of providing social green goes hand in hand with the intention to strengthen **neighbourhood-relations** through the creation of common open spaces and projects at the district level. The aim is to initiate a common identity of neighbourhood (Graz, Vienna, Stockholm Region). Special pilot projects shall facilitate the integration e.g. of minorities. Other policy documents envisage projects facilitating the exchange between the young and the elderly inhabitants (Graz).
- The social dimension can also be linked to the call for **"adaptable housing"** e.g. apartments that can be adjusted to the needs of demographic changes and the groups of elderly people, smaller households or people with special needs (Graz).
- Others cities count on the devotion of a certain amount of apartments to special focus groups; e.g. in Stockholm, one in ten rental properties is set aside for older people, students, disabled people or young people. (Stockholm, Walkable City Plan p.25).
- In Vienna, the provision of **"affordable" housing** is a major topic. The city acts as developer to provide social housing and there are several non-profit developers providing funded housing. Subsidised apartments are intended to be well distributed within the city in order to promote **social cohesion,** e.g. penthouses on top of subsidised housing are sold to higher income groups.
- In general the aspect of **"social cohesion"** is strongly addressed in the regional plan of Stockholm. The objectives comprise the building on trust between the citizens of the city region and a high confidence into social bodies (RUFS 2010). This includes the

equal treatment of all citizens, which is also found in other policy documents (e.g. STEP 2025). However, the aim in the Stockholm region is clear on the spatial context, aiming at **reducing the existing social segregation** of people with different background. Here, social diversity is intended to increase by more varied forms of housing within an area as well as better transport connections between different parts of the region. (RUFS, 2010). In this context it has to be pointed out that – even if often in line with the municipal planning of the City of Stockholm itself – the RUFS has less power to implement policies, municipalities in Sweden enjoy strong decision making competence. Social segregation can thus only be reduced, if the municipalities encourage and promote corresponding actions.

- The City of Stockholm promotes social cohesion in terms of a better integration into the labour market, **providing better education and good language training** as well as more jobs and greater support for entrepreneurship. This is a general aim and a thematic emphasis of new development areas (e.g. Vision Järva). In contrast to Vienna, the problem of prices in the housing market is left to the market and the "hope" that newly built apartments will initiate a movement of higher income groups (from old to new apartments) and will leave the old flats to the people with less financial means.
- Lifestyles play some role in the formulation of objectives of comprehensive plans. STEP025 heuristically defines the principle that should guide city development in terms of personal attributes that relate to gender (gender-just city) or openness (the world-open city) or the social justice (the socially just city). It is thus an interesting example for how objectives in comprehensive plans can make the social dimension and questions of lifestyle integral to the very vision that the city is guided by. A similar phenomenon can be seen with Stockholm's Walking City, where a comprehensive plan vision is heuristically related to the walking experience and lifestyle as a reference point. This in strong contrast with older strategies such as STEP05, where questions of life quality and lifestyle are peripheral to the overall achievement of urban strategy, and are formally and textually segregated with questions of sustainability or economic concerns.

Conclusions

The analysis of the understanding of sustainability in the different strategies allows us to make several concluding remarks.

- The production side plays a dominant role in all objectives analysed, as it is mainly targeting the provision of the built environment. Only partially, the consumption side is addressed: Once in the social dimension when it comes to projects facilitating the use of existing open spaces to improve neighbourhood relations and once when it comes to the reduction of greenhouse gas emissions through transport. Here the fostering of ecologic friendly transport modes is mentioned, but mostly in terms of infrastructure provision.
- All comprehensive plans illustrate identical intentions for fostering economic development through variations of an "amenity driven growth" model. The Dutch strategies analysed give particular importance to the quality of sustainable infrastructures as attractors of outside investment. In some plans, they can indeed be characterized as a set of "consumptive amenities", that is as infrastructures that should

make cities more enjoyable and attractive to the consumption preferences of particular user groups. Some comprehensive plans (especially the Austrian strategies analysed) do not make use of sustainability as an objective of addressing particular lifestyle groups. Sustainable infrastructures are in this regard less being conceived as "consumptive amenities" than in other cities.

- All comprehensive plans are characterized by similar ambitions to reduce the negative consequences on the environment. Dimensions in the **improvement of the air quality,** green spaces and public areas, **recycling and treatment of waste and wastewater**. Heating and cooling have been identified as recurrent topics in the documents analysed. In the way that the ecological dimension integrates itself with other objectives of strategic plans, no country specific differences can be detected in this regard. For some strategies (STEP2025, SEAP Rotterdam) the ecological dimension is very clearly integrated with economic and social questions. In others (STEP05, GrazSTEK04) they are clearly segregated from other areas, and mostly thought through progress in specific systems of provision. Overall, the strategies make use of an integrated understanding of the ecological dimension.
- The social dimension plays a role in the objectives of all comprehensive plans examined. They way that the topic is approached markedly differs between the strategies. In some cities strategies to foster "affordable housing" have changed to strategies fostering "adaptable housing" adjusted to certain lifestyle groups and needs. While this indicates a certain shift in the appreciation of consumer perspectives in social infrastructure provision, there is, with a few exceptions, a marked absence of dimensions of sustainability in relation to urban social policy.

Generally, it must be stated, that, with the notable exception STEP2025 and SEAP Rotterdam, no explicit objective towards the fostering of sustainable urban development through behaviour change can be found on the level of overall strategic aims of the city wide strategies examined. The documents, however, indicate at points that they are aware of different lifestyles and their lack of information on the consumption behaviour of its inhabitants, e.g. STEP2025 envisages the creation of user profiles of for public spaces for all user groups. Stockholm already posses planning data (e.g. Stockholm's Sociotope Map, see Stahle, Sandberg 2002) about how people in Stockholm use and value public parks, but sees the need to "increase its knowledge of local needs and, in collaboration with administrations and companies, study long-term aims for how the urban environment is to be managed and developed" (Stockholm Walkable City Plan, p. 48).

3.2 Principles guiding the production of the built environment

We have argued that the more integrated the understanding of policy fields and areas in certain principles of sustainable planning, the higher the likelihood that sustainable development can have an effect on consumption practices. In the following part we will analyse the set of policy documents with a special focus on the integration of principles of infrastructural provision.

Urban planning is widely perceived as a trans-disciplinary task affecting several aspects of urban interactions. In the planning policy documents it is often stated that *"many different interests must co-exist in large parts of the urban environment*" (RUFS 2010). Consequently, different

policy fields – and the interests of several stakeholders – are combined in the policy documents analysed. All policy documents analysed comprise – to different extent – the policy fields housing, environmental urban mobility, green and public space as well as energy for housing and mobility (including renewable energy production).

In the following, the policy documents are analysed to see how the above stated **sustainable urban planning principles** take shape in different cities and how their formulations take into account the procedural principle of being cross-sectoral. Supplementary to the four SUME principles, two further principles are analysed. They were found in the policy documents and also show an integrative, cross sectoral approach: the principle of providing "social green" as well as "education and access to the labour market".

Principle of high densities and compact development

All cities studied in the frame of this project are growing cities affronted with urban sprawl – some within the city's borders, but certainly all within the metropolitan region. In order to be or stay attractive, but at the same time assure a good quality of life, each city has to find ways to qualitatively develop higher densities and compact urban structures. This is seen as a pre-requisite for promoting short distance and non-motorized trips in the city. E.g. in Stockholm's Walkable City plan it is stated that "a dense and concentrated city encourages walking and cycling, and promotes the need for reliable public transport" (p. 22).

Further, compact urban structures are crucial to safeguard larger green spaces as recreation and environmental protection zones. The demand for new land to develop has to be kept within limits and new apartments or flats shall rather be developed within the existing settlement borders, than sprawling into the open, undeveloped space.

The combination of policy fields to achieve sustainable development is influenced by the existing urban structure.

In cities where the quality of life is jeopardised by very high densities, e.g. in Athens, a sustainable combination of policy fields might result in measures focusing on de-compression of the existing built structure in favour for more green and open spaces in the central districts. However, the relocation of housing should – in line with the principles – account for moderate densification in the city's outskirts and a poly-centric structure.

Box 2: Dense development (and polycentricism) in Stockholm Walkable City

> The idea behind a more polycentric structure (of the region) is to exploit growth potential across the county in a sustainable and effective way (p. 9).
>
> Sustainable growth and development towards a world-class Stockholm demand a better balance between the different parts of the city than is currently the case. The city therefore needs to support the development of a polycentric structure with dense and high-amenity nodes in the outer city (p. 39).

Further key questions of where to locate compact development and what policy fields are combined can depend on the city's geographical embedding. Influenced by its geographical situation, the Rotterdam Programme of Sustainability and Climate Change e.g. emphasis the

need of flood prevention as essential if Rotterdam wants to become a sustainable delta city. Likewise the region of Gothenburg points out that development has to be avoided in geological unstable areas and has to regard rising water levels, but at the same time prevention measures against extreme weather conditions, e.g. floods, has to be improved.

Public transport accessibility and concentration of urban development to public transport lines

The choice of transport mode is determined by the incentives offered to use it. The most crucial stimulus for the use of public transport, and a fundamental pre-requisite to use it, is the convenient accessibility of high quality services. Vice versa high capacity public transport services (e.g. metros) can only be provided efficiently, if they face a significant quantity of users.

Thus, many strategies of growing cities include measures to encourage the use of high capacity public transport modes by improving journey times and reliability of services (Stockholm) as well as the access to public transport interchanges (Stockholm, Vienna, Gothenburg, etc.)

Some policy documents point out that a good public transport should already be in place before new areas are adopted (Gothenborg, comprehensive plan). This concept was definitely realized for the new development area "Aspern Seestadt" in Vienna. Here the underground is already connecting an area at the very start of the construction of a new city district, while the road network is limited to low capacity roads. The future will show, if this concepts (together with other measures) pays of in higher share of public transport.

The importance of the railway connection as a backbone for further development was also stressed by the joint development perspective of the "Rheintal" in the West of Austria and the East of Switzerland. It was stated that new settlements and densification is to be concentrated in the catchment area of stations along the railway line. Similar approaches are followed by the Stockholm region and the Region of Gothenburg.

Mixed-use development

Regardless of the conflicts of interest that may arise due to the proximity of different uses, the attractiveness of cities is – among others – determined by their complex mix of uses and a "vibrant city life". Thus, a mix of functions is advocated in all policy documents, though mentioned in different context and meaning.

One aim is to create more densely populated mixed function areas in the city (SEAP Gothenburg). For a start the **mix of housing, working and shopping facilities** ensures animated city areas that are utilised from the early morning to the late evening and thus create a vibrant and secure environment (Gothenburg, Stockholm). Further, a mix of these functions allows for **short distance trips** in daily routines, which are more likely made by foot, bicycle or public transport than large distance trips. A mix of functions is thus an important prerequisite for environmental friendly transport use.

An aim in Vienna is to facilitate the establishment of businesses and shops within the built structure, using the slogan "city space for business ambitions" ("Stadträume für

Unternehmensträume"). Enhanced prerequisites for businesses and shops shall be provided in new city areas like greater ceiling heights and designated areas for non-housing use in ground-floor zones. Additionally, new utilities are in focus of city development, like innovative research enterprises that shall be integrated into the mixed-used city set-up (e.g. STEP2025).

Box 3: Mixed and dense development in Stockholm Walkable City

> In the future, too, the shared vision for the urban development areas in the city centre must be for high-density, attractive, mixed-use neighbourhoods with high-quality buildings and public spaces (p. 36).

Some policy documents go as far as connect the provision of a mixed-use neighbourhood as an additional principle for a functioning sustainable development (Stockholm Walkable City).

Improvement of the thermal quality

In order to improve the climate impact from housing, the existing building stock has to be revised according to today's technical standards. Thermal retro-fitting is included as measure of SEAPs, but also included into comprehensive plans. E.g. Vienna includes subsidies for thermal retro-fitting into its comprehensive plan (STEP05), Stockholm examines practices for retro-fitting in pilot projects (e.g. in Järva),

Social green

Apart from a diverse use of the built structure, the maintenance or creation of **green and public spaces** is a complementary, cross sectoral approach to densification. Green and open spaces imply the integration of recreation functions and are especially important in denser areas with little place for individual recreation space and small apartments. Apart from mere space, they provide amelioration of the micro-climate and consequently have a positive effect to health, too.

Frequently, dense housing areas with little provision of green infrastructure are inhabited by residents with lower-income. The creation of attractive and green public spaces has thus a social aspect and such areas are even attributed **"social green"** (Graz). The social aspect is further underlined by some policy documents which mention, that the needs of different people (for the functions covered by public spaces) have to be discovered and addressed through more dialogue in the planning process (Gothenburg, Graz).

Social stability and diversity – sometimes even stronger described as "social cohesion" (RUFS 2010) – is seen as a major challenge for sustainable urban development. Regarded from another angle, public space has the potential of bringing together different groups of people, which is often claimed as a social aspect of sustainable urban development. In this context the design of "public space" shall provide **"opportunities to meet"** or enable the **"bridging of barriers between city districts"** (Gothenburg).

Education and access to labour market

The latest policy documents apply more attention to education and innovation. On the one hand the development of innovative environments for research and enterprise that are highly competitive internationally shall be supported to strengthen the economic position of the city (Stockholm, Vienna). On the other hand education and good language training are important public services and also mentioned as means of integration and social cohesion. Good education is seen as pre-requisite for integration into the labour market and being part of the economic life enhances chances of social integration (Stockholm). In order to be effective, the development of new education facilities must be planned together with housing and demographic forecasts for new development (Stockholm).

The same aspect of integrating urban development (of new areas) and the provision of educational infrastructure can be found in other cities, e.g. Vienna. STEP2025 states that investments into schools and similar infrastructure are always investments into the equality of chances in the professional life. However, the emphasis on this topic is not as strong as in Stockholm.

Conclusions

From the analysis of the conceptual layout in different planning documents, it is apparent that the sustainable urban planning principles combine different policy fields. Arguing from the description of the principles in the policy documents alone, one can conclude that defining them already points to a visible cross-sectoral approach of urban planning. The setting of the particular location plan however depends on the existing urban structure as well as the geographical embedding of the city. Table sums up how the policy fields are combined within the planning principles:

- The principle of high densities and compact development combines the policy fields housing, energy (denser buildings need less heating energy), mobility (denser buildings can be more easily supplied with public transport, walking and cycling) and the protection of landscape and/or green space (compact development eases the pressure on larger green areas).
- Public transport accessibility combines the provision of transport, housing (oriented to the transport infrastructure), social (accessibility for all social groups) and economy (make businesses accessibly by public transport).
- Mixed-use development per se aims at spatially combining different sectors within the city
- Improvement of the thermal quality combines housing with the energy sector
- Social green is a special aspects of integrating social issues with housing and transport (public green spaces in walking distance of housing)

Table 1: Integration of policy fields within the sustainable urban planning principles

Policy field	SUME sustainable urban planning principles				Additional principles found in the documents	
	High densities and compact development	Public transport accessibility	Mixed-use development	Improvement of the thermal quality	Social green	Education and access to labour market
Provision of housing	X	X	X	X	X	X
Energy for housing	X			X		
Provision of mobility & transport	X	X	X		X	
Energy for transport	X	X	X			X
Green structure and landscape	X		X		X	
Social		X	X		X	
Education			X			X
Economy and labour market		X	X			X

Source: ÖIR

All policy documents screened include the principles compact development, public transport accessibility, mixed-use development and social green. Especially mixed-use development is seen as a pre-requisite to create an attractive, "vibrant" city. Social green shall facilitate "social cohesion", be it of people of different ages (young and old) or different social backgrounds. Interestingly, the main conflicts in use between social groups are not discussed in within the strategies, e.g. the demand for silent and save recreational green of elderly people versus the demand for zones to play of the youngest generation.

An important difference is the approach in Stockholm, integrating the topic of education and access to labour to urban planning. This reflects the strong problems with segregation in certain areas of the city and the will to break the existing structures up. Vienna, in contrast, is using social housing and subsided housing since decades, to ensure for social integration. Thus, this topic is not as much mentioned in the documents, even if a lot of effort and money is continuously devoted to it.

Despite of this content-wise integrative approach, it is not said that the elaboration and implementation of these principles also regards the claim of targeting all relevant actors. This will be subject to the further analysis as well as the question whether they address user's lifestyles.

3.3 The governance of stakeholder involvement

This sub-part focuses on policy documents as markers of the changing ways by which the process of sustainable urban development is coordinated between and across the levels of municipalities. In contrast to the preceding sub-part, the purpose of this part will thus be to look at the described shift to multi-level governance strictly from the vantage point of policy actors and institutions rather than policy fields and themes.

For our analysis of the set of policy documents we will look for textual evidence supporting convergence and divergence tendencies in

- the sharing of decision making competencies at different levels of government,- **the decentralization of competences**
- the existence of new forms of partnership and networks which govern within, between and across these levels- **new institutions and logics of interactions**
- and, finally, a blurring of divides between different levels of government- **the degree of demarcation between different policy actors.**

The sharing of decision making competencies at different levels of government

Convergence can be observed in the normative appreciation for horizontal and vertical integration processes as well as in the actual process of how strategies are set up. Most strategies are formally committed to the idea that policy can only be done in a **joined up fashion** between different sectoral departments of the municipality (STEP2025 pp. 21, Stockholm RUFS pp. 81)

With a single exception (GRAZ STEK4.0), contemporary strategic policy documents generally feature a dedicated chapter on the process of making the strategy through an organized working process, detailing how the work is coordinated in multi-level stakeholder process. Part of the reason, why GRAZ STEK4.0 does not explicitly address the question of governance within its structure may have to do with the legally binding character of the document, resulting in a more regulatory tonality which leaves less room for questions of stakeholder engagement or consideration for process. Interestingly enough, a closer analysis of GRAZ STEK illustrates precisely the contrary- stakeholder involvement, of external experts, NGOs and other interest groups during the process is amongst the highest of the strategies that we have examined. This is an indication for a gap between general rhetoric tonality of a document and the actual institutional capacity to integrate stakeholders during the process of elaborating the policy.

Intra-municipal cooperation is the pre-dominant form of stakeholder integration in strategies examined in the three countries. Moreover, we can see that stakeholders of local, public or quasi public companies and external experts are regularly intervening in the making of the policies analysed. Contrasts are visible when it comes to the integration of NGOs and external interest groups. In some strategies such as Stockholm's RUFS or Amsterdam's SEAP, the involvement of external interests groups is integral to the decision-making processes of strategic policy documents. This stands in marked contrast particularly to the Viennese strategies examined, where external interest groups are at best consulted. Amsterdam 2040 is exceptional

in the sense that not only involves regional stakeholders in the strategy, but also the most important businesses and private stakeholders in the wider metropolitan region.

The existence of new forms of partnership and networks which govern within, between and across these levels

In terms of how to put strategies into practice the documents often foresee the creation of new cooperation models, with dedicated competencies for the organization of cooperation within the municipal apparatus, as well as new financial and business models to integrate a market logic "whenever it can be in the interest of the public to do so" (STEP2025 pp.21) A practical example for a stakeholder engagement instrument from STEP 2025 concerns the so-called "Implementation partnerships", that is defined as a structural, continual and target-lead cooperation of relevant stakeholders towards the achievement of the objectives set in different target areas of the policy document(STEP 2025 pp.100).

The size of the territory affected by the policy seems to have some effect on the development of new modes of partnerships and logics of interactions across the levels on which policy actors operate. In the case of regional strategies such as Stockholm RUFS the existence of joint municipal or regional bodies such as Stockholm County Association of Local Authorities (KSL) and the Stockholm Business Alliance, the municipalities are integrated in new regional regimes that help them to influence broader outcomes for the region in an integrated and joined up fashion, yet similarly assembling innovative actor constellations in the process. In the framework of the "Rheintalkonferenz", also a regional strategy including the Vision Vorarlberg, assembles the most important decision makers of the Land Vorarlberg (members of the Government of Vorarlberg, members of the Landtag) and on municipality level (all mayors of the 29 municipalities) to discuss the most important development issues.

A blurring of divides between different levels of government

In most of the policy documents, the process of policy formulation is described as the result of an intensive knowledge exchange process between different sectoral departments and builds upon several sector specific and transversal strategies that have been produced in an interdisciplinary manner. Policies often refer to the specific challenges that questions of sustainability entail on the local level, providing increased leverage in the argumentation for more integrated forms of government both in terms of sectoral and vertical integration.

A difference between the analysed documents can be seen in the degree of demarcation between different policy actors. In the Austrian policies examined (STEP; Masterplan Salzburg or GRAZ STEK4.0) competencies are clearly localized and traced back to one specific actor, which more often than not is the municipal spatial planning department. Overall, this leaves the reader with the impression of a relatively centralized planning apparatus in which policy integration coexists with neat boundaries between municipal agencies. An example for this are the two STEPs in Vienna, which clearly define the MA18 Department for spatial planning as the principal coordinator of different administrative inputs and working processes. In their process, descriptions these policy documents are concerned with the clear demarcation between administrative units, stakeholders and the citizens at large. Such demarcations seem to be less important in the Swedish policy documents. This is most acutely the case with Stockholm RUFS

where, by nature of its regional focus the, RUFS mission is a vertical coordination process between the municipalities and the dedicated actors and the regional level. If the reader is not immediately confronted with a clearly demarcated actor field this may indicate some openness towards the way policies are jointly implemented and a generally more horizontal approach.

Conclusions

An analysis of the integration of stakeholders during the policy making process shows ample evidence for the growing awareness that sustainable, cross-sectoral planning can only be successful if the relevant stakeholders responsible for the implementation are working together from the start of the policy making process. This awareness does however not always lead to actual, strategic integration of all relevant stakeholders. While the integration of diverse social and cultural perspectives in the process of strategic policies making processes is an ambition of policy documents across the countries examined, they have hardy led to new institutionalized forms of strategic partnerships on the city wide level. If they exist, there is some indication that they are treated as exceptional project-led events, below the radar of strategic policy making.

Some contrasts in the representation of policy process in the examined policies are notable-

- **Some strategies take on board social and cultural parameters through the involvement of a diverse set of interest groups and civil society actors.** Contrasts are visible when it comes to the integration of NGOs and external interest groups. In some strategies such as Stockholm's RUFS or Amsterdam's SEAP, the involvement of external interests groups and NGO's is integral to the decision-making processes of strategic policy documents. This stands in marked contrast particularly to the Viennese strategies examined, where external interest groups are at best consulted.
- **New institutionalized forms of partnerships are hard to detect on the strategic wide level.** We found some evidence for differential cultural impact on the demarcation of stakeholders in policy documents which contributed in Swedish policies to the discursive blurring and in Austrian polices to the persistence of separation between levels of government; Rhetorically at least, this can be used to differentiate between degrees of integration, from policy integration models that are based inter-sectoral integration as in Vienna to models that follow a trans-sectoral approach as in Stockholm or Amsterdam.

After having looked at the governance of stakeholders, the following sub-parts will build on these insights to investigate more concretely what measures are used towards the inclusion of citizens.

3.4 The governance of Citizen Participation (citizen as urban residents)

This part focuses on governance of citizen participation as an important instrument towards changing consumption practices in the production and consumption of the built environment. In the frame of this project we could only analyse a very selected amount of policy papers. In total we analysed 13 policy papers, five Austrian papers dealing with policies in Vienna, Graz, Salzburg and the Rheintal, a region in Vorarlberg, three Swedish papers concerning policies of

Stockholm and two papers of the Netherlands (Amsterdam and Rotterdam). Differences in the elaboration of the papers give hints on how citizens participation differ in the different countries.

All analysed policy papers see information as an important method. Differences can be found at the point of time when citizens are informed. The point of time and the intenseness of the applied tools seem to depend on the highest level of participation a municipality wants to attain during the process. In general we can say that the lower the level of participation, the later and less intensive citizens are informed. There are also differences, which can be found in the quality of information concerning transparency (e.g. user-friendly homepage, structure of reports) and access to information (e.g. newsletter, bulletin, easy accessible download area, information events, exhibitions). The analysed policy papers show that information tools were applied in a more or less intensive way for the elaboration of all analysed policy papers. The "Vision Vorarlberg" e.g. as well as the Plan Amsterdam, STEP 2025, Salzburg Spatial Development Concept, SEAP Rotterdam, Graz STEK 4.0 applied different forms of information varying from newsletters to lectures, information events and exhibitions to inform their citizens about the process.

- Early information already given before elaboration and thereafter at different stages of elaboration: e.g. Graz STEK 4.0 (2012) Structural Vision Amsterdam, Vision Rheintal; those documents focus on a broad participation process.
- Transparency of information depends on an easy access and a good structured editing, allowing also the non-professionals to understand the provided information: E.g. concerning policy papers which comprise a vision for a greater area (e.g. the whole city), the City of Salzburg sees participation at a higher level not as fruitful. This does not mean that intensive participation is no serious concern for this City. But Salzburg focuses more on participation at project level. Broad information of citizens took place when the final version of the Salzburg Spatial Development Concept had been elaborated. In this last phase every household of the City was informed via a brochure including information about the concept as well as about further information events. Additionally more detailed information was easily accessible via a very well structured homepage. Five information events took place, which were attended by 150 citizens. An exhibition translated the professional contents for citizens. 365 citizens visited the exhibition. The Salzburg Spatial Development Concept is a good example for transparency and easy access of information. But the late information of citizens also gives the hint, that a board an intensive participation of citizen was not the aim of the city's government.

Awareness raising methods seem especially important for those papers focusing on environmental issues e.g. Rotterdam Programme on Sustainability and Climate Change (SEAP Rotterdam) but are also applied for other visions. Several documents include awareness raising e.g. to point out the status of electricity as "valuable resource", let people experience with the aid of software tools their energy saving potential or ecological footprint during workshops, etc.. The measures applied for awareness are in general the same as for information but are widened by the tools, which often include "learning by doing" measures like:

- **Workshops** where people work together and therefore are actively involved into a theme: e.g. Vision Rheintal: "Road Shows" to inform and integrate a broader target

group into the planning process. Three "Road Shows" comprised team work, discussions and the possibility to ask questions about the Vision Rheintal and were open for citizens and different stakeholders.

- **Competitions**: e.g. SEAP Rotterdam 500 energy-saving competitions between streets and neighbourhoods should encourage citizens to save energy.
- **Educational measures**: e.g. SEAP Rotterdam: e.g. Agreements with schools and businesses regarding continuing and extending the Sustainability for School projects or Agreements with colleges and universities regarding the efforts to be made by students to implement the strategic knowledge agenda for sustainability)
- **Individually designed information**: measures to raise the awareness regarding energy efficiency and renewable energies in the urban context are addressed in the KLIP of Vienna. These shall target certain groups of stakeholders (e.g. house owners). Further general public relations initiatives shall foster the awareness of the citizens (e.g. use of electricity as valuable good, meaning and use of energy efficiency labels)

At the stage of **consultation,** citizens get the opportunity to contribute with personal experiences and opinions. The decision makers ask actively for the viewpoint of the target group and are interested in the opinion of the persons involved. Consultation has more the quality of a hearing than an involvement into the decision making process. The methods used to collect citizens options are broadly fanned out. Thus in the following some examples of consultation methods are presented. The most frequent methods used for consulting people in the analysed policy documents are:

- The most usual form of consultation esp. for spatial development concepts – as required by law – is the **presentation of a draft document** during the last phase of the elaboration. For a fixed period of time (e.g. 6-12 weeks) the draft document is publically available and citizens (as well as stakeholders) have the possibility to voice opinions and statements. The treatment of the questions and statements raised make the difference between consultation, involvement or even co-decision making (compare also paragraph about citizens co-decision making). While consultation demands only for a sign of review, involvement reacts to the opinions by incorporating the new information into the final document; co-decision making would even alter e.g. foreseen measures as reaction to the opinions raised. An example for consultation applied in this way is e.g. the Salzburg Spatial Development Concept. As already mentioned the city did not see the sense to involve citizens actively for the elaboration of this document as it is on a high spatial level of planning, but takes great interest in participation in general. A broad information campaign applying different methods of information prepared the ground for consultation. The relatively high feedback of citizens (409 opinions raised), is also linked with the beforehand well operated information campaign. This example shows very well that the lower levels of participation create the essential basis for the active involvement of citizens.
- **Opinion polls, questionnaires or interviews** benchmarking the quality of life in a city, as well as the citizens view of the service quality of social infrastructure (e.g. Salzburg Spatial Development Concept, Graz "Time for Graz", STEP 2025): E.g. Salzburg Spatial Development Concept a questionnaire with question regarding quality of life, social

issues and infrastructure was sent to 652 citizens. Vienna (STEP2025) collected opinions about the personal values regarding different topics (e.g. public space or mobility).

- **Workshops** are a method which can be applied for awareness raising methods but can also be applied for consulting citizens. Examples are the organisation of "Open Vision" workshops applied during the elaboration of the "Vision Rheintal" with the aim to invigorate the process with new ideas and methods unusual to conventional spatial development planning.
- **Discussions** where e.g. special interest groups are directly inviting citizens to discuss the process: In Stockholm pupils of Secondary- and upper-secondary-school pupils have been involved in the discussions on the Stockholm of the future (Vision 2030).
- **Artistic or Cultural approaches:** e.g. a literary land survey which collected and published the views of Vorarlberg's authors in an exhibition and a catalogue or a mental map illustrating the everyday perception of the region ("Vision Rheintal").
- **Other measures**: Stockholm introduced an initiative "phone and we will be there", where individual interest groups could call for a city's representative to discuss the elaboration process of the City plan.

At the level of **involvement** the decision makers take advice from target groups respectively selected representatives of the target group. People get integrated into the process of decision making – even if they do not have the power to make decisions by themselves. In general the same measures as at the level of consultation are used. The difference is that the decision makers want to take advice. The raised opinions have an influence on the policy and might also induce big changes in the document.

- During the Structural Vision (Plan Amsterdam) as many people and organisations as possible were encouraged to share their thoughts. As the opinions and perceptions of the development were in general not only collected, but where ever possible included into the Structural Vision, we can say that involvment of citizens took place in various forms (e.g. **internet campaign** "Binnen 30 minuten", **series of challenging discussions).**
- **Opinion poll:** The city of Amsterdam showed that citizens can also be actively involved in the elaboration of a policy paper via an opinion poll. The large-scale public campaign "within 30 minutes" reached a wide target group and a high number of participants as it was organized as an internet campaign. During the drafting of the Structural Vision "Plan Amsterdam" the inhabitants of Amsterdam were invited to share their opinions about the future of the city. But everybody who was interested could highlight areas of interest or challenge on an interactive map. Comments could be inserted to the highlighted areas. Reactions were received from across the metropolitan area and sometimes even far beyond. The comments and important main issues of the campaign were integrated into the Structural Vision wherever possible. As a result the City decided e.g. that the majority of amenities should be in cycling distance to contribute to the feeling that the city retains a human scale.
- The participation process "Time for Graz", "More Time for Graz" and the institutionalization of a "Bürgerbeirat" (citizens council) started a series of workshops, where citizens were ask to formulate concrete measures principally able to reach consensus to improve the quality of life in the city and to make the city more attractive

as a place to live, work and relax. These measures were subsequently analysed by a team of urban planners in terms of their importance for the community and the feasibility of implementation. The idea was based on the model "Werkstadt Basel". The ambitions resulted in a very well based objection to the first draft of the comprehensive plan of Graz (STEK 4.0), which was adapted to the remarks of the citizen's council. This lead to the fact that e.g. the establishment of regular participation actions were included in the document.

The stages six to eight give the target groups a formal and authoritative role in decision making. At the stage of **co-decision making** decision makers consult the target group. There are negotiations between representatives of the target group and decision makers, where the former have a right of co-decision. The next stage of **partly decision making competence** grants the target group the right of participation in the decision making process. However, decision making competences are limited to certain aspects. With the **decision making competence,** the target group can determine all relevant aspects itself. Political and/or economic decision makers and (public) target groups cooperate as equal partners.

Figure 4: Survey of policy papers and their attaint levels of participation during elaboration

Level of participation	Stockholm SEAP 2010-2020	Rotterdam SEAP	Vienna SEAP (KLIP 2010-20)	Salzburg Spatial dev. Concept 2007	Vienna STEP05/STEP 2025	Stockholm Walkable City Plan (2010)	Graz STEK 4.0 (2012)	Amsterdam Plan 2040	Vorarlberg Vision Rheintal 20xx	Stockholm Regional Plan (RUFS 2010)
Decision making competence										
Partly decision making										
Co-decision making							x	x	x	
Involvement							x	X	x	x
Consultation			x	x	x	x	x	X	x	x
Awareness raising	X	x	x	x	x	x	x	X	x	x
Information	X	X	x	x	x	x	x	X	x	x

Source: ÖIR

Only a view policy papers (Graz STEK, Plan Amsterdam and Vision Vorarlberg) involved citizens up to the level of co-decision making. But none of the analysed documents gave citizens the competence of decision or partly decision making. So in most documents citizens had no formal, binding role in the decision making process during the elaboration.

- The Plan Amsterdam had the explicit aim to make a vision "that can truly be said to belong to the whole city". This aim is mirrored in the handling of the public consultation. The public consultation went a much further and can therefore be classified as citizens' co-decision-making. The expressed questions or differing opinions were answered in a "Memorandum of Responses" which led to certain shifts in emphasis and the modification of dozens of points in the Draft Structural Vision. One notable modification was e.g. the re-routing of a planned road, which would have cut through a complex of allotment gardens. Due to the large number of submitted

opinions this road was postponed until 2030 and will be realized in form of a tunnel. Compared to Salzburg, Amsterdam integrated the opinions of citizens in a transparent way and changed important aspects of the Vision.

- The above mentioned example of the citizens council in Graz lead to a variety of about than 300 pilot projects, measures and recommendations to act in the field of urban planning, which were already partly implemented successfully by the city: 35 measures are implemented, 131 are ongoing projects, further 50 are in a status of planning.

Conclusions

If participatory tools have the ability to change the values towards a more sustainable consumption of the built environment, the use of such tools is not always directly targeted at an effective change in behaviour. Formally speaking, participation is part and parcel of the policy documents examined. Particularly, this concerns tools that are used for the higher levels of participation, like media campaigns, use of networks, community actions, e.g. workshops, think tanks engage citizens. The lower levels of participation try to enable value change by giving information or by creating awareness e.g. via education.

National differences and common grounds

- Only two policy papers, one from Austria and one from the Netherlands, involve citizens up to the level of co- decision making. None of the papers applies the levels of partly decision making in the elaboration of the policy. It seems that cities are still rather hesitant to give citizens a formal, binding role in the participatory process. The policy plans analysed make use of varying ways and levels of public participation. The limited analysis of policy papers makes it difficult to locate differences or focal points in the application of the levels of participation. But it is remarkable that Austrian strategies score both among the highest and lowest level. Similarly, the Dutch strategies score both very high (Amsterdam) and very low (Rotterdam) which does not allow any country specific comparison.
- As mentioned before cities are rather hesitant to involve citizens in a formal binding role regarding policy papers on the city level so at a high spatial level. But for the implementation of concrete measures or policies on city quarter level, citizens are more often equipped up to the levels of partly decision or even decision making competence The degree of willingness to tackle the cultural roots of consumption practices increases the more local the policy measures used are in territorial scope.
- The attitude and approach of governments in the intercourse with citizens and also stakeholders do differ in different countries. The topic of partnership is omnipresent in Dutch and Swedish strategies. The understanding of a government as a partner of citizens and stakeholders might result besides others in a greater ease regarding the dealing with participatory processes. The following formulation made in the SEAP Rotterdam gets this "Nordic attitude" to the point: "The city does not have to take the lead in everything. That would only result in us frustrating and even jeopardizing countless initiatives that are already being implemented. The role of the city government is primarily that of a partner. Where necessary, we will help our partners by

creating the required conditions and removing obstacles and, where desired, we can gently push matters in the right direction for the benefit of joint interests." (SEAP Rotterdam, p. 11)

- In all countries the intensity of citizens' involvement increases with the temporal progression of the policy papers elaboration. This is a big difference to stakeholder involvement. Stakeholders are the more involved from the beginning till the end of elaboration. Whereas most strategies opt to involve citizens during, at the end or even after the elaboration of policy papers. This allows us to conclude that while certain cities show high levels of involvement, citizens are not necessarily involved at all stages of the policy making process and vice versa.

Individual cases and specific conclusions

- The City of Amsterdam does not fear the use of innovative technologies and social media in the process of making comprehensive plans. With "Amsterdam binnen 30 minuten" a great number of very different people were able to participate in an efficient way. It has to be pointed out that by using this method a large number of very different people were involved at the highest level of participation reached in the analysed documents – "involvement". This approach of participation seems promising but as Amsterdam is rather an exception, many city governments still seem to have to overcome their inhibitions.
- Differences occur in terms of the type of policy document analysed. SEAPs seem to limit more often participatory processes to the level of "awareness raising", while classical policy documents go in general at least a step further.
- Participatory processes are in general not addressed to specific target groups or lifestyles identified. However, at the level of awareness raising a focus on educational measures can be observed. As awareness raising explicitly refers to a change of behaviour it seems to make sense to try to make "young people" aware of the topics as they will be the users of the future.
- Increasing importance of citizens councils: The City of Graz and Vorarlberg successfully launched citizens councils in Austria. Vienna also made one similar workshop, which at present – can be only seen as a pilot project, not as a regular instrument of participation. However, it seems that in the German speaking regions, this "good practice" example might spread further.

Participatory processes occupy a more central role in the Dutch and Swedish policy strategies as compared to Austria. However, the level of discursive commitment and the actual level of citizen involvement in making of the strategy are not necessarily correlated. While certain Dutch and Swedish cities are generally better at communicating openness of strategic processes through policy documents, also Austrian strategies perform in the application of participatory processes even though the topic of participation does not seem to be that important in the hierarchy that is named planning discourse.

3.5 Summary findings from first part of analysis

The following section provides a short summary of our findings from part Chapter 1 Analysis of sustainable policy integration. Three main findings can be deduced:

(1) **Persistence of an infrastructural perspective on sustainable consumption and production.** If some strategies show an awareness of cultural context and the need of changing consumption behaviour, most city wide policy documents seem to think change of behaviour in terms of fostering greater technological efficiency in the way the built environment is produced rather than in terms of cultural change or change in existing conventions. However, in every country there exist notable exceptions to this finding, which work as alternative examples of how policy at the city level can be done.

(2) **Governance of sustainable consumption and production is marked by a gap between willingness and institutional capacities to integrate citizens and new perspectives.** While the integration of diverse social and cultural perspectives in the process of strategic policy making processes is an ambition of policy documents across the countries examined, they have seldom led to new institutionalized forms of strategic partnerships on the city wide level. Across the board of strategies examined, the degree of willingness to tackle the cultural roots of consumption practices increases the more local the policy measures used are in territorial scope.

(3) **Different approaches towards integration of citizens and stakeholders.** Some strategies have successfully translated an understanding of government as partnership into a set of innovative approaches towards participation. On the city wide level these seem however to be the exception rather than the rule.

Part of the findings may also be explained by the structural inadequacy of city wide strategies as an instrument to sufficiently target the local needs of citizens and their lifestyles. As a city wide strategy, we may argue, the policy documents are by their very nature not apt to grasp the dimensions of consumption behaviour and lifestyle we want to tackle. As a consequence, consumption policy may often be relegated to particular local projects or implicit in the bundles of measures that exhibit autonomy of their own. While we have already seen that some strategies have been informed by a bottom up perspective and innovative practices, some further analyses of measures bundles and projects is needed to come to an understanding of the openness of city wide strategies to bottom-up approaches. The next part will therefore aim at giving some tentative answers in this direction by looking at an analysis of policy measures and pilot projects in the documents selected and evaluation of their actual performance.

4 Analysis of bundles of measures in Housing & Living and Mobility & Transport

The next part focuses on the **measures by which policies aim to integrate the demands of producers and consumers of the built environment, and to address user lifestyles in housing & living and mobility & transport**. In contrast to the preceding chapter, where analysis was mainly driven by an investigation into objectives and processes in city wide strategic policies, these chapters intent to build on the **understanding of the integrated design of policy instrumentation**.

The **study of the policy design** will be founded on a two part structure.

In the first part, we will look at a set of measures in Housing and Mobility in city wide strategies and compare policies according to the ambitions and objectives they have to transform consumption, they way they strategically target certain user groups and try to involve them in policy making process

In the second part we aim evaluate the effectiveness of a selected set of measures of sustainable consumption policy in Vienna and Stockholm with regards to their effects on output that is their ability to affect and trigger change in consumer behaviour. The analysis aims to verify and sharpen the conclusions formulated of part 1, by looking at several examples of policy in Vienna and Stockholm in more detail.

4.1 Measures to address consumption in Housing & Living and Mobility & Transport in city wide policy documents

The following part focuses on the analysis of bundles of measures city wide policy documents from Sweden, Austria and the Netherlands, with a distinctive focus on **housing & living and mobility & transport**.

4.1.1 Mobility & Transport

Ambitions and objectives to transform consumption

Our analysis shows that considerations for sustainable behaviour and consumption are part and parcel of virtually all transport & mobility strategies presented in the documents. Mobility & transport policy is often presented as the linking element between all other local urban policy areas and the primary vehicle to achieve integration between policy fields. As such behavioural change and consumption patterns are also explicitly addressed as a lever in transport.

Lifestyle and consumption questions are for instance integral to the objectives and ambitions of mobility & transport-infrastructure in STEP05. At this point it will be important to note that even though the dedicated chapter clearly adopts an "infrastructural perspective" in its title,

communication and acceptance are the main pillars of the concept of intelligent mobility presented in the strategy. This resonates with bundles of measures applied in other strategic policy documents such as KLIP II in Vienna, which has a more dedicated focus on energy questions. This focus directly results from a principled commitment towards sustainability as one primary rule guiding infrastructure policy in the area.

Strategic priorities in the transformation of consumption practices

Shifting the modal choice from individual motorized transport to public transport, but even more to walking and cycling is the foremost strategy toward sustainable consumption behaviour: The City of Stockholm proclaims "The Walkable City" even in the title of its comprehensive plan. Further, all strategic outlines, be it the strengthening of the city centre, the urban development with focus on strategic nodes or the call for a vibrant urban environment go together with a priority of public transport accessibility. Similar attempts are visible in the STEP05 and STEP 2025, here with a clear focus on improving the environment for cycling.

The increased awareness of urban mobility & transport goals is conceived of as the primary instrument for the change of unsustainable mobility patterns. Public awareness campaigns on the local level, increasing the attractiveness of biking and walking, as well as mobility education are in principle encouraged by strategies such as STEP, KLIPII or SEAP Rotterdam. The focus on lifestyles is mediated through the treatment of walking and cycling, which fosters an understanding of streets both as links and public spaces as well as adequate infrastructure for physically impaired people.

Figure 5: Pictures of mobility in SEAP Rotterdam (left) and STEP05 Vienna (right)

Source: SEAP Rotterdam, STEP05 Vienna

Graphically, however, the documents show contrasting images of consumption behaviour. In the first picture from Rotterdam SEAP mobility is presented as an effective choice between different sustainable modes, whereas in the second one only sees a picture of the subway. Second, one notices that the second picture is rather impersonal, showing only silhouettes of persons, whereas in the case of the first one can clearly identify a person on bicycle. Looking at the two pictures above the first from SEAP Rotterdam and the second from STEP05 Vienna, one detects differences in the way that policy options are approached and related to daily life in the mobility & transport sector.

Types of measures through which policy documents aim to change consumer practices

In terms of measures in mobility & transport, lifestyle choices are primarily addressed through the prism of walking and cycling policy and the fostering of sustainable mobility patterns. There is a rough balance between consumption and production measures aiming to address lifestyle changes, and a particular focus on public information campaigns and capacity building in the sector (compared to housing & living within same documents). The transport sector is on the one hand addressed by the **reduction of car transport** (and related emissions). Here regulations on parking in urban areas (e.g. Vienna), congestion charging (e.g. Stockholm) or limited parking spaces in regions with good access to public transport (e.g. Gothenburg) targeted the consumption side. Particularly interesting in this regard is the ability of measures to connect with other fields. In the case of the Masterplan for Transport in Vienna, the policy advocates for instance to link public subventions for residential housing to areas in which there is a particular density of public transport.

Box 4: Qando app Vienna

Since 2009 the App "Qando" allows users of the Viennese urban transport system manage their travel demand on the mobile phone. Qando allows the user not only to get information on the availability of classic means of public transportation, but continually integrated information on Cityike and Carsharing as a feature.

Where apps like these are supported by open data initiatives in other local contexts, it may be interesting to note that data from Vienna transport providers have not been generally been made available. If parts of travel demand side management have thus been outsourced to private stakeholders, the way that this process is organized is in a top down rather than a bottom up manner.

4.1.2 Housing & Living

Ambitions and objectives to transform consumption

Our analysis shows that most policy documents have the ambitions and objective to address lifestyles and affect consumption practices in a sustainable manner. In many policy documents, the individual assessment of life quality has become a criterion for policy formulation in the housing sector that is supported by life quality surveys. Housing Policy defines lifestyle choices (age, mobility, family situation etc.) as important levers in the housing sector. The focus of housing policy explicitly takes into account the living space between the buildings as potential factors affecting housing & living quality. Heuristically, this is framed as "the availability of private and public green areas, access to public transport, as well as the existence of public and social infrastructures for the communication and encounter with others" (STEP 05 pp.103)

Sustainability plays a role insofar as focus cannot mean encouraging the possibility of all practices. In the case of Amsterdam's SEAP for instance, while it is mentioned to make housing forms more adaptable to lifestyle choices, it is also stated that these need to be guided in the right direction – for instance when preferences go in the direction of suburban low density living which goes against the compact city ideal fostered by the planning document." Another

approach followed by Stockholm is to put an effort on the provision of a variety of building types within an area – in order to prevent social segregation and isolation.

Strategic priorities in the transformation of consumption practices

Rottertam SEAP is a good example since it is first and foremost written from the perspective of the different users and their consumption and production of infrastructures, rather than the other way around. Cooperation with a dedicated set of actors is key for the policy makers to achieve sustainability goals in housing and other sectors.

Figure 6: The eco friendly port city Rotterdam

Source: Rotterdam Seap

However, if a focus on sustainable lifestyles persists in housing & living of most policy documents, the fostering of particular lifestyles of peculiar user groups has likewise become apparent in the analysis. In the case of STEP05, housing quality is understood as "the basis for the autonomous and self-responsible organization of daily life (…) whiles "autonomy means above all to be able to choose where to live as an elderly person". STEP05 is heuristically committed to the greater care for barrier free accessibility and age conform infrastructures. New housing & living forms should be conceptualized that give greater autonomy to the elderly and lifestyle questions are mostly formulated in terms of age and family size than through other categories.

The opposite is true for the Amsterdam Structural Plan where generally the focus lies more on making the city attractive to young and talented people. The articulation of lifestyle in sustainability policy indicates thus always to some extent the desirability of particular user groups. The pictographic representation may also generally be used for the push towards more life quality in a city traditionally dominated by much infrastructure and industry. For instance, as can be seen from the picture of SEAP Rotterdam above, the focus is very clearly on fostering a sustainable port city through sustainable consumption and lifestyle.

Types of measures through which policy documents aim to change consumer practices

Differences are also apparent in the type of measures and instruments used to address consumer practices. In terms of actual and desired measures to address these questions

The Viennese strategies for instance seem to focus much more on the provision of infrastructure and to some extent financial incentives. While there is conceptual focus on shaping lifestyles, on the level of objectives, there is a dedicated focus on production side instruments. Raising awareness, even though seen as functional to market the use of retrofit funding, is for instance not part of the general types of measures presented. Sustainable housing projects entertain in this context something like an experimental and exemplary character, although it is explicitly desired to make these projects influence general standards in building and housing

In Rotterdam the opposite is the case: The focus lies clearly on a mix of financial incentives, liberalizing certain restrictions and public information campaigns and capacity building measures. Exemplary measures in Rotterdam consist for instance in Citizen Initiatives fund to support creative solutions by citizens or competition between neighbourhoods for better energy balance, as well as public information through statistics etc. In STEP05 (and 2025) focus is more on provision of urban green and compact city of infrastructures, inclusive urban development through effective monitoring systems for the infrastructure needs, especially education that arise in the context of housing projects.

Figure 7: Pictures on housing and leisure activities in the policy documents

Source: SEAP Rotterdam Source: STEP05

Differences in the way that consumption should be changed through policy measures are also apparent in the pictographic elements to sustain the strategies, where consumption practices are clearly addressed in the case of Rotterdam and Step05 gives more weight to the display of infrastructures.

In the next part we will focus on distinct policy initiatives and measures that significantly affected consumption patterns. By reconstructing the logic on which these measures are built and relating these back to the strategic level, we would like to test some of the assumptions presented in the above.

4.2 Analysis of four policy examples in Vienna and Stockholm

After the general analysis of measures in housing & living and mobility & transport, the aim of this last part will be to provide somewhat deeper analysis of policies in two cities in a focussed analysis of Vienna and Stockholm; our aim will be to look at the logic of instruments used in the housing and mobility sector. This is complemented by a short introduction to the legal and political background of each city's policy regime.

Our analysis will be interested in

- date and duration of the intervention
- location/scope
- organiser/initiator (who initiated the tool and how is the tool managed? Is it an
- independent initiative or was it linked to other national, regional, or European initiatives?)
- sector(s)
- objectives (including measureable, quantified objectives if relevant) and target
- audience
- type of tool(s) used
- how the programme works
- impacts/savings/behavioural change (what types of savings has the initiative
- been able to achieve? Measurable behaviour change? Were objectives met?).
- key factors of success (how did the initiative achieve its objectives? Were specific conditions necessary for its successful implementation?)

For our analysis we have selected two instruments that we think are representative of the sustainable consumption policy in the housing and mobility area in Vienna and Stockholm:

- Congestion Charging Tax in Stockholm
- Parking space regulation (Parkraumbewirtschaftung) in Vienna
- Vienna Bike City
- Swedish Climate Account

Moreover we have included several other alternative examples in boxes that demonstrate particular initiatives in the sustainable consumption policy in the two sectors.

4.2.1 Example of Vienna's Bike City and the policy of parking space regulation (Parkraumbewirtschaftung)

As a federal province and municipality, Vienna can look back on a long history of quasi - autonomous policy making in the regulation of the built environment. Communal firms and energy providers are central actors in the management of local sustainability policy (Becker and Novy 1999). Since 1919, Vienna has been politically dominated by social democracy. Local politics are traditionally organized along corporatist lines, whereby social positions in the political sphere are accommodated by representation in mass parties, trade unions or chambers of commerce. Elite consensus has historically trumped over the self-organization of civil society as an autonomous sphere. As such, local actors have traditionally had only limited pouvoir over decision-making processes in urban policy making. A Novy & Hammler argue, reforms are generally "implemented via top-down strategies and clearly delimited forms of participation" (2007:pp 213). Reflecting on the history of social democratic urban policy in Vienna, one frequently encounters the image of top-down, authoritarian system that traditionally disregarded concerns for the "everyday" life of citizens. Rather, according to Blum and Gruber, a passive conception of the citizen as an "empty space" ideologically prevails in most urban policies. The tonality of planning documents is thus traditionally geared towards the production side of the built environment system, rather than the self-autonomous organization of consumers (Eisler 2001: pp 89-106).

Vienna is currently undergoing its third wave of modernization trying to reconcile the traditional focus on social-democratic ethos which is deeply engrained in its political structures with the new managerial exigencies for competitiveness in the turn to neo-liberalism. Since the 1970s, the paradigmatic policy of "soft urban renewal" accounts for the change management of urban policy towards the greater integration of consumer behaviour and consumption patterns, as well the wider appraisal of interactive and relational approaches to urban planning. Since the 1980s a continuous number of participation processes have been set up and implemented, particularly in the context of urban renewal and planning. Recently, participation efforts can be best exemplified in the implementation of the Local Agenda 21 scheme- an innovative policy instrument to mobilize local knowledge to face global sustainability issues. With the Green Party's accession to municipal government the Local Agenda 21 scheme has become institutionalized in the structures of sustainable urban policy. This has been accompanied by a decisive shift in policy discourse acknowledging the importance of consumer behaviour in sustainable urban development policy and more generally (MA18 2012). While some local innovations such as LA21 have successfully helped to integrate bottom-up, consumer perspectives in the management of local sustainability, important urban development projects and strategies- such as Donau City or the Central Station- have been implemented with relatively marginal public participation. According to Novy & Hammer, "the major changes which are taking place in Vienna are handled in non-transparent negotiations between government and private investors"(Novy & Hammer2007 pp. 213)1. Analyses of the Local Agenda 21 and the Local Area Management policy (Grätzlemanagment) in Vienna indicate that the general ascent of relational concepts of sustainability and local consumer perspectives coexist with traditional conceptions of "passive" citizenship, clientelism and top-down ecological modernization.

[1] This strongly resonates with Swyngedouw who argues that "traditional forms of strongly formalized neo-corporatist bargaining are replaced by apparently decentralized but in fact more informal and not democratically accountable ways of governance (2005).

Sustainable urban development policy, while on the outset procedurally promoting the greater collaboration of different administrative bodies, is embedded in an environment where policy actors are traditionally segregated (Dangschat & Hammedinger 2009).

In Part 3 we have analysed several urban policy documents informing sustainable consumption policy in Vienna. The specific conclusions do fit the contextual description above.

- With the notable exception of STEP2025, questions of lifestyle and consumption practices play a limited role in high order planning documents, insofar as their role is doubly relegated: either as part of general communication activities that are not integral to normal policy making apparatus or as specific pilot projects that do not clearly inform general planning rules and practices. Generally, policy making measures are not presented in terms of bundles and policy discourse does not formally address user behaviour directly.
- The area of mobility & transport illustrates a far more integrated and consumer informed policy practice than the area of housing & living. In many ways progressive approaches to housing & living are subsumed under mobility policy. In the comprehensive plans analysed.
- Measures to address user behaviour, if they exist, are often found on the production side, so that differences in consumption are apprehended through transformation of infrastructures and systems of provision.
- Strategic policy decisions are mostly taken in intra-municipal fashion without many opportunities for citizens to actively take part in decision-making processes.

In the following part, we would like to provide the reader with some analyse two measures a) the policy of parking space regulation and b) the fostering of bicycle friendly living with the example of Bike City.

Parking space regulation policy (Parkraumbewirtschaftung)

Vienna's parking regulation policy is an integral and traditional instrument of Vienna's transport policy. Its effect on the reduction of motorized traffic and the freeing up of parking space as well as the reduction of congestion has been evaluated in numerous studies. The following part aims to study the policy through our model of sustainable consumption policy. At the moment of writing, round a third of transport is done with private cares and motorized vehicles. Two thirds of modal split share fall on public transport, by walking or by bike.

The policy for the regulation of parking space exists in variegated forms since the 1960s, but its official starting date can be traced back to 1975. The regulation of Viennese parking space includes the central districts 1 to 9 and extends to the 20th parts of the 15th district. It regulates around 120,000 parking lots, in an area where approximately 514,000 people live and 380,000 jobs are located. Since its inception the policy has been continually extended. In some parts of Vienna there exist temporary parking zones in which parking is associated with a cost at specific times of the day. Special exemptions exist for neighbourhood residents, shopping streets and cultural venues

The city of Vienna has the following objectives with the regulation of parking space: the reduction of motorized traffic; making public transport more attractive; decreasing CO_2 Emissions; better accessibility of freight and logistics transport in the inner city; cleaner and safer design of streetscape better living areas; and finally the collection of funds that will be invested in public transport.

Vienna's parking regulation policy is a classic top-down instrument of transport policy. It is a regulatory instrument, in the sense that it is first of all structured around a law that prohibits parking for more than a specified time period in several zones of the city. The law illustrates an economic dimension, which is accounted for by the system of exemptions that functions through the acquirement of temporary parking permissions. The financial resources gained are reinvested in public transport provision.

Table 3: Analysis of bundles of measures

[CITY] Housing & Living		Production side	Consumption side
Objectives-Operational Targets-Policy Priorities		decreasing CO_2 Emissions; better accessibility of freight and logistics transport in the inner city; cleaner and safer design of streetscape better living areas; Collection of funds that will be invested in public transport.	the reduction of motorized traffic; making public transport more attractive
Measures	Regulations	Law that prohibits parking for non-residents in selected inner city areas.	
	Infrastructure provision	Provision of viable alternatives through the constant enlargement of public transport public information available online.	
	Financial incentives (opportunities)		System of penalties and exemptions, working as a tax on the use of inner city parking space
	Restrictions/Enabling measures		
	Awareness raising/Stake-holder engagement		
	Expected impact on sustainable consumption		More use of public transportation, walking and cycling

Source: ÖIR

From the above illustration, one can easily see that bundles of measures are mostly concentrated on enabling change of conventions through certain the provision of certain infrastructures and engagement through economic tools.

Extensive studies have showed that Parkraumbewirtschaftung has led to a decrease in motorized traffic in the inner city.

- 25% switched to public transport
- 33% paid for a temporary parking ticket

- On average the capacity utilization rates of parking space has been reduced from 100 to 70%.
- Before introduction average parking times were of six to eight hours; now they are one to two hours.

In 2012, the effects of a potential extension of parking regulation policy were examined. Crucially, the evaluation of Parkraumbewirtschaftung showed that price signals had different effects in different urban settings. This indicates, according to the report, the necessity for a more fine-grained approach both in terms of pricing and other measures that could be utilized. The proposals for the extension of the scheme were met with fierce opposition of local populations, especially in outer urban districts. The decision about introducing a parking regulation zone and its borders was however given to the local politicians. This let to different approaches in each borough. Some started opinion polls, others decided without them. Put to the vote, the extension was refused in several of these boroughs, which lead to massive burdens in the parking situation of those boroughs that refused to introduce the pricing. Further, the extension was not part of a wider transport strategy or information or marketing campaign about the expansion and alternative parking, e.g. for commuters to Vienna. Thus, opposition came additionally from the surrounding region. However, the parking zone was introduced and is now considered a success – at least by the districts which implemented it.

Summary

Vienna's parking regulation policy is a classic top down policy instrument. Throughout the years objectives related to impact on sustainability were gradually becoming more important in policy formulation. In terms of the instruments and approach used it is a classic example of eco-efficiency policy. It illustrates how these policies can be successful in shaping consumer behaviour through strictly top-down means, but at the price of democratic accountability and choice

Box 5: 24 h extension of metro system on weekends

In 2010, local government in Vienna decided to extend the running of the metro to 24h on Weekends. The policy change has been part of a deliberate effort to increase the attractiveness of nightlife in the capital city for young target populations living in Vienna and coming from outside the capital city to enjoy Vienna nightlife. The policy led to the reduction of buses running on the former night- bus system through the extended subway line service. No buses are running in inner city areas on weekend nights anymore.

The policy was put to the vote of the local population and was supported by a majority. Part of the reasons for popular support was an intelligent marketing campaign. A homepage, 24hours.at was set up, where users could print out a free ticket for the first night of the extended policy regime. The ticket could be also used to gain free access to 35 nightclubs in Vienna.

WHA Bike City

The extension of biking infrastructure is one of most mentioned measures for the improvement of life quality in housing & living in Vienna's recent life quality survey, 20% of people surveyed with Vienna's recent life quality survey regularly take the bike and 5% affirm to also use the

bicycle in winter. Since 2003, these figures have constantly increased, and this has been related to Vienna's continual investment in biking infrastructure. Bike City is a bicycle friendly residential project in Vienna's 2nd district that has a reduced part of compulsory car parking spaces per flat constructed. In 2007, bike city was awarded by the VCÖ[largest interest group for traffic and mobility related matters in Austria] with the Mobility award, and it is generally viewed that the project has changed the perspective of city officials on the subject matter.

Bike City is a project in the housing/residential sector built on the area of the former northern train station of Vienna. The scope of the project is on the district level. The construction of "Bike-City" followed the successful realization of Vienna's "Car Free Housing Project" in 2001. Both projects were initiated by Christoph Chorherr, a city councillor who has been a big proponent of urban mobility without automobiles. The success of the project has led to the replication of "bike friendly housing" in other parts of city.

"Bike-City" was developed by the municipal housing developer GESIBA and designed by the architecture firm, königlarch. The project benefitted from the political and economic support of the City of Vienna, It was not linked to other national, regional or European initiatives. An idea competition for the area started in 2003. The selected project "Bike City" was publicly presented by the City Of Vienna in 2005. The housing project was opened in 2008, when the first residents moved in.

The objective of "Bike City " was to build a housing project that specifically targets the needs of cyclists, with the idea of establishing a link between the housing type and the propensity of individuals living there to choose the bicycle as favored means of transportation. The project inserts itself into a set of pilot initiatives in the housing sector fostered by the city of Vienna. As a successful example of combining housing and sustainable mobility it has been replicated ever since with several other initiatives.

The intention was not to exclude tenants with other modal preferences, especially for car drivers, but to make comfortable residential living less dependent on the car by allowing modal change without major disadvantage in comfort. The project can be qualified a s bundle of infrastructural and regulatory tools and measures, that took effect both in the design of the residential project and transport infrastructure in its immediate proximity.

In total, 330 bike parking stands are available inside and outside of the building. In contrast only 56 parking spaces for cars are provided. Moreover there has been some investment into a relaxation and wellness area.

An extensive study of bike friendly housing projects "in Vienna showed of residents was conducted, and it showed satisfaction with the infrastructures put at the disposal for biking.

It also revealed that 19.5% of residents of Bike City would take the bicycle to work, compared to 11% who take the car. For individuals that did not choose to live at Bike City for reasons related to transport modality, the share of car and bicycle users is roughly equal. Moreover, statistics of the residential network show that the number of bicycle users have steadily increased every since the project kick-started in 2008. The study also revealed that in comparison with other housing projects conducted on similar premises to foster cycling, the bundle of measures presented by

Bike City did comparatively well. The developper received 5000 applications for the 99 flats, and to date all flats are occupied.

Table 4: Analysis of bundles of measures – Vienna Housing & Living

Vienna: Housing & Living		Production side	Consumption side
Objectives-Operational Targets-Policy Priorities			The objective of "Bike City" was to build a housing project that specifically targets the needs of cyclists, with the idea of establishing a link between the housing type and the propensity of individuals living there to choose the bicycle as favoured means of transportation.
Measures	Regulations	The obligation for residential buildings to provide one parking lot for every flat constructed was relaxed to 50%.	
	Infrastructure provision		99 flats, supported by large bicycle storage capacities, freely available repair and assembling spaces with cycle pumps and water supply. A car-sharing terminal was installed on the project. extra large lifts to make transportation of bikes to residential areas easier make areas as barrier free as possible.
	Financial incentives (opportunities)		
	Restrictions/Enabling measures		
	Awareness raising/Stake-holder engagement		
	Participatory tools		
	Expected impact on sustainable consumption		Increase in residents switching to biking and generally reduced utilization of cars.

Source: ÖIR

It is clear that qualities like more green space, community areas, playgrounds for children, more affordable housing cost, etc. have offered an additional stimulus for residents to support projects like "Bike City". Without a hugely successful model project and the motivation of thousands of citizens expressing interest in projects like "Bike-City", further projects would not have been possible. The perspective of the Vienna city government has been massively changed by the project success.

The starting point for Vienna's bike-promoting developments was the efforts of a city councillor, Christoph Chorherr, who initially proposed a car-free project in 1992. The major challenge to his proposal was the adoption of a new legal frame for parking facilities. It took more than 3 years

to convince the city to allow exemptions on its existing regulation that each new household must have its own new parking space. The perspective of the Vienna city government has been massively changed by the project success.

Figure 8: Bike washing infrastructure

Source: MA50 2012

Figure 9: Special storage capacities for the children's bicycles

Source: MA 50 2012

Vienna Bike City is a strong example for illustrating how a bottom up policy initiative targeting a specific user group can change behaviour and influence policy on the overall city level. Some factors that contributed to the success:

- **The presence of a set of key individuals and partners that was able to argue for exemptions from city wide car friendly policy regime and integrate pilot project into a new set of policy practices.**

- **The effective targeting of specific user groups through a specifically designed set of infrastructures**
- **Willingness to change unsustainable behaviours, but not the exclusion of the user groups that represent the choices that sustain them**. Car users were not forbidden but incentivized through the exposition to examples of successful bike friendly living.

Box 6: Community Gardens of the city of Vienna

In Vienna there exist a number of successful examples for the community gardening projects. These are a combination of specific pilot projects for the reinvigoration of particular brownfield sites and a program, of continually extended garden spaces directly provided by the city of Vienna.

Since 2010, residents of a neighbourhood in the 12th district come together in the Längefeldgarten to administre a community garden project. The former browfield site is owned by the City and has emerged as colorful and diverse city garden in recent years.

In addition, every year, the city of Vienna makes certain garden spaces publicly available against a small fee. The garden spaces are administered by the municipal department for agriculture MA49 in several different locations of the city. Since 2011, private groups can ask for funding towards community garden projects. According to specific criteria, these projects can be supported by a maximum lump sum of EUR 3,600.

4.2.2 Examples from Stockholm: Congestion Tax and Sustainable Järva

In Sweden, municipalities have traditionally enjoyed a high degree of political autonomy. The City of Stockholm owns a vast portion of land within its territory, over which it historically entertained a planning monopoly. Since the beginning of the twentieth century, the city has continually expanded its borders to integrate a number of independent municipalities in its jurisdiction. At the same time, the developments in Stockholm have been strongly influenced by national decision-making. After the war, the government introduced a housing policy to levy the low standards of housing prevalent in most municipalities.The Swedish parliament decided that a million new dwellings should be built in the period 1965 to 1974.

Nowadays, the need for regeneration and energy efficiency initiatives in the residential estates constructed in this period are considerable. According to Sabo (the Swedish Association of Municipal Housing Companies), about 200,000 flats in the Million Homes Programme of the 1960s must be refurbished. The achievement of this goal is complicated by the unbundling and deregulation of systems of infrastructure provision in the Stockholm area. A number of planning difficulties have resulted from the decreasing articulation between urban policy and infrastructure policy in Stockholm.

Stockholm presents itself at the vanguard of green urban policymaking on an international level, as shown by it winning the European Commission's first Green Capital of Europe award in 2010. According to Reardon & Schmitt (2013), planning developments are mostly project driven. If this allows a certain amount of flexibility and responsiveness, there persists a "lack of consistency in how resource efficiency is achieved/promoted from one project to another"(2013 pp 23). At the same time they conclude that the city "does in fact have the territorial governance capacity and competencies to achieve greater resource efficiency and that there is a strong potential for a greater exchange of learning experiences between project." (2013 pp.

20). If projects such as Royal Seaport went over and about the requirements in terms of public participation, participation occurs still rather late in the development process.

Some of the above is reflected in the specific conclusions for the city of Stockholm derived form part 4.1:

- There is an awareness of questions related to consumption practices in the discourse of high order planning documents in Stockholm. But if this awareness about the need to understand lifestyles and cultural patterns of consumption is communicated in city wide strategies, most strategies aim to change this through work on the production side mostly.
- Generally, policy making measures are presented in an integrated manner, in terms of more or less balanced bundles of consumption and production side measures. Pilot projects, and bottom up structures play in general a more important role in actual policy making than in the Viennese context.
- In terms of addressing particular lifestyles, policy measures in Stockholm are not any more explicitly targeted towards user groups than policy documents from Vienna. While citizen participation is an important instrument and is well communicated within the strategies, the degree of policy induced citizen participation in Housing and Mobility policy is comparable to Vienna.
- The integration of external stakeholders, interests groups and citizens is integral to the making of policy processes, and there seems generally a greater awareness of the need to integrate citizens in policy process.

In the following part, we would like to provide the reader with some concrete analysis of two measures a) the policy of Congestion charging and Sustainable Järva

Stockholm's Congestion Tax

Congestion charges were introduced in Stockholm in 2006, first as a trial followed by a referendum, then permanently from 2007. The trial was forced through by the small Green party in exchange for its support for a national social-democratic government, in the face of public opposition and despite a promise of the social-democratic mayor in Stockholm not to introduce congestion charges. This ignited a heated debate, making public attitudes even more negative to congestion charges than before. But once the trial started in January 2006, the congestion reductions turned out to be enormous, and public opinion shifted quickly. The referendum resulted in a narrow majority in favour of keeping the charges. After the referendum, public support continued to increase, eventually reaching around 70% support (2011). No political parties want to abolish the charges anymore, and the debate has shifted from the system's existence to how it can be improved and how the revenues should be used.

The congestion charge had four explicit policy goals on the basis of which it has thereafter been analysed and evaluated: Reduce traffic volumes by 10-15% on the most congested road; Increase the average speed; Reduce emissions of pollutants harmful to human health and of carbon dioxide; and finally to improve the urban environment as perceived by Stockholm residents.

Technically, the Stockholm congestion charging system consisted of a toll cordon around the inner city. The cost of passing the cordon (in any direction) on weekdays was EUR 2 during peak periods (7:30-8:30, 16:00-17:30), EUR 1.5 during the shoulders of the peaks (30 minutes before and after the peak periods) and EUR 1 during the rest of the period 6.30-18.30. The total charge per day was capped at EUR 6.

Table 5: Analysis of bundles of measures – Stockholm Mobility & Transport

Vienna: Mobility & Transport		Production side	Consumption side
Objectives-Operational Targets-Policy Priorities		Reduce emissions of pollutants harmful to human health and of carbon dioxide Improve the urban environment as perceived by Stockholm residents	Reduce traffic volumes by 10-15% on the most congested road Increase the average speed
Measures	Regulations		
	Infrastructure provision	14 new express bus lines – 18 bus lines with extended service – 197 new buses- Improvements of rail-bound lines – 1800 new park- and-ride places- New bus lanes, bus stops Park & Ride facilities Extensive public information campaign Political referenda securing political commitment	
	Financial incentives (opportunities)		Tax on vehicles entering inner city area
	Restrictions/Enabling measures		
	Awareness raising/Stake-holder engagement		Extensive public information cam-paign Political referenda securing political commitment
	Expected impact on sustainable consumption		Reduce traffic volumes by 10-15% on the most congested road Support switch to public transport

Source: ÖIR

A recurring theme in several of these analyses is that the cost to build and operate the system was excessive, compared to costs for other road charging installations.

A cost benefit analysis of the scheme estimated a total initial cost of 3100 mkr, with investment costs of 2000mkr and maintenance and running costs of about 220mkr per year. The net benefit being760mkr per year, the Cost benefit analysis concludes that initial costs can be paidback in the period of four years.

The congestion charges have been subject to extensive scientific analyses. A comprehensive evaluation program with over 30 different projects were carried out, covering all kinds of effects

Traffic decreased around 20% across the toll cordon, leading to congestion reductions of about 30-50% on the arterials. Emissions in the inner city decreased 10-14%. About half of the

"disappearing" drivers changed to transit, the rest to other alternatives – other departure times, other destinations, fewer trips etc.

A cost-benefit analysis is available in Eliasson, J. (2009) A cost-benefit analysis of the Stockholm congestion charging system. Transportation Research A 43(4), pp. 468-480. doi:10.1016/j.tra.2008.11.014 It shows a net social benefit of around 65 million EUR/year

Summary

The Stockholm congestion charging policy demonstrates how a classic, city wide policy instrument, through the intelligent combination with a set of consumption side measures, can overcome political and cultural barriers to behaviour change

The following strong

- **A set of clear objectives related to behaviour change.** Objectives in relation to behaviour change were set up, that clearly targeted the conventions of residents.
- **A gradual approach towards making visible effects of changed behaviour** First a pilot project, the policy was gradually extended to the city wide level. The effects of the pilot project were scientifically evaluated and helped to inform public discourse on the subject matter.
- **An effective information campaign** making results of changed behaviour and reasons sustaining policy change transparent to the wider public.

Box 7: Speed Camera lottery

Originally proposed to the Fun Factory by Kevin Richardson of San Francisco, the concept was implemented by the Swedish National Society for Road Safety on site in Stockholm, Sweden in November 2010. Using existing traffic-camera and speed-capture technologies, the Speed Camera Lottery device would photograph all drivers passing beneath it. Each vehicle's speed was displayed to the drivers passing by and recorded by the system. Speeders would be photographed and issued a citation, with the proceeds going into a cash fund. Drivers who obeyed the speed law would also be recorded and entered into the lottery, where they would be eligible to win some of the money from the speeders. The idea was actually put into practice in a 3 day period in Stockholm and generated a 22% average speed reduction of drivers who passed by the light.

Prior to the SpeedCam Lottery, Stockholm drivers were motivated to drive safely for the general public good (Epic Meaning & Calling), to avoid citations (Loss & Avoidance), or through encouragement from immediate visual feedback (Creativity & Feedback). With the introduction of the SpeedCam Lottery, drivers were receiving new motivations from potential cash incentives (Ownership & Possession), lottery anticipation (Unpredictability & Curiosity), encouraging reinforcement (Development & Accomplishment), and public pressure (Social Pressure & Envy).

Sustainable Järva

In Stockholm, residential buildings account approximately for 35% of energy consumption in the City. Building consumption does mostly relate to housing constructed in the 1960s under the Million Homes programme, a government initiative that aimed at improving housing conditions and massively extending the existing housing stock by adding over 600000 units since the 1960s.

The objectives of the project shifted quite radically form an initial concern with social integration, to the production of a self-contained residential development, admired for its energy performance targets, The urban project Sustainable Järva intends to reduce the energy performance of these buildings, with a distinct focus on the social dimension of energy efficiency in households.The city aims to half energy consumption from 188 kWh/m^2 per year to 90 kWh/m^2 per year in city owned flats Furthermore its aim is to produce a pilot project that will be directly rolled-out into a more widespread green retrofit plan for 5,600 apartments in the surrounding area; Under a five-year period, the rehabilitation project will cover six buildings (350 apartments) of the most common types of residential apartments.

The Järva pilot project is testing different renovation methods in seven blocks and three types of buildings, covering 350 apartments in all. Some of the various renovation techniques include the use of prefabricated elements, different ventilations systems, and sewage systems with heat recovery. The installation of 10,000 m^2 of photovoltaic cells is accompanied by a public information package that explains the value of overall project. The City is also advancing green transport in the district through an extensive network of bicycle paths, bike rentals, local car-pooling services, and a biking course for adults.

Table 6: Analysis of bundles of measures – Stockholm Housing & Living

Stockholm: Housing & Living		Production side	Consumption side
Objectives-Operational Targets-Policy Priorities		50% energy reduction for retroffited buildings Increased energy efficiency for households	
Measures	Regulations		
	Infrastructure provision	10,000 m^2 of photovoltaic cells Biking infrastructure Energy efficient facades and lighting	Information package that explains value of energy related investments Biking course for residents
	Financial incentives (opportunities)		
	Restrictions/Enabling measures		
	Awareness raising/Stake-holder engagement		The Järva Dialog Environmental hosts and ambassadors in each building Education in cooperation with nurseries, schools and associations The Tensta Apartment – characteristic of the period Energy, Environmental and Technique investments and local employment
	Expected impact on sustainable consumption		Fostering Sustainable lifestyles; energy, transportation, consumption

Source: ÖIR

Considerable effort has been made to engage the residents of the targeted district. The "Järva Dialog" held open meetings for residents to voice their views on how they would like the project

to progress, resulting in some 30,000 public opinions that have gone into shaping the district's development plan. In addition, in each building, the residents participate in planning the renovation and have the opportunity to vote on the plan. If they are unhappy with any measures, these will have to be addressed by the project managers (the city's housing company, Svenska Bostäder).

Summary findings:

- Integrated concept of production and consumption of built environment that translates in measures on addressing change in behaviour of residents
- Strong focus on engagement of citizen and stakeholders as an essential part of achievements in energy efficiency
- Fostering sustainable lifestyles as explicit objective of housing project

Box 8: Climate Account in Stockholm

The Climate Account helps you to calculate your greenhouse gas emissions in four main categories, by clicking on the first four tabs above. Each set of questions is split into several subcategories, for example "car", and you must answer all the questions in that subcategory before the emissions can be calculated. You can answer the questions in whichever order you like. The results page is always available to see the result of your answers so far.

The Climate Account has been developed by IVL Swedish Environmental Research Institute (www.ivl.se) in a joint project with The Swedish EPA, Stiftelsen Futura, E.ON, Skanska, City of Stockholm, City of Göteborg, Umeå Municipality, the Church of Sweden, The Swedish Association of Graduate Engineers and the Swedish Society for Nature Conservation. The tool is a development on IVL's carbon footprint calculator and on the "Klimatlöftet" tool.

Climate account can be used to evaluate personal emissions in all sectors related to urban consumption.

4.3 Summary findings from second part of analysis

Having examined two policy sectors in which the question of fostering behaviour change plays a dominant role across Austria, Netherlands and Sweden, we will provide some tentative conclusions of this macro analysis of comprehensive plans.

- **Willingness to change consumption patterns as displayed in housing & living and mobility & transport.** It can be stated that certain strategies across the two sectors are more prepared, at least rhetorically, to engage with the question of behaviour change than others through a bundled set of measures. A example is Rotterdam where considerations for behavioural change are not supplementary such as in the Housing part of Vienna's KLIP II, but an integral element of sustainable policy making in the sectors examined.
- **Images of city living conveyed in strategies**. The evaluation of pictographic material has shown that some strategies are more interested in relating what is infrastructure, mobility and housing to the daily routines of individuals inhabiting the city. In general, it may be stated that Dutch & Swedish strategies make use of imagery that is more

interested in displaying and marketing what is infrastructure policy to citizens and non specialist stakeholders.

- **The balance between consumption and production side measures in the two sectors.** While behaviour change is in most strategies dominated by an infrastructural perspective, it has been shown that strategies to foster consumption and behaviour change are much more elaborated in the area of mobility & transport than in housing & living. More elaborated means that this policy sector across the board of strategies examined shows greater integration of measures into bundles of production and consumption side interventions, with the question of information and awareness playing a predominant role in fostering sustainable mobility. Similar conclusions can be drawn in terms of the targeted nature of policies towards certain lifestyle types and choices.
- **The targeted nature of measures in housing & living and mobility & transport to specific user groups.** Generally, lifestyle choices and types are not always explicitly addressed within the particular **bundles of measures** used in transport & mobility and housing & living in the comprehensive policy plans of Sweden, Austria and the Netherlands examined. Cities do address different user groups and lifestyles; questions that often remain implicit in the bundles of instruments presented and difficult to verify without any further empirical investigation. While questions of lifespan, user type, or living type are mentioned in some campaigns they generally only provide input for information campaigns and do not always explicitly inform the discursive framing of infrastructure provision

The analysis of measures and the relationship between measures and overall strategic plans on the city wide level has shown that

- The examination of examples does both confirm and nuance the set of conclusions that we could draw from our analysis of city wide plans. While a top-down approach persists on the city-wide level in Vienna and Stockholm that is seldom informed by considerations for consumption and user lifestyles, we can see a certain gap between a general set of policy measures that is mostly driven by eco-efficiency gains on the production side and a number of innovative projects that are informed by consumer perspectives and values.
- **At the same time, cities display a different relationship between local bottom up projects and general policy.** The Stockholm example of congestion charging and sustainable Järva has shown how city wide policies can integrate consumption and participatory tools (as opposed to Vienna's Parkraumbewirtschaftung). If innovative projects have informed policy making through the replication of other projects in Vienna, it is questionable whether they de facto informed policy practices. The example of Bike city is rather exceptional in this regard, as it effectively changed views in strategic city wide policy and informs policy practice. In Stockholm, by comparison local pilot projects have from the outset been instrumented by top-down policy in a deliberate choice to make them replicable to other areas. However, several other studies have pointed out that there is a lack of consistency in the application of standards across these projects.

5 Main conclusions

5.1 Summary findings

In the course of this paper we have reviewed the policy frameworks relevant for the "production" of sustainable cities and relating to influencing lifestyles of several cities in the Netherlands, Austria and Sweden. This investigation has been performed with two analytical perspectives in mind:

- **Policy design** of types and bundles of measures, communication and participation processes and how they are integrating strategies to influence consumer behaviour
- **The openness of traditional top-down policy paradigms to innovative bottom-up approaches,** and the possibility for such approaches to influence strategic policy making.

Our analysis of policy documents in part 3 and 4 revealed several convergence and divergence tendencies, contradictions and similarities:

Change of behaviour is mostly thought through in terms of improving the sustainable city through eco-efficiency of technological infrastructures at the strategic policy levels. Although there are signs of awareness amongst policy makers about the need to understand the context in which unsustainable behaviour arises, urban infrastructures and their cultural context are still largely segregated in sustainable urban policy documents on the city wide level. Some strategies are more willing to relate urban infrastructures to everyday life through engaging language and rhetoric, and the provision of a greater degree of choice and flexibility in relation to different lifestyles. While some country-specific differences could be detected, with Dutch and Swedish generally showing greater concern for sustainable behaviour, differences seem to be more important on the level of policy documents than of planning cultures.

Governance of sustainable consumption and production is marked by a gap between willingness and institutional capacities to integrate citizens and new perspectives. While the integration of diverse social and cultural perspectives in the making of strategic policy making processes is an ambition of policy documents across the countries examined, they have not in all cities examined led to new institutionalized forms of strategic partnerships on the city wide level. For the newest comprehensive plan of Vienna (STEP 2025) which was recently adopted by the municipal council, strong efforts were for instance made in order to involve stakeholders and integrate the strategies of all municipal departments concerned, attempts of stronger policy integration faced strong opposition within the politic game of assigning and withdrawing – or sharing – competencies. A deeper understanding of this gap depends on an understanding of institutional capacities that is *beyond the analysis of policy discourse*, and thus beyond the grasp of this particular paper.

Innovative approaches and projects on the local level are difficult to translate in overarching policy practice, but certain city specific conditions for success could be identified. These projects target change of consumption patterns through the analysis of lifestyle choices. In Stockholm and Vienna, municipal authorities have gone beyond the business-as-usual approach in certain instances, particularly when it comes to new development

projects. These approaches are however mostly limited to the project level and there exist difficulties in making experiences integral to higher order strategic documents or other projects. Similar in Vienna and Stockholm, the practices tested in new projects are seldom shared with higher-order policy contexts and other projects. Based on the combined findings of our analysis of city-wide strategies and bundles of measures and projects, the following policy options for measures in the two cities examined have nevertheless supported the spread of knowledge from project to strategic policy making (in housing & living and mobility & transport):

- Making effects of changed behaviour visible on a human scale: Strategic policies can do a lot to rhetorically relate infrastructure systems and their effects to the human scale. The use of pictographic material and engaging heuristics can help to achieve this. Effective information campaigns and innovative instruments to visualize are potent instruments to confront individuals with the positive effects of changed behaviour.. The use of new technologies such as apps and social media can be powerful tools to making effects of change visible.
- Targeting specific lifestyles without stigmatizing them: New participatory approaches can be used to target certain segments of populations and to improve the design of policy measures. If they increase the probability of impact on sustainability, they have to be combined with existing production side measures and technologies to increase chances of impact on the city wide level. In terms of the population they target the y have to include both pioneers of sustainable consumption and participants using conventional approaches, allowing the latter to learn from others. Sustainable consumption policy needs to allow for learning, instead of segregating between different lifestyle groups.
- Integrating key individuals as important drivers of integration into city wide strategies: In order to make piloted approaches and bottom up initiatives influence city wide practices they have to be supported by a key set of partners and individuals capable of assembling the right partners at the city wide level. Starting with pilot project that was scientifically evaluated, and the extending a scheme to the general city level is a recommendable procedure to demonstrate exemplary behaviour to others

Differences are notable between housing & living and mobility & transport across the board of strategies examined. While behaviour change is in most strategies dominated by an infrastructural perspective, it has been shown that strategies to foster integrated production and consumption are more elaborated in the area of Transport & Mobility than in Housing & Living. This policy sector across the board of strategies examined shows greater integration of measures into bundles of production- and consumption-side interventions, with the question of information and awareness playing a predominant role in fostering sustainable mobility. We have seen the integration of different policy areas in principles of mobility & transport, where housing & living as remained more segregated. Similar conclusions can be drawn in terms of the targeted nature of policies towards certain lifestyle types and choices. Generally, lifestyle choices and types are not always explicitly addressed within the particular **bundles of measures** used in transport & mobility and housing & living in the comprehensive policy plans of Sweden, Austria and the Netherlands examined.

If many strategies on the city wide level are committed towards the participation and integration of citizen perspectives, the degree of citizen participation varies between

strategies examined. Sustainable urban development policies in the cities examined show a contrasting role for citizens in the making of policies. In some strategies citizens are co-decision makers, while in others they are simply consulted. If there is a standard set of instruments used to organize participation processes, certain strategies use innovative tools making use of a network and horizontal understanding of policy process. The general political aim to integrate citizens stronger into urban development decisions is challenged by the ability and determination of the local actors to approach the local population and to share decision making competences. Analyses of the Local Agenda 21 and the Local Area Management policy (Grätzl-management) in Vienna indicate that the general ascent of relational concepts of sustainability and local consumer perspectives coexist with traditional conceptions of "passive" citizenship and top-down ecological modernization. Sustainable urban development policy, while on the outset procedurally promoting the greater collaboration of different administrative bodies, is embedded in an environment where policy actors are traditionally segregated. Similar conclusions can be made for the city of Stockholm, even if on the outset, policy discourse promotes the wider integration of citizen views and perspectives in planning.

5.2 Challenges and questions for future work in CASUAL

There exists no blueprint strategy to increase institutional capacities towards integrated consumption and production policy on the local level as divergences exist in the competences and authorities of cities as well as their financial ability to make sustainable development in metropolitan areas. Sustainable consumption policy on the local level may be conceived as something like the prototype of project-based governance, informed by best practices and local innovations rather remote from informing policy practices on the city wide level. A particular challenge relates to the way we can make these local examples of integrated sustainable consumption and production inform wider policy practices. For in the presence of a generalized disengagement of traditional state functions from the provision of public goods, the entrepreneurial character of local consumer initiatives may well fortify existing systematic focus on eco-efficiency instead of helping to address to challenge conventions. **Relating what happens on the local level to general city-wide outcomes is a challenge especially relevant for the urban living labs in Stockholm and Vienna.**

At the same time, great disparities seem to exist between the strategies examined and the reality of their implementation. Indeed, through reading all the planning and promotional material on one of the biggest green development project in Stockholm, Hammarby Sjöstad, one would think that the project was the very epitome of consensual sustainable urban development. Yet, as Dick Urban Vestbro, a KTH planning professor and politician reveals: "Almost all the available documents on Hammarby Sjöstad fail to provide information about the political controversies in planning the area. The main explanation for this deficiency is probably the fact that these documents have been written by municipal civil servants who are afraid to write something that may offend either of the political blocs in the City. By ignoring the differences in perspectives the reasons for changes in policy become obscure" (Vestbro 2005, p.1). Furthermore, the "Walkable City Plan" of Stockholm, as well as Stockholm's regional plan "RUFS" point out the necessity of social integration, particularly the need to reduce social segregation. Most prominent projects like Hammarby Sjöstad or the new project Royal Seaport however are designated to rather limited social groups, given the prevalent price schemes and are rather creating segregation

than dissolving it. **To make sense of the gap between rhetoric of policy documents and reality of sustainable development policy is particular challenge for future work in CASUAL, especially for the more empirical in-depth study of housing & living and mobility & transport in Vienna and Stockholm.**

There is some indication, that relational concepts such as integrated sustainable production and consumption have more easily been accommodated in the area of mobility & transport than in housing & living policy. Divergences may have to do with what Urry and Sheller termed **the "mobilities" turn** in the social sciences. In a time where travel and communication technologies have enabled the proliferation of greater interconnectedness across places, classic policy instrumentation based on non-relational paradigms may be less effective in targeting the conventions sustaining individual behaviour. The "mobilities" turn has manifested itself in the wider integration between transport, planning and environmental policies: it means *"transcending the dichotomy between transport research and social research, putting social relations into travel and connecting different forms of transport with complex patterns of social experience (…)"* (Sheller & Urry 2006 pp, 209). This is a challenge for housing policy where a classic conception of the neighbourhood as a set of intense relations between individuals living in close spatial proximity is more complicated to accommodate with the flexibility and adaptability of individual lifestyle choices and the increased mobility of individuals. Bike City Vienna has in this context served as an example of the greater articulation of housing policy in terms of mobility, and relational planning concepts have, on the level of strategic policy documents, featured more widely in mobility & transport. **A challenge for the future work in CASUAL relates to the verification of this hypothesis regarding the relationship between relational concepts and paradigms and their use in different policy sectors such as housing & living and mobility & transport.**

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ANNEX

I. Vienna

I.1 Vienna – Housing & Living

I.1.1 STEP05

Ambitions and objectives related to lifestyle and consumption: Considerations for consumption and lifestyle, as well as living quality are a prevalent dimension of housing & living in STEP05. The individual assessment of life quality has become a criterion for policy formulation in the housing sector that is supported by life quality surveys. Housing Policy defines lifestyle choices (age, mobility, family situation etc) as important levers in the housing sector. The focus of housing policy explicitly takes into account the living space between the buildings as potential factors affecting housing & living quality. Heuristically, this is framed as "the availability of private and public green areas, access to public transport, as well as the existence of public and social infrastructures for the communication and encounter with others" (pp.103). Formally, it will be interesting to note that questions addressing lifestyle do find their place in the main text, above all in the differential assessment of housing demand which explicitly states that quantitative provision of housing is not enough to satisfy housing demands. Lifestyle questions are also positioned as footnotes on the periphery or in the form of pilot projects.

Strategic priorities related to lifestyle and consumption: In terms of strategic priorities related to lifestyle, STEP05 mentions the necessity to address the preferences of children and teenagers for playful and open public spaces as accessible, open and secure places for the encounter with others both in inner city areas and in the social periphery. Furthermore it is stated, that "housing quality is the basis for the autonomous and self-responsible organization of daily life. Autonomy means above all to be able to choose where to live as an elderly person". STEP is heuristically committed to the greater care for barrier free accessibility and age conform infrastructures. New housing & living forms should be conceptualized that give greater autonomy to the elderly. Lifestyle questions are mostly formulated in terms of age and family size than through other categories.

Related strategic areas of intervention

- Mobility is also addressed as a field that plays an important role in the integration of the elderly.
- Public space and green space policy
- Governance of housing provision: Focus on stakeholder engagement integrating housing and health organizations, as well a municipal wide cooperation for the adequate housing provision of the elderly

Type of measures: In terms of actual and desired measures to address these questions one will have to note that the focus on the document lies much more on the provision of infrastructure and to some extent financial incentives. While there is a clear conceptual focus on lifestyles, on the level of measures, there is a dedicated focus on production side instruments. Awareness rising is for instance not part of the general types of measures presented. Sustainable housing projects entertain in this context something like an experimental and exemplary character, although it is explicitly desired to make these projects influence general standards in building

and housing Moreover its is explicitly stated that such new forms of sustainable housing need the active participation of citizens and residents.

Summative table of measures addressing lifestyle choice: STEP 2005 – Housing & Living

STEP 2005 Housing & Living	Production side	Consumption side
Objectives/ operational targets/ priorities	**Overarching objective** – Adding 5000 to 7000 residential units per year to the housing stock **Policy Priorities** – Creation of a diversity of housing supply to make housing & living attractive for existing and incoming residents – Balancing supply and demand to create affordable housing in the existing housing stock – Integration of urban development, urban renewal and urban extension processes – Assuring a mix of uses, with a minimum level of housing units in new development areas	
Measures		
Regulations	Inner city areas – Rules given special consideration to the densification of inner city areas.	
Infrastructure provision	Inner city areas – Provision of additional public green spaces Urban development areas – Schooling and kindergarten infra-structures for children in proximity to housing	
Financial incentives (opportunities)		Inner city areas – Enabling the flexible use of ground level areas by residents and financial incentives for their use – Financial incentives for retrofitting
Restrictions		Inner city areas – Allowing for the better usability of underused real estate assets within buildings
Awareness raising		Inner city areas – Raising attractiveness of inner city areas through exemplary projects
Expected results on sustainable con-sumption practices	Raising consumption of housing in inner city areas, through the creation compact city densities and infrastructures, thereby reducing necessity for unnecessary mobility patterns within city.	

Die autofreie Mustersiedlung

Europe's biggest car-free Residential project at that time- directed funds that are normally allocated towards the build-up of garages towards sustainable infrastructures (i.e. green rooftops, bike kitchens, event spaces etc.) At the same time the project went about to create a comprehensive ecologic project: low energy house standards, PV stations for electric vehicles, usage of recycling materials for design of public spaces, waste-heat recollection. Also the pilot project focused on new forms of residential living – within built kindergardens, and housing for the elderly and special needs – public participation and car-sharing.

I.1.2 STEP2025 – Housing & Living

Ambitions and objectives related to lifestyle and consumption: The structure of STEP2025 does not admit any clear sectoral differentiation, so that information on housing & living cannot be found in a dedicated chapter for its purpose, but in an integrated understanding of housing as policy field. Moreover, sustainability and energy relevant aspects constitute the guiding thread through the policy, just like participation and stakeholder management, guided by ideals of multi-functionality and a compact form ideal. In the housing field special consideration is given to the idea that living areas are adapted to the life standards of individuals- in that sense housing policy Is articulated in terms of the interests/choices of particular stakeholder groups, be they citizens, entrepreneurs or others.

Strategic priorities related to lifestyle and consumption: Lifestyle and consumption themes in housing & living are addressed throughout the document, but mostly through activities on other policy areas(see mobility or open space) or as general procedural governance principles governing the provision of all goods that the policy foresees to regulate and produce. Mostly also the concentration has shifted from a focus on housing to a focus on living that is from building to the spaces In between them, so that one needs to look more on the side of public and open space and social infrastructure. The focus lies here especially on a integration of housing and the provision of education infrastructure

Type of measures related to lifestyle and consumption

Related strategic areas of intervention for addressing lifestyle and consumption:

- Mobility
- Social infrastructure
- Open space policy

Summative table of measures addressing lifestyle choice: STEP 2025 – Housing & Living

STEP 2025 Housing & Living	Production side	Consumption side
Objectives/ operational targets/ priorities	**Policy Priorities** – Prioritizing inner city development to urban expansion – Adding residential units in inner city areas and better quality in existing structures – Investing in areas with above average accessibility in public transport – Fostering of polycentric urban structure – Limiting the effects of gentrification	
Measures		
Regulations	Fostering of high density compact city type of residential structures	
Infrastructure provision	Focus on inclusive urban development through effective monitoring systems for the infrastructure needs, especially education that arise in the context of housing projects	

STEP 2025 Housing & Living	Production side	Consumption side
Financial incentives (opportunities)		Evaluation and adaptation of financial incentives to retrofit to satisfy both energy targets and social imbalances
Restrictions/ Enabling measures		Definition of rules and standards for participation of citizens and local residents Development zones as a zoning category that leave private stakeholders enough room and flexibility to bring new creativity into existing development processes
Awareness raising		Management of inner city areas through participatory institutions and structures Deeper integration of citizens in the actual implementation of building projects
Expected results on sustainable consumption practices	Raising consumption of housing in inner city areas Encouraging energetic retrofitting of existing building stock Encouraging sustainable consumption practices in existing housing & living arrangements through greater participation	

I.1.3 KLIP II – Housing & Living

Ambitions and objectives related to lifestyle and consumption: An explicit target of KLIP II is to influence behaviour and motivate sustainable consumption of end users in the building sector. In the understanding of the document, changes in consumption behaviour are primarily conceived of in terms of greater energy efficiency of infrastructures. While information campaigns are mapped on the different measures, they seem to be conceived of as a supplement rather than an integral component of the policies improving energy consumption the housing sector.

Strategic priorities related to lifestyle and consumption: In terms of infrastructure provision, the focus on changing consumption lies very much on improving the willingness of actors to take advantage of retrofit funding an measures. In their information campaigns KLIP II targets specific groups, especially companies, children and teenagers, private households, private owners and retrofitters, as well as advanced age groups- This degree of differentiation is absent in the elaboration of the technological aspects of improved housing infrastructure, where there exists a typology of buildings but no typology of housing.

Related strategic areas of intervention for addressing lifestyle and consumption

N/A

Type of measures related to lifestyle and consumption: Measures targeted directly at behaviour change are information and marketing campaigns, and financial incentives for retrofit. On the system of provision side, instruments are mostly of the regulatory type advocating stricter building codes an certain technological standards of existing and new buildings.

Summative table of measures addressing lifestyle choice: KLIP II – Housing & Living

KLIP II Housing & Living	Production side	Consumption side
Objectives/ operational targets/ priorities	**Operational target** – Reduction of CO_2 Emissions caused from heating and cooling of buildings through improvements in the energetic quality of new and existing building stock	
Measures		
Regulations	Setting higher energy performance targets through building restrictions	
Infrastructure provision		
Financial incentives (opportunities)		Focus of retrofit financing on end-energy performance of buildings instead of heating demand alone Financial subventions for particularly ecological housing projects
Restrictions/ Enabling measures		
Awareness raising/ Stakeholder engagement		Information campaigns targeted to specific groups(children, companies, retired, private owners) Public information on energy-efficient lighting, use of electric appliances at home Information and marketing for energy efficient retrofitting and clean building technologies Marketing of exemplary measures related to consumption in city-owned assets
Expected results on sustainable consumption practices	Less consumption of electricity related to lighting buildings and end-user appliances More use of city retrofitting programs to increase energy performance of buildings	

I.2 Vienna – Mobility & Transport

I.2.1 STEP05

Ambitions and objectives related to lifestyle and consumption: Lifestyle and consumption questions are integral to the objectives and ambitions of mobility & transport-infrastructure in STEP05. At this point it will be important to note that even though the dedicated chapter clearly adopts an "infrastructural perspective" in its title, communication and acceptance are the main pillars of the concept of intelligent mobility presented in the strategy. This focus directly results from a principled commitment towards sustainability as one primary rule guiding infrastructure policy in the area. Behavioural change and consumption patterns are explicitly addressed as an important lever in transport. Individual behaviour and lifestyle choices are also important analytical reference units for the estimation of travel demand in the Viennese agglomeration.

Strategic priorities related to lifestyle and consumption: The increased awareness of urban mobility & transport goals is conceived of as the primary instrument for the change of unsustainable mobility patterns. Public awareness campaigns on the local level, increasing the attractiveness of biking and walking, as well as mobility education are in principle encouraged by STEP05. The focus on lifestyles is mediated through the treatment of walking and cycling, which fosters an understanding of streets both as links and public spaces as well as adequate infrastructure for physically impaired people.

Related strategic areas of intervention for addressing lifestyle and consumption

- Climate protection policy
- Open public space policy
- Land use policy

Type of measures related to lifestyle and consumption: In terms of measures in mobility & transport, lifestyle choices are primarily addressed through the prism of walking and cycling policy and the fostering of sustainable mobility patterns. There is a rough balance between consumption and production measures aiming to address lifestyle changes, and a particular focus on public information campaigns and capacity building in the sector(compared to housing & living within same document)

Summative table of MEASURES addressing lifestyle choice: STEP 2005 – Mobility & Transport

STEP 2005 Mobility & Transport	Production side	Consumption side
Objectives/ operational targets/ priorities	**Overarching objectives** – Until 2020 the balance between motorized and public transport should be 44 to 55% respectively, compared to 35 to 65% in 2005 **Operational targets** – Reduction of motorized individual traffic to 25% – Increase of biking to 8% – Increase of public transport use from 34 to 40%	
Measures		
Regulations		
Infrastructure provision	Completion of biking road infrastructure up to high standards, provision of safe and secure bike parking stations Light, sound, and tactile infrastructure for physically impaired people Temporary or permanent car free zones, with investment into the walking quality of the streetscape Enlargement of existing tube network with special consideration for passenger needs, and particular attention to the needs of physically impaired	
Financial incentives (opportunities)		Reduced public transport for work-home travel
Restrictions		Parking space management

STEP 2005 Mobility & Transport	Production side	Consumption side
Awareness raising		Basic information package on mobility choices for newly incoming residents Public information campaigns to foster car-pooling, remote working Awareness campaigns in schools
Expected results on sustainable consumption practices	Increase of consumption of walking cycling and public transport Reduction of individual motorized traffic or making cars used differently, through car pooling	

I.2.2 STEP2025

Ambitions and objectives related to lifestyle and consumption: A shift to the consideration of consumption patterns is evident when considering the title of the dedicated chapter to this thematic area- "the diversity of mobility". The policy founds itself on the recognition of diversity of lifestyles to which the urban system of mobility needs to adapt. In this context mention is both of the exigencies of new work-life balance and flexible work relationships in urban areas and the differing mobility patterns and preferences of different age groups in Vienna.

Strategic priorities related to lifestyle and consumption: Mobility strategy is found on a principled commitment towards multimodality, the achievement of climate targets, and the extension of these to the whole metropolitan region and the conception of streets both as links and as places in their own right. Strategically, mobility policy is guided by the integrated vision of sustainability and the imperative to introduce a comprehensive travel demand management system that gives more importance to choice.

Type of measures related to lifestyle and consumption: Choice is both conceived as the product of supply of infrastructures and effective incentivisation through consumption side instruments, so that infrastructure provision is as important as awareness and stakeholder processes to achieve behavioural change.

Related strategic areas of intervention for addressing lifestyle and consumption:

- Open space policy

Summative table of measures addressing lifestyle choice: STEP 2025 – Mobility & Transport

STEP 2025 Mobility & Transport	Production side	Consumption side
Objectives/ operational targets/ policy priorities	**Policy Priorities:** – Fostering of sustainable transport modes – Increase of public transport – Fostering multimodal infrastructures	
Measures		
Regulations		

STEP 2025 Mobility & Transport	Production side	Consumption side
Infrastructure provision	Multimodal infrastructure nodes Introduction of a travel card allowing for better travel demand management between different modes in public transport including car sharing Extension of car-sharing and biking infrastructure	
Financial incentives (opportunities)		
Restrictions/ Enabling measures		Application of lighter version of "Stell-platzregulativ", that is the compulsory creation of parking units for residential units
Awareness raising/ Stakeholder engagement		Marketing of public transport and new alternatives forms of mobility in coope-ration with private stakeholders Fostering of public encounter and engage-ment zones in daily mobility(shared space)
Expected results on sustainable con-sumption practices	Increase of consumption of walking cycling and public transport as opposed to individual motorized traffic Greater involvement of citizens private stakeholders in the provision and management of mobility	

I.2.3 KLIP II – Mobility & Transport

Ambitions and objectives related to lifestyle and consumption: Within the document there seems to be an overall greater emphasis on the virtues of lifestyle informed and behaviour targeted approach in the fields of mobility than housing.

Two main objectives can be discerned:

- Reduction of motorized traffic and increase of sustainable mobility for all users
- A specific focus on greater eco-efficiency in the industrial sector

Strategic priorities related to lifestyle and consumption: Overall, the perspectives on user groups are much more differentiated than in the housing sector. User groups are differentiated according to modal choice(public, transport car etc), lifespan(young, old, teenager etc) type of mobility(work mobility, leisure etc).

Related strategic areas of intervention for addressing lifestyle and consumption: The relevant chapter in KLIP II is entitled mobility and urban structure. The area of transport & mobility overall illustrates an integrated understanding of urban policy on consumption patterns mentioning that mobility measures need to be bundled both with

- Housing & living quality
- Social infrastructure
- Economic policy

Type of measures related to lifestyle and consumption: Measures are mostly located on the side of infrastructure provision and awareness raising and capacity building tools. There seems to be an understanding of the need to bundle both types of measures in order to make them effective.

Summative table of measures addressing lifestyle choice: KLIP II – Mobility & Transport

KLIP II Mobility & Transport	Production side	Consumption side
Objectives/ operational targets/ priorities	**Overall objective** – Reduction of motorized traffic **Operational targets** – Increase of public transport to 40% – Increase of bike share to 8% of modal split until 2015 – Stabilization and increase of walking rates	
Measures		
Regulations		
Infrastructure provision	Improvement of walking and biking infrastructure Multi- and intermodal transport infrastructure Car-sharing	
Financial incentives (opportunities)		
Restrictions/ Enabling measures		Mobility education measures
Awareness raising/ Stakeholder engagement		Individualized marketing for specific target groups and creation of unified branding presence Mobility management for companies Information to sustain travel demand management
Expected results on sustainable consumption practices	Increased walking, cycling Decreased car usage or increase of alternative car usage such as car-sharing or car pooling	

II. Amsterdam

II.1 Amsterdam – Housing & Living

II.1.1 Structural Vision & Wonen in de Metropool Woonvisie Amsterdam tot 2020

Ambitions and objectives related to lifestyle and consumption: Amsterdam aims at reducing energy consumption in the city and presents a structured plan towards the achievement of this until 2040. The production of housing and energy standards in the building sector occupy a special role in this regard. It appeals to the wider publics, businesses and communities to contribute towards this reduction. Mention is of increasing choice in the provision of energy for living. Within the area of housing & living, lifestyle questions are of crucial importance.

Strategic priorities related to lifestyle and consumption: The city development is lead by the willingness to increase its attraction to young talent and most policy measures are effectively led by the concern to correspond to the lifestyle choices of this particular group, even though other groups such as seniors are equally mentioned. While it is mentioned to make housing forms more adaptable to lifestyle choices, it is also stated that these need to be guided in the right direction- for instance when preferences go in the direction of suburban low density living which goes against the compact city ideal fostered by the planning document. For instance it say in the document "there should not only be more homes, but there should be more homes in the right place".

Related strategic areas of intervention for addressing lifestyle and consumption:

- Social infrastructure
- Energy

Type of measures related to lifestyle and consumption: It will be important to note that housing & living as well as energy do not have a dedicated set of measures ascribed to them like in other policy areas(for instance transport). In the relevant chapters of the Structural vision, reference is made to the parts covering the strategic vision as those to accommodate measures for housing & living.

Summative table of measures addressing lifestyle choice: Amsterdam Structura Vision & Wonen in de Metropol Wohnvisie – Housing & Living

AMS 2040 Housing & Living	Production side	Consumption side
Objectives/ operational targets/ priorities	**Overarching objectives** – Adding of at least 70000 residential units until 2040 – Saving on gas consumption in existing housing stock by 40% by 2025 compared to 1990 – Ratio of 40% and 60% owner-occupied rental properties – Ratio of 50% affordable (core inventory and low middle), up 25% and 25% mid-term	

AMS 2040 Housing & Living	Production side	Consumption side
	Policy Priorities – Areas with high market pressures should remain accessible to low-and middle-income groups – Catering for the needs of families – Built for specific target groups – Encouraging diverse neighbourhoods – Building and fostering partnerships	
Measures		
Regulations		
Infrastructure provision	"Sun on your roof" campaign allowing individuals to install solar panels on their roof Densification Provision green spaces High quality public space Providing more flexible forms of residential models combined with models of care for the elderly Targeted investments in the residential gas consumption Building energy-efficient homes, with attention to insulation, ventilation and a healthy indoor climate Use of environmentally sustainable materials, such as refraining from tropical hardwoods and polluting paint The development of sustainable buildings (buildings or reuse of materials) The installation of water meters	
Financial incentives (opportunities)		
Restrictions/Stake-holder engagement		Quality assurance agreements for energy targets in the housing sector
Awareness raising/ Capacity Building		Increase ownership and co decision making, by allowing for greater participation and self-control in the development of neighbourhoods Use of energy labels
Expected results on sustainable con-sumption	Encouraging consumption of housing at the right place in the metropolitan region, that is the place appropriate for to the consumers preferences Increasing energy savings in consumption of residential energy	

What moves Amsterdam? 2005-2014

Exemplary for t he integration of spatial planning and social policy stands the strategy, "What moves Amsterdam? 2005-2014". The policy document has the dedicated aim of defining the city's strategic priorities from the vantage point of the people that live in the city. The idea was to give the integration of social and spatial planning questions a clear policy framework constructed around 6 strategic priorities: Amsterdam Kennisstad (Amsterdam Knowledge City); Amsterdam Werkende Stad (Amsterdam Working City);, Amsterdam Culturele Stad (Amsterdam Cultural City);, Amsterdam Sportieve Stad (Amsterdam Sports City);, Amsterdam Zorgende Stad (Amsterdam Caring City); Amsterdam Veilige Stad (Amsterdam Safe City).

II.2 Amsterdam – Mobility & Transport

II.2.1 Amsterdam Structural Plan

Ambitions and objectives related to lifestyle and consumption: Objectives in mobility & transport are driven by the overarching aim to acheve a compat city structure. However, no explicit mention is made within the Structural plan to the individual and its lifestyle within the policy and strategic priorities.

Strategic priorities related to lifestyle and consumption: In terms of strategic priorities, allowing for increasing choice and capacity to choose within the mobility & transport is mostly accommodated by the priority to foster compact urban form, inter and multimodal transport networks, as well as strengthening the alternatives to the car such as biking and walking. Sustainability is an important issue, but is is never directly mentioned in relation to lifestyle changes in mobility patterns.

Related strategic areas of intervention for addressing lifestyle and consumption:

- Land use and housing policy

Type of measures related to lifestyle and consumption: Lifestyle and sustainable consumption are presented exclusively in terms of infrastructural provision. Measures are not explicitly articulated in terms of enabling choice through economic incentives, partnership or information.

Summative table of measures addressing lifestyle choice and sustainable consumption: Amsterdam Structural Plan – Transport & Mobility

AMS Transport & Mobility	Production side	Consumption side
Objectives/ operational targets/ priorities		
Measures		
Regulations		
Infrastructure provision	Indoor parking and garages Improving alternatives to the car, multimodality and intermodal choice Reconfiguration of freight transport, with electric trucks and cargo trams Redevelopment of public space to allow more people to choose bicycle and walking over car Spatial zoning reservations for the extension of sustainable transport uses	
Financial incentives (opportunities)		
Restrictions/ Enabling measures		
Awareness raising/		

AMS Transport & Mobility	Production side	Consumption side
Stakeholder engagement		
Expected Results		

III. Rotterdam

III.1 Rotterdam – Housing & Living

III.1.1 SEAP

Ambitions and objectives related to lifestyle and consumption: Rotterdam SEAP is first and foremost written form the perspective of the different users and their consumption and production of infrastructures, rather than the other way around. Cooperation with a dedicated set of actors is key for the policy makers to achieve sustainability goals in housing and other sectors.

Strategic priorities related to lifestyle and consumption: No clear priorities as to one user group over the other

Related strategic areas of intervention for addressing lifestyle and consumption:

- Mobility & transport
- Waste & energy policy

Type of measures related to lifestyle and consumption: Measures are mostly of the type that enable to citizens to gain better understanding and capacity to make educated choice on sustainable living, The foucs lies clearly on a mix of financial incentives, liberalizing certain restrictions and public information campaigns and capacity building measures.

Summative table of measures addressing lifestyle choice: Rotterdam SEAP – Housing & Living

Rotterdam SEAP Housing & Living	Production side	Consumption side
Objectives/ operational targets/ priorities	**Overarching objectives** – 1+ Mton reduction to be achieved by the built environment and traffic and transport sectors until 2025 compared to 1990. The target requires emissions from transport to be reduced to only 650 Kiloton until 2025 **Policy Priorities** – By the end of this council's term the total areas of parkland, greenery and water will have been increased in all of the ten districts that were the least "green" in 2010 – All development or reconstruction of areas in our city must lead to an improvement in the quality of the living conditions	
Measures		
Regulations		
Infrastructure provision	Investing in planting trees, green spaces that are currently lacking these	
Financial incentives (opportunities)		Subsidize green roofs Citizen initiatives fund to support creative solutions by citizens

Rotterdam SEAP Housing & Living	Production side	Consumption side
Restrictions/ Enabling measures		Quality assurance agreements with home-owners and homeowner associations on integrated package of energy saving measures Encourage competition between neighbourhoods in energy savings
Awareness raising/ Stakeholder engagement		Advice to low income households Publishing statistics and public Information on energy consumption
Expected results	More sustainable energy consumption through energy savings by middle- and large-scale consumers (offices, health care institutions, etc.)	

Rotterdam- Working together to create a sustainable world port city

Rather seldom it occurs that strategies such as Rotterdam SEAP explicitly focus on consumption side aspects of sustainability policy, relating these to concrete measures for their fostering:

"We would like to help all those people in Rotterdam who wish to contribute to making their city more sustainable so that we can actually achieve results. We focus on removing practical obstacles(such as prohibitive regulations, and laborious financing schemes) making agreements with groups of residents and housing corporations, advocating legislations(with National, Government and European Union) and constructing infrastructure (charging stations for electric vehicles, improving bicycle routes, installing a heat networks) as well as supporting favorable sustainability initiatives set up by private individuals."

III.2 Rotterdam – Mobility & Transport

III.2.1 SEAP

Ambitions and objectives related to lifestyle and consumption: Rottertam SEAP is first and foremost written form the perspective of the different users and their consumption and production of infrastructures, rather than the other way around. Cooperation with a dedicated set of actors is key for the policy makers to achieve sustainability goals in housing and other sectors.

Strategic priorities related to lifestyle and consumption: No clear priorities as to one user group over the other

Related strategic areas of intervention for addressing lifestyle and consumption:

- Mobility & transport
- Waste & energy policy

Type of measures related to lifestyle and consumption: Measures are mostly of the type that enable to citizens to gain better understanding and capacity to make educated choice on sustainable living, Little to no infrastructure investment, but instead economic incentives, liberalization of codes and capacity building.

Summative table of measures addressing lifestyle choice: Rotterdam SEAP – Housing & Living

STEP 2025 Housing & Living	Production side	Consumption side
Objectives/ operational targets/ priorities	**Overarching objectives** A 60% reduction in CO_2 traffic emissions in 2050 **Operational targets** – A 40% increase in the use of public transport – A 30% reduction in the number of people inconvenienced by noise, compared to 2008 – A 30% increase in bicycle use – Elimination of "cut-through" lorries in the city – A 10% increase in the number of pedestrians at various locations that are yet to be decided. By the end of this council's term the traffic noise affecting 15,000 inhabitants of Rotterdam in their homes will be at least 3 decibels lower than in 2010 – Elimination of cars fuelled by conventional fuels in the cities – Transporting 50% of the middle-distance passengers and goods by rail or water instead of by road – A 40% reduction in shipping emissions	
Measures		
Regulations		
Infrastructure provision	More facilities for cyclists, enhancing existing networks, providing more parking spaces, and assuring the possibility of long distance commute by bike Implementation of dynamic traffic management system A network of charging stations for electric scooters Introduction of biodiesel for lorries Making the city vehicle fleet more sustainable by the further introduction of electric and hybrid vehicles	
Financial incentives (opportunities)		Citizen initiatives fund to support creative solutions by citizens Scooter scrapage scheme to ensure that petrol scooters are replaced by electric ones
Restrictions/Enabling measures		Encourage competition between neighbourhoods in energy savings
Awareness raising/ Stakeholder engagement		Advice to low income household Publishing statistics and public Information on energy consumption Public information on alternative modes of transport, with focus on electro scooters
Expected results on sustainable con-sumption	Increase of consumption of walking cycling and public transport as opposed to individual motorized traffic Greater involvement of citizens private stakeholders in the provision and management of mobility	

Electric Scooter Paradise

Rotterdam is becoming an Electric Scooter Paradise. Together with the Hogeschool Rotterdam (Rotterdam University), the city is investigating the potential for en¬couraging the use of electric scooters in the city. A dozen public bicycle sheds will be equipped with recharging sta¬tions for electric bicycles and scooters. Since May 2010 four hundred inhabitants and employees in Rotterdam have been testing electric scooters to gain an impression of how easy it is to move about the city on these vehicles. The "e-scooters" have been made available free of charge by the Transport Coordination Centre Rijnmond (VCCR), under the motto: Seeing is Believing.

IV. Stockholm

IV.1 Stockholm – Housing & Living

IV.1.1 Walkable City Plan

Ambitions and objectives related to lifestyle and consumption: By 2030, 100,000 new homes are planned to be constructed for the city that is expected to grow by 200,000 new Stockholmers until then. The housing shortage and the required retro-fitting of large scale suburban housing estates are the main challenges for Stockholm in the area of housing & living[2]. Lifestyle issues and consumption patterns are stated in relation to the location choice of citizens (segregation) and the accessibility of retail areas and every day services.

The Walkable City Plan addresses the segregation in Stockholm and the strong social disparities between districts and regions. The segregation is seen as linked to the building structure: Within each district or residential area, mostly one building type is predominant, which attracts (or banishes) certain social groups. Occasions for intercultural exchange are rare. Thus, the aim is to promote social integration by the development of more shared public places, where citizens of different backgrounds and different housing areas should meet regularly. Additionally, the "awareness of the everyday needs of various groups in society should be expanded through extended dialogue and surveys" (p.20). The importance of attractive public spaces is further stressed related to the city's quality of life. The planning aims are to "consider the amenities and design of public spaces based on the needs of different groups and the character of the district" (p. 19).

Daily life routines of Stockholm's citizens are addressed when speaking of the spatial dispersion of service facilities and retail areas. Retail areas are concentrating in large shopping centres out-of-town and in the city centre. The aim of the City is to promote local centres, which has been accomplished through infill developments.

Strategic priorities related to lifestyle and consumption: In terms of strategic priorities related to lifestyle, the Walkable City Plan mentions households with limited finances as well as "specific groups" as older people, students, disabled people and young people. A strategic focus lies on lessen the social disparities (education, income level, ethnic background) as well as the better coordination of urban development and the expansion of public services (pre-school, education, sheltered housing).

Related strategic areas of intervention:

- variation of building types with different forms of tenure in every part of the city
- need for long-term collective development with focus beyond the individual district, considering the integration of different parts of the city

[2] Erman (2010): The walkable city – the concept of Stockholm. Vienna/CORP 2012, 15 May 2012

- integration of the labour market (integration of all social/ethnical/etc. groups into the labour market)
- shared public spaces
- provision strong education and language skills (in all areas of the city)

Type of measures: The WCP does not mention measures, but strategies and aims, while the SEP is more concrete and states (self-binding) decisions that react on the European directives, stating that new houses built from 2020 onwards must have an energy use near zero.

Summative table of measures addressing lifestyle choice: Stockholm (Walkable City Plan 2010 (WCP); The Stockholm Environment Programme 2012-2015 SEP)

Stockholm Transport	Production side	Consumption side
Ambitions & objectives	Plans for 100,000 new homes by 2030 (for 200,000 new Stockholmers) **More integrated, better connected city** – Develop new housing areas that link the inner and the outer parts of the city together – Continue development of central Stockholm – Focus on strategic nodes of development in the outlying areas that are built with more density, provide a variety of housing types and a mix of functions (parks, businesses, services) – Connect city areas by infrastructure improvements and attractive meeting places in green spaces – Create a vibrant urban environment (preservation of green versus infill development; improve public spaces)	
Measures		
Regulations	New buildings on land, designated by the city shall have an energy use not higher than 55 kWh/m^2. [SEP] Buildings owned by the city are energy efficiently retro-fitted when they have to be renovated. [SEP]	
Infrastructure provision		
Financial incentives (opportunities)		
Restrictions		
Awareness raising		

Stockholm Transport	Production side	Consumption side
Expected results	The strong focus of urban development on strategic nodes shall create a polycentric city structure. By further linking them with (public) transport infrastructure, the aim is to create a more cohesive city, which is not solely oriented towards the city center. A greater variety of housing shall attract many Stockholmers (of different social and ethnical groups). Regulations or decisions of the city to reduce the energy use of city owned buildings target the overall energy consumption of the inhabitants, but not their behaviour. Regarding behaviour, implicit expectations that Stockholm's cities accept these new polycentric nodes as their centers of activity (for housing, education and leisure) and will thus decrease their daily transport mileage.	
Actual results		

Vision Järva – Sustainable Järva – Rebuilding the Suburbs

Järva is an area with over 60.000 inhabitants. It is located around to a nature reserve (Järvafälet) and an important ICT-cluster Kista. Järvas building stock dates back to the million homes programme of 1965 and 1975. The aim of this pilot project is to retrofit the existing building stock in order to meet Stockholm's target of being fossil fuel free in 2050. The measures include the retrofitting of 7 residential buidings (50% energy reduction to 88 kWh/m^2). Based on the results a housing company plans to refurbish additionally 5200 flats until 2022. Further actions go beyond technical standards: during the "Järva Dialog" 10.000 inhabitants participated and commented on the renovation plans. 30.000 opinions were gathered about the strengths and weaknesses of the area. Multipliers (property managers, service personnel) are trained to spread information about sustainable lifestyles. Cycle paths are constructed or upgraded.

IV.1.2 SEAP Stockholm

Ambitions and objectives related to lifestyle and consumption: Until 2015, the main aim the city is to reduce GHG emissions to 3.0 tonnes per capita. By the year 2050 the city of Stockholm shall be fossil fuel free.

Strategic priorities related to lifestyle and consumption: The intentions linked to these goals focus on measures within the city's scope of action. They thus concentrate on the building stock of the municipality and the district heat production, which is partly owned by the city administration.

Related strategic areas of intervention: –

Summative table of measures addressing lifestyle choice: Stockholm SEAP 2010-2020

Stockholm Housing & Living	Production side	Consumption side
Ambitions & objectives	Plans for 100,000 new homes by 2030 (for 200,000 new Stockholmers) Develop new housing areas that link the inner and the outer parts of the city together	Reduce GHG emissions to 3.0 tonnes per capita by 2015.
Measures		

Stockholm Housing & Living	Production side	Consumption side
Regulations		
Infrastructure provision	Energy efficiency for buildings – Energy-efficiency improvement programme for city owned buildings [SEK 10 billion up to 2015, [SEAP] – Energy efficient construction of Royal Seaport [SEAP] – Energy-efficiency improvements and low-energy buildings of private owners [SEAP] Improvement and enlargement of district heating network – Increased use of district heating – Change of district heating mix (composition of the fuels used); energy efficiency measures of the district heating procdution (e.g. construction of a new combined heat and power plant, flue gas condensation) [SEAP] – Halving use of coal in favour of biofuel for district heating production (efficient but unprofitable)	
Financial incentives (opportunities)		Loans to replace oil-fired boilers or other energy efficiency measures (conceivable measures)
Restrictions		
Awareness raising		Municipal inspection and advice of building owners and companies (conceivable measure)
Expected results	The expected results in the housing sector aim at the change of consumption, and not at changing behaviour. – The above stated energy efficiency improvement are expected to result in a decrease of 34,400 t CO_2 e emissions by 2015 (compared to 2010) and include measures of the city (-27,500 t), private building developers (- 800 t) and private building owners (6,000 t). – Improving the energy mix for district heating will reduce CO_2-e emissions by 151,000 tons; the enlargement of the district heating system by 18,000 tons. – There is a high potential for reducing emissions within conceivable measures targeting private owners and investors. Conceivable measures in this direction are conversion loans (-20,000 t CO_2e) and municipal inspection (-2,500 tons). However, to implement this measures is not yet decided.	
Actual results	Replacing oil and gas-fired boilers by district heating and heat pumps is the main single reason for decreasing emissions in Stockholm. At present, district heating is served by almost 80% renewable energy sources form waste and over 80% of Stockholm's total heating needs are covered by district heating. (SEAP, p.11) Energy efficiency retro-fitting further led to a decrease of energy use. Most cost-efficiently was improving the automation systems for ventilation and heating, as well as insulating windows and using more efficient lighting systems. (SEAP, p.11)	

IV.2 Stockholm – Mobility

IV.2.1 Walkable City Plan

Ambitions and objectives related to mobility: The city of Stockholm has set the ambitions target to be fossil fuel free by 2050. This shall be reached by expanding and energetically improving the district heating system and by providing attractive public transport. By 2015 the GHG emissions shall be reduced to 3.0 t per capita, currently (2010) they stand at 3.4 tons per capita. (Stockholm Action plan for Climate and Energy 2010-2020).

Related strategic areas of intervention: In concrete terms, the most important objectives for the City Plan are to cut traffic emissions, to increase the modal split of environmental friendly transport (public transport, cycling, walking), to reduce traffic noise and to lower emissions of greenhouse gases from energy consumption (Stockholm City planning administration 2011, p. 30).

- Emissions shall be reduced by planning which promotes land use and traffic systems reducing the need to travel by car and promote public transport.
- New energy solutions, e.g. biofuels-based cogeneration plants for power and heat, shall improve the efficiency in energy use and cut GHG emissions.
- Zoning plans must safeguard areas and buffer zones for utilities infrastructure (heating plants, water and sewage systems, etc.)
- Regional collaboration for efficient logistic systems shall improve the efficiency of urban supply chains.
- Conflicts are seen between densification projects – which are considered sustainable in the long term – and their implications for the construction of new or enlarged infrastructure (roads, utilities) and their impacts on the local environment. Here public interest and improvements for many citizens are prioritised.
- Is the policy addressing producers and/or consumers of the built environment? = stakeholder and citizens
- Are citizens integrated in the sustainable urban development policies and at which stage of the processes (before the elaboration of the strategy document, during the elaboration of the document, when implementing the guidelines or measures of the document)?

Other significant measures relating to climate change are promoting technological advances and facilitating efficient energy use through careful urban planning. The city is also a major procurer of goods and services, which puts it in a strong position to promote the application of environmentally effective technology.

On project level, e.g. Stockholm Royal Seaport, the focus will be on climate-friendly living, the eco-cycle and lifestyle issues with the aim to make the neighbourhood fossil fuel free by 2030.

Increasing road traffic leads to several environmental problems, so planning needs to create an urban environment and a structure that supports major expansion of public transport, promotes walking and cycling, and leads to only limited use of the car. (Stockholm WCP p. 10)

A dense and concentrated city encourages walking and cycling, and promotes the need for reliable public transport. It is also possible to use the infrastructure more efficiently, because it can perform different tasks at different times of the day. (Stockholm WCP, 22)

The expansion of the cycle network and an increased realisation of the bicycle's ability to compete with other modes of transport have helped give a major boost to the number of people cycling into the inner city over the past decade. The expansion of the cycle network and an increased realisation of the bicycle's ability to compete with other modes of transport have helped give a major boost to the number of people cycling into the inner city over the past decade. The design of traffic and street environments thus has a major impact when it comes to achieving the goal of a cohesive urban environment with good conditions for pedestrians and cyclists. (Stockholm, WCP, 23)

Type of measures: On the production side the measures concentrate clearly on infrastructure provision. Infrastructure improvement is clearly the main intension of the measures. On the consumption side focuses on financial incentives, restrictions and awareness raising.

Summative table of measures addressing mobility (Walkable City Plan 2010:WCP; Stockholm a sustainably growing city 2013: (SSGC); Stockholm SEAP; Stockholm Cycling Plan 2012: SCP; Urban Mobility Strategy 2012: UMS; Stockholm Agreement, SA)

Stockholm SEAP Mobility	Production side	Consumption side
Ambitions & objectives to transform consumption patterns	Long term expansion of the public rail transport as backbone for sustainable urban transport [WCP] – Physically integrate outer parts of Stockholm and the region with each other by transport linkages – Cooperate in the region to ensure a long-term focus on public transport – Faster journey times for the high capacity modes and better journey time reliability for all transport modes – Focus planning on increased mobility for pedestrians and cyclists – Develop streets and roads as attractive urban spaces to increase the use of walking for more journeys Create a dense and mixed urban development that reduces the need to travel (UMS,2012)	Become a fossil fuel free city by 2050 [WCP] Reduce road traffic emissions by 30% by 2030 [SA] – Encourage the use of high capacity transport modes – Ensure private cars are used for journeys where they are the most effective transport mode – Increase number of cyclist passes in the city by 50% by 2018 and 100% by 2030 [SCP] – Raise share of bicyclists (on all commuters) from 9% to 12% in 2018 and at least 15% in 2030. [SCP] – All kids between 10 and 15 years shall bike to school every day [SCP]
Regulations		Change of traffic regulations, e.g. cycling against one-way traffic (CP2012)

Stockholm SEAP Mobility	Production side	Consumption side
Infrastructure provision	Investments in public rail transport [SSGC] – New transport connections (Citybanan) – New railway tunnel with two new stations (doubling rail capacity through Stockholm) – New cross-tramway (regional public transport) – More rapid bus lanes Investments in motorized transport – More parking spaces for car pooling – New road for interconnection of outer city The City is investing SEK 1 billion in bicycle (infrastructure and transport organization) up to 2018 – Widening of cycle paths/lanes, more direct relations (incl. (reducing the number of street-side parking spaces) – More cycle parking facilities (focus at public transport nodes) – Signal prioritization and green wave – Improve winter maintenance on cycle network	
Financial incentives (opportunities)		Maintain congestion tax Introduce climate tax ("conceivable" measure) Raising parking fees ("conceivable" measure)
Restrictions		100% clean vehicles for city administration Conceivable to extend the regulations of local environmental zones to include private cars and carbon dioxide emissions [SEAP]
Awareness raising		Leading taxi firms and certain delivery firms decided to only purchase clean vehicles Marketing of alternatives to car travel ("conceivable" measure) Information campaign about investments and City's goals
Expected results	The growth of the city will lead to an increase in road transport mileage, but counter measures shall ensure that cars will only be used, where they are the most effective transport mode. It is thus expected that improvements in public transport infrastructure will enhance the use of public transport and its share of modal split. Particularly, the number of cyclists during the whole year shall be raised with significant improvements in the infrastructure.	
Actual results	In the past, several measures in the transport sector have already shown their impacts. The introduction of congestion charging in 2007, together with investments in public transport led to a share of 75% of the trips during rush hour periods. Congestion charging further led to an increase in the number of clean vehicles, since they are exempt from the tax. Further, the investments into cycling infrastructure led to doubling in the use of cycles in Stockholm in the past 10 years.	