

SUPER – Sustainable Urbanisation and Land Use Practices in European Regions

Applied Research

Annex 3.12: Case study SE-Stockholm

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Table of contents

List of Maps	ii
List of Figures	ii
List of Tables	ii
1 General introduction	1
1.1 Case study SE-Stockholm	2
1.2 Scale/s of analysis	4
1.3 Geographical scope	4
2 Contextual analysis	5
2.1 Typical urban development	5
2.2 Basic institutional conditions	7
2.3 Initiative	10
2.4 Planning permission	10
2.5 Development process	11
2.6 Current issues	12
3 Sustainability of objectives	13
3.1 Thematic dimensions	13
3.1.1 Municipal level	13
3.1.2 Regional level	14
3.2 Temporal balance	16
4 Impact assessment	19
4.1 Pre-intervention	19
4.1.1 Identification of the problem	19
4.1.2 Inception of goals/action	20
4.1.3 Pre-intervention conclusions	21
4.2 Implementation	21
4.2.1 Technical capability	21
4.2.2 Data and information	22
4.2.3 Participation	24
4.2.4 Strategic vision	26
4.2.5 Institutional coordination	27
4.2.6 Institutional leadership	29
4.2.7 Political will	29
4.2.8 Implementation conclusions	31
4.3 Sustainability assessment	32
4.3.1 Planning and development culture	32
4.3.2 Economy	32
4.3.3 Ecology	33
4.3.4 Equity	34
4.3.5 Balance	35
4.3.6 Multi-stakeholder assessment conclusions	36
4.4 Conclusions	37
4.5 Implications for sustainable urbanization and land use	39
5 Sources	44

List of Maps

Map 1.1. Location of case study “SE-Stockholm”	3
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List of Figures

Figure 2.1: Stockholm’s expansion strategy and implementation through 10 focus areas	6
Figure 2.2: Spatial policy directions for Stockholm development 2050.....	6
Figure 2.3: Evolution of the anthropic occupation in Stockholm	7
Figure 2.4: Organisation of spatial and land-use planning in Sweden.....	9
Figure 2.5: Landownership transition for housing developments.....	11
Figure 2.6: Completed dwellings in newly constructed buildings, Stockholm County.....	12
Figure 3.1: Sustainability	15
Figure 3.2: From goals to priorities.....	17

List of Tables

Table 1.1: SE-Stockholm scales.....	4
Table 2.1: Temporal balance in Stockholm RUFSS 2050 tangible goals, targets and regional priorities	17
Table 3.1: The main focal issues according to interviewed stakeholders	19
Table 3.2: Instance summary	31

Abbreviations

AESOP	Association of European Schools of Planning
ARTS	ESPON Assessment of Regional and Territorial Sensitivity
CEMAT	Council of Europe Conference of Ministers Responsible for Spatial/Regional Planning
CLC	Corine Land Cover
COMPASS	ESPON Comparative Analysis of Territorial Governance and Spatial Planning Systems in Europe
EC	European Commission
ECP	ESPON Contact Point
ECTP	European Council of Town Planners
EEA	European Environmental Agency
ERDF	European Regional Development Fund
ESPON	European Territorial Observatory Network
ESPON EGTC	ESPON European Grouping of Territorial Cooperation
EU-LUPA	ESPON European Land Use Patterns
EU	European Union
GVA	Gross Value Added
ISOCARP	International Society of City and Regional Planners
ITI	Integrated Territorial Investments
JRC	EU Joint Research Centre
LCC	(Corine) Land Cover Change
LUE	Land Use Efficiency
MCA	Multi-Criteria Assessment
NUTS	Nomenclature of Territorial Units for Statistics
PCG	Project Coordination Group
SCBA	Societal Cost Benefit Analysis
SDG	Sustainable Development Goal
SPIMA	ESPON Spatial Dynamics and Strategic Planning in Metropolitan Areas
SUPER	ESPON Sustainable Urbanisation and Land Use Practices in European Regions
TANGO	ESPON Territorial Approaches for New Governance
TIA	Territorial Impact Assessment

1 General introduction

In ESPON SUPER, the case studies contribute to the objective of unravelling how different interventions in diverse social, environmental and economic settings have transformed land-use development practices. In particular, the aim is to analyse, understand and learn from the successes and failures of practitioners and decision makers over the last three decades in their search for more sustainable land use. All case studies are based on close observation and direct contact with each territory and with the people involved in the design and implementation of each intervention. To this end, each case study was assigned to the project team with the greatest local knowledge of the territory, institutions and language.

The methodological framework used for all case studies consisted of three groups or basic sources of information and knowledge.

1. **Context:** each intervention addressed or influenced a particular land-use development practice which had emerged within a specific territorial and institutional context, which is crucial for understanding and interpreting the results. It was also important to know the objectives related to the sustainability of land use that had been set for each territory, albeit on paper, at the regulatory level. These tasks were based on desk research, even though, in some cases, local stakeholder support was valuable to locate the most relevant pieces of information.
2. **Developments:** the second source of data was the quantitative land use changes in the form of maps and graphs. This allowed each case study team to consider to what extent the underlying contextual factors and the studied interventions had transformed the territory and the rates of urbanization. This information was essential for evaluating the effects that each intervention had on land-use sustainability and, more indirectly, on culture and spatial planning practices.
3. **Stakeholder interviews:** each case study held over ten in-depth interviews with stakeholders involved in one way or another with the intervention. At these meetings, they were asked about the reasons for and the perceived urgency of the intervention, how its objectives were defined and by whom, the experience of implementing each intervention, the pitfalls encountered, as well as the benefits it had brought in terms of improving the three thematic dimensions of land-use sustainability: ecological, economic and social equity. In addition, stakeholder maps were produced that present the type and intensity of the relationships that some stakeholders had with the rest in a visual way.

This report on the case study of SE-Stockholm presents a synthesis of all three outputs in order. It is structured as follows. This introductory section provides a summary of the main characteristics of the case study (Section 1.1), the scale of analysis (Section 1.2) and geographical scope (Section 1.3). Section 2 contextualizes how urbanization occurs in the case study area. It contains descriptions of typical urban developments, how this is regulated, who

promotes it, how it is implemented and emerging challenges regarding land-use development. Keeping with this contextual approach, Section 3 discusses how the studied intervention addresses the challenge of sustainability in its three thematic dimensions (Section 3.1) as well as in its temporal dimension (Section 3.2).

Section 4 presents the main results of the case study research in three parts. Section 4.1 analyses how the priorities of the intervention were configured based on information collected from the interviewed stakeholders. In particular, it seeks to know how a perceived problem was identified or constructed to justify the intervention, the extent to which land use sustainability was a consideration, and whether these elements tended to unite the community in favour of a collective interest or whether, on the contrary, they were a source of tension and conflict. Section 4.2 discusses in more detail how seven organizational and institutional aspects may have influenced the relative successes and failures of the intervention. Section 4.3 combines the analysis of land use changes, the opinions of the consulted stakeholders and, where relevant, the stakeholder maps, to make an assessment of the actual results of the intervention on the planning and development culture and the different thematic dimensions of sustainability. Finally, Section 4.5 explicitly answers questions posed to the ESPON SUPER team, thus reflecting the direct contribution of each case study to the project's objectives.

While each individual case study contributes to answering the questions posed, its true value lies in the possibility of combining and contrasting the outputs of the eleven cases. This choral work is presented in Annex 3.13. The triangulation of results allows for the formulation of generalizable conclusions and recommendations that can contribute to the design of new plans and policies better aligned with the objectives of sustainability and land take abatement at the European level. In this way, the case study presented in this report also contributes to this other broader objective.

1.1 Case study SE-Stockholm

The Stockholm Urban Containment Strategy (Map 1.1) is a strategy focusing on containing further urban expansion adopting a comprehensive perspective that gives consideration to economic, social and ecological dimensions. It gives specific consideration to rural land.

Map 1.1. Location of case study “SE-Stockholm”.



The Swedish planning system is widely known for its world-leading solutions aiming for environmental and social sustainability. However recent economic cycles with the 2008 real estate crisis and the post-2010 start-up boom have challenged some of classic Swedish spatial planning policies. These challenges are especially visible in large urban areas such as Stockholm. Even though Sweden is one of the least densely populated countries in the EU, the rate of metropolitan urbanisation is one of the highest in the EU, as metropolitan regions with at least one million inhabitants provided a home to more than half (52.4%) of the total population (Eurostat, 2016).

The subject of the Stockholm case study is the urban containment policy which is a result of both Swedish planning culture as well as of implementation regional and local plans and strategies. In particular, there are two major documents that pinpoint the urban containment policy. On the county level it is the RUF5 2050: Regional Development Plan for the Stockholm County (Stockholm Läns Landsting, 2017) (swe. Regional utvecklingsplan för Stockholmsregionen 2050). For the municipal level it is the Stockholm City Plan 2030 (swe. Översiktsplan för Stockholms stad) (Stockholms Stad, 2018). They both are mainly focused on economic and environmental goals, whereas the social goals are more spread out through particular thematic or geographic sections.

Both of these documents are addressing rapid metropolisation in terms of sectoral shift towards the service and innovation sector as well as rapid population growth. Stockholm County has

seen intense population increase from 1.9 to 2.3 million inhabitants between 2008-2018. In that period the overall Swedish population increased by over 1 million. The urban containment policies assured that these processes have not challenged environmental performance, especially in terms of CO₂ emissions per capita, air and water quality or recycling (OECD, 2013).

1.2 Scale/s of analysis

The subject of the Stockholm case study is the urban containment policy which is defined by two major documents. On the County level it is the RUF5 2050: Regional Development Plan for the Stockholm County (Stockholm Läns Landsting, 2017) (swe. Regional utvecklingsplan för Stockholmsregionen 2050). For the municipal level it is the Stockholm City Plan 2030 (swe. Översiktsplan för Stockholms stad) (Stockholms Stad, 2018). In the Swedish planning model it is the municipal level that formally has the 'planning monopoly' therefore the main level of the case study is LAU2 – the City of Stockholm. Since the regional and county levels in the case of Stockholm have the same geographic scope, NUTS 3 and NUTS 2 are of secondary importance.

Table 1.1: SE-Stockholm scales

Scales	Main scale	Other scales
Supra/Trans-national		
NUTS 0		
NUTS 1		
NUTS 2		Stockholm Region
NUTS 3		Stockholm County
LAU1 – NUTS 4		
LAU2- NUTS 5	Stockholm City	

1.3 Geographical scope

The geographical scope is equal to the Stockholm Region (NUTS 3 and NUTS 2) with the main geographical scale at municipal level – the City of Stockholm (LAU2). Stockholm region is in fact a functional metropolitan area of Stockholm and even the Stockholm City plan refers to the regional geographic scope in terms of transport, accessibility and environmental sustainability. Both urban development and housing strategies of the city and region are based on the idea of dense functional neighbourhoods with a starfish-like layout.

2 Contextual analysis

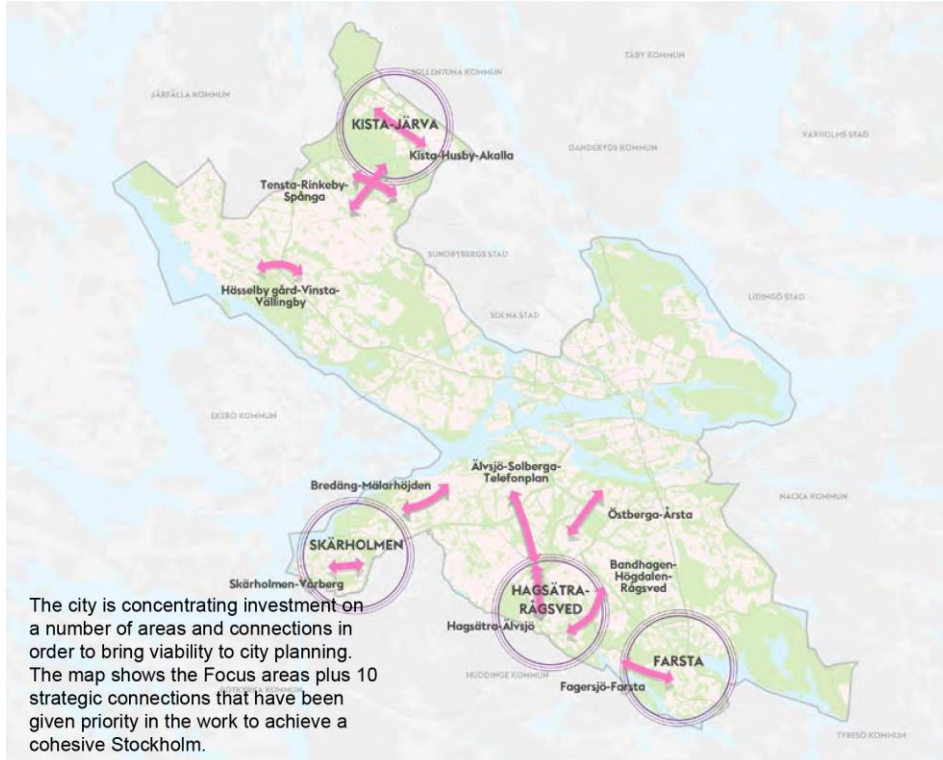
2.1 Typical urban development

Typical developments in Stockholm are rooted in Swedish school of planning founded on modernist, functionalist and rationalist ideas in 1930s and implemented in post-war planning by CIAM affiliated architects, like Sven Markelius, who was a designer of the The Stockholm City General Plan of 1945–1952. A general idea of this modernist planning included spatial expansion of the city along concentric traffic lines, through so-called ABC satellite cities (Arbete-Bostad-Centrum Work-Housing-Centre), like Vällingby or Farsta, as a dominant development pattern. The so-called Million Homes Programme provided over one million dwellings in ten years (1965-74) in a form of concentrated large-scale public housing estates. This massive project aimed at providing housing for growing working class demand and immigration in big cities like Stockholm. It was based on industrial prefabricated production, special incentives for big projects (over 1000 dwellings) and a new model of so-called ‘negotiated planning’ in which state authorities would regulate planning, building and rents as well as provide financial incentives, municipal authorities would develop general plans and private developers would plan and build particular neighbourhoods. In this configuration the local authorities and county architects would have rather weak position and were rather critical of the high-rise developments (Andersson, Bråmås 2018). Although the Million Programme met expectations in quantitative terms and allowed for the preservation of green corridors in the metropolitan area (Figure 2.3), it faced criticism as little mixing in terms of housing tenure and dwelling sizes led to an accumulation of lower income groups and non-Western immigrants in these estates and after the economic crisis in the 1990s resulted in ethnic and socio-economic segregation (Andersson, Bråmås 2018).

Today, territorial models at the municipal and county levels are aiming at developing polycentric urban systems (Hersperger et al., 2018) based on the post-war modernist plans by focusing on containing urban expansion and adopting a comprehensive perspective that gives consideration to economic, social and ecological dimensions.

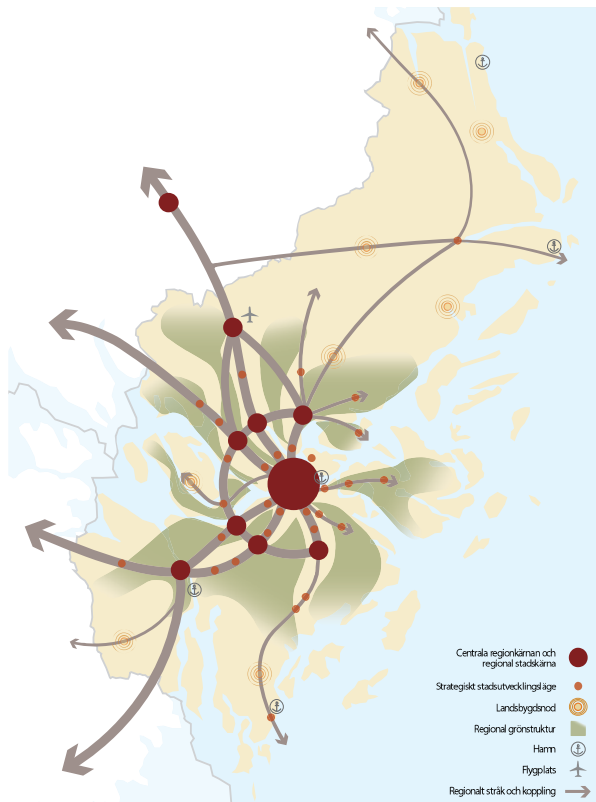
A characteristic land-use practice in Stockholm is the starfish-like development of ‘nodes’ – the former ABC satellite towns, that are to be densified, improved to mixed-use functions and linked by efficient public transport to prevent urban sprawl around the nodes. Therefore Stockholm is seen to be a leader in brownfield development since the mid-1980s providing best practices from the eco-districts that have been developed on brownfield sites to other developments throughout the City and County (OECD, 2013). Nevertheless, problems of segregation, lack of affordable housing remain a spatial challenge.

Figure 2.1: Stockholm's expansion strategy and implementation through 10 focus areas



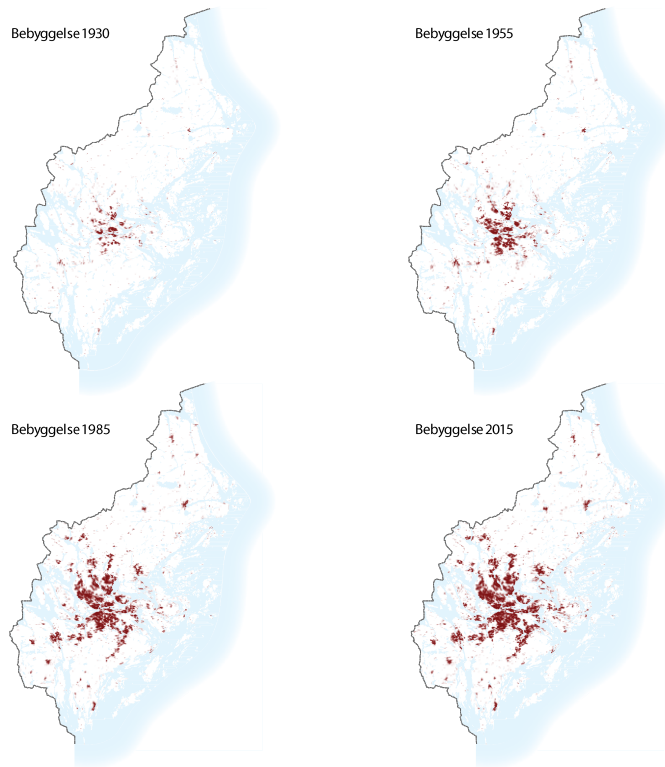
Source: Stockholm City Plan (2018), p. 35

Figure 2.2: Spatial policy directions for Stockholm development 2050



Source: RUF5 2050.

Figure 2.3: Evolution of the anthropic occupation in Stockholm



Source: RUFSS 2050

2.2 Basic institutional conditions

The Swedish planning system reflects the country's administrative structure, that consists of national, county and municipal levels. Planning at the national level is guided by general legislative frameworks, policymaking and indirectly through investment programmes and other policy tools as there are no formal spatial plans at national level. Spatial planning in Sweden is regulated by the Planning and Building Act (PBA), together with other laws and frameworks, such as the EU Environmental Code or the Transport Administration, which is responsible for the planning and delivery of transport infrastructure through the national road and railway networks (Persson, 2013).

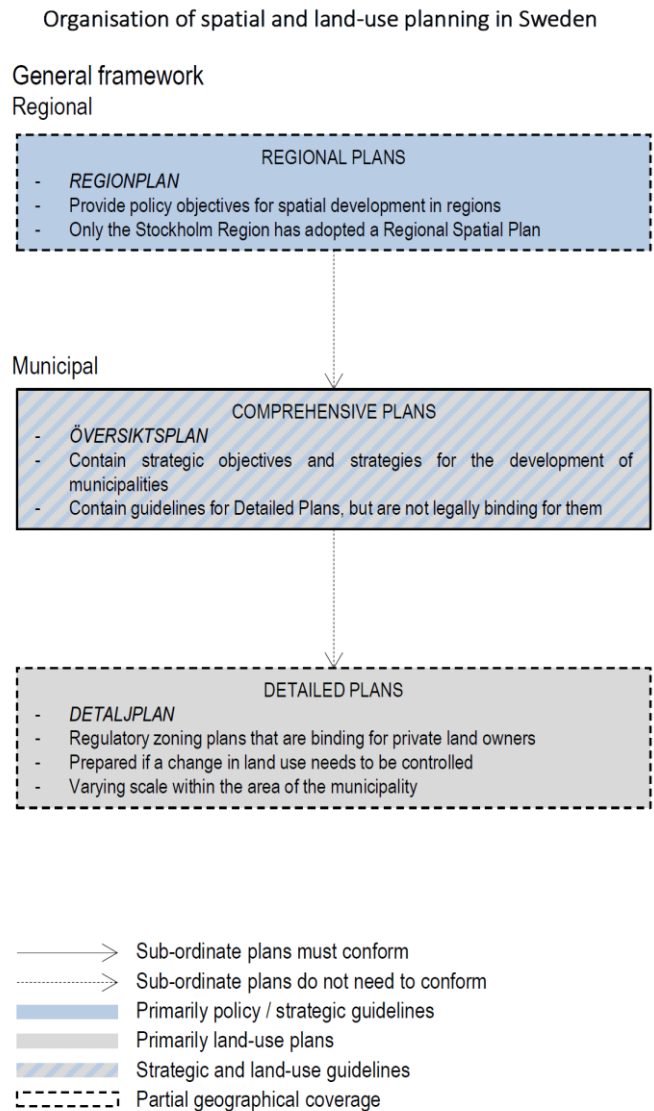
At the regional level there are two main institutions that are responsible for planning: County Administrative Boards, which represent the national government at the regional level and County Councils, which are regional self-governed bodies. The former are responsible for assuring implementation of national guidelines in planning, provision of data, advice and expertise on regional development as well as co-ordination in the case of conflicts between municipalities. The latter are responsible for planning in terms of health care, public transport and economic development.

Municipalities have four main responsibilities in the planning process: local planning (comprehensive and detailed), provision of housing through public-housing companies,

development of technical infrastructure (roads, waterlines, sewage, recycling facilities), as well as management of their land holdings (OECD 2017).

The three basic types of spatial plans in Sweden include the regional plan (very general), the municipal plan, and the local plan (Figure 2.4). At the regional level County Councils may prepare Regional Plans, but they are not mandatory, except for the County of Stockholm, which has produced a regional spatial plan for the greater Stockholm area (OECD 2017). In principle, the municipal level has the most authority and is rather independent in terms of spatial planning (in Swedish planning jargon has a 'planning monopoly'). Nevertheless, it has to include certain land use restrictions laid down in the EC, and must coordinate its actions with other planning bodies (Persson, 2013). Municipalities prepare two types of plans. The Comprehensive Plan (Översiktsplan) is mandatory, covers the entire territory of a municipality and therefore is main tool for strategic planning. It must be reviewed by the municipal council at least once during each legislative period and the County Administrative Boards checks its compliance with national guidelines. The Detailed Development Plan (Detaljplan) is local, covers a limited area and gives obligations and rights to landowners. Detailed Plans are only prepared in areas where it is necessary to control a change in land use and are valid until they are repealed or replaced (OECD 2017).

Figure 2.4: Organisation of spatial and land-use planning in Sweden



Source: OECD 2017

Spatial planning for sustainable land use is thus mainly at local discretion. The comprehensive plan is the municipality's interpretation of sustainability and how it should be achieved generally, not a rigidly governed process imposed from above.

Stockholm is known for its world-leading solutions in terms of environmental and urban sustainability and in 2010 it held the title of European Green Capital. The jury that awarded the title praised Stockholm's achievements in: greenhouse gas emissions reduction, collective heating and cooling systems, reducing traffic congestion through congestion charges. In planning much attention is put on green growth, namely steering urban and metropolitan economic growth in a way that it assures preservation, and improvement of environmental assets as well as prevents and reduces negative externalities and pressures on natural

ecosystems. This sustainable approach seems to be both a genuine development strategy as well as branding strategy targeted at high-end investors and workforce.

By its own definition, RUFSS 2050 is a continuation of efforts to realise a vision of making Stockholm Europe's most attractive metropolitan region. The basis for regional development activities in Stockholm County is the Regional Development Plan for the County of Stockholm. The vision for the Stockholm region is to become one of 'Europe's most attractive metropolitan regions' and this is supported by four objectives:

- an open and accessible region;
- a leading growth region;
- a region with a good living environment; and
- a resource-efficient region.

At the municipal level, the Stockholm City Plan (SCP 2030) aims to make Stockholm a city for everyone with dense and cohesive urban environments in which buildings and green spaces work together, enabling good living environments to be created. The Stockholm City Plan has four goals.

- A growing city: attracting people, companies and visitors from across the world.
- A cohesive city: where moving between different areas and visiting new places comes naturally.
- Good public spaces: diverse local areas with strong identities and flourishing district centres.
- A climate-smart and resilient city: in which efficient land use and a transport-efficient layout foster greater accessibility, a lower climate impact and limited consumption of resources.

2.3 Initiative

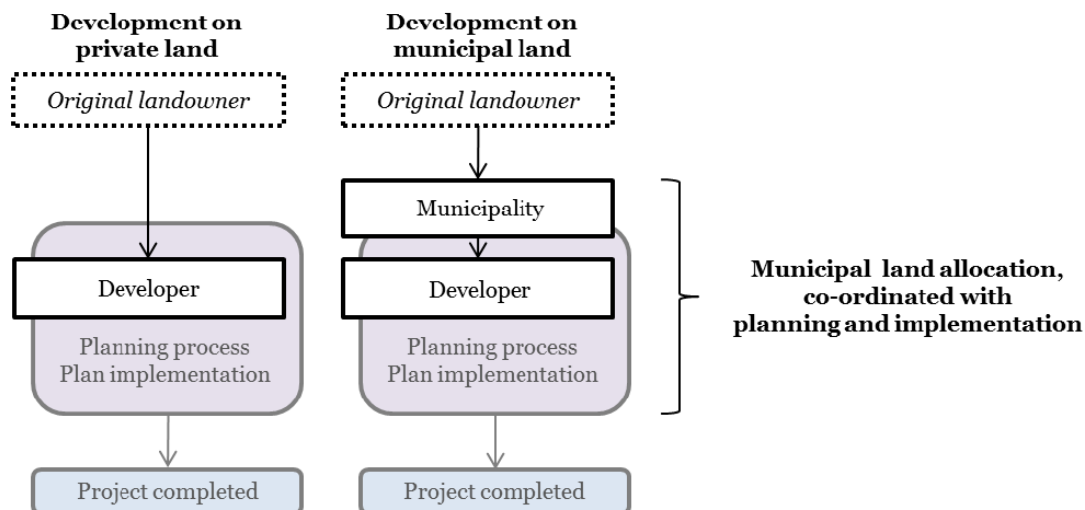
With each municipality possessing a 'planning monopoly', they have the legal power to determine practically all land use within their borders (Blücher, 2013). Moreover, they play a key role in the supply of housing. However, it is external (privatized) developers that carry out the actual implementation of most projects, independently of whether the land is supplied through a municipality or not.

2.4 Planning permission

Since the municipalities, not the private owners, own most of the land for development, the municipal land is the most important subject to planning permissions. On the basis of the Detailed Development Plan the municipality can channel the land to developers by the so-called 'land allocations'. These are an equivalent of planning permissions in a form of a long term lease or site-leasehold that has restricted time span and validity. This planning instrument should not be confused with zoning. While the municipality remains a rightful owner of the allocated land, a developer gets the right to manage it. As a result, a specific type of public-

private partnership is created and therefore, the land allocation highly interacts with the planning process and thereby co-ordinates activities between municipalities and developers well into the implementation phase (Caesar, 2016).

Figure 2.5: Landownership transition for housing developments



Source: (Caesar, 2016).

Moreover, the state regulates planning and building in a number of ways, both the process (e.g. citizens' right to appeal against plans that the municipality adopts) and the qualities of the built environment (e.g. shore protection, noise from traffic and accessibility of apartments). (Lind, 2017). It also means, that planning permission is subject to collaboration and reaching consensus between many different stakeholders (Koglin & Pettersson, 2017).

The current residents might, for a number of reasons, oppose land-use plans, especially if the plan contains rental housing aimed at lower-income groups. In metropolitan areas, where there are many municipalities, there can also be a collective action problem where no-one wants to take more responsibility for low-income housing (Lind, 2017).

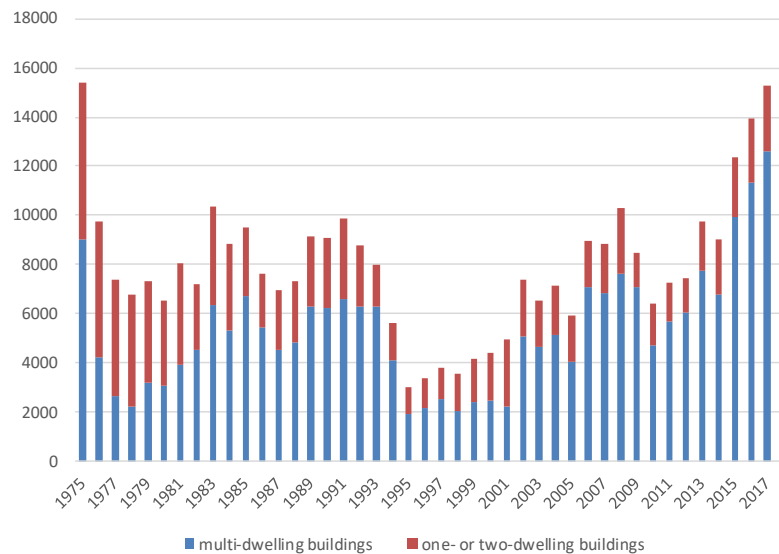
2.5 Development process

After a significant stagnation in construction of housing in mid 1990s and 2000s, it has significantly increased since 2015. The largest developments in the biggest cities have been in centrally-located former harbour or industrial areas, where both development costs and market prices are high (Lind, 2017).

Most new construction targets higher-income groups, but models of more industrialised and/or standardised low-cost housing have been developed. The organisation of municipal housing companies (SABO) has developed a series of models for such construction, called Kombohus. As these apartments are more basic, the demand from higher-income groups can be expected to be relatively low and this means that these apartments, especially in suburban locations,

would be available for lower-income groups even if there are no formal income limits (Lind, 2017).

Figure 2.6: Completed dwellings in newly constructed buildings, Stockholm County



Source: own elaboration based on SBC data.

2.6 Current issues

- Environmental sustainability achieved
- Challenged social sustainability
- Challenged economic sustainability
- Access to rental apartments
- Spatial segregation
- Tenant segregation ('new' and old tenants)
- Black rental market
- Impaired economic competitiveness

3 Sustainability of objectives

3.1 Thematic dimensions

3.1.1 Municipal level

The Stockholm City Plan (SCP 2030) aims at Stockholm to be a city for everyone with dense and cohesive urban environments in which buildings and green spaces are in harmony, thus creating good living environments. The issue of sustainability in SCP 2030 is derived from general framework documents including the UN Sustainable Development Goals (2015), the Regional Plan RUF5 2050 and the city's preliminary planning document – Vision 2040, which puts bridging social disparities as a central theme. The main aim of the SCP 2030 is that Stockholm is cohesive, climate-smart and economically and democratically sustainable. The Stockholm City Plan has four goals, which correspond to the thematic dimensions of sustainability.

In terms of **economic sustainability** SCP 2030 defines Goal 1. A growing city aiming at attracting people, companies and visitors from across the world. A rapid rate of urban development is to guarantee homes and public services for everyone, as now the lack of housing is affecting young adults, students and migrants, restricting development and business growth too. Attractiveness is also understood as new public investments (schools, kindergartens, hospitals, transport, public spaces, sport and cultural facilities and other urban utilities) as well as new office space locations in central districts. City planning is seen as an important tool in strengthening what is seen as most important urban features for localisation of office space: access to labour, transport, restaurants and services. According to the plan, high-density, mixed use urban environments offer the features of city living that many companies are seeking, therefore the streetscape needs to be used effectively. An important aspect of attractiveness is also related to access to green spaces, parks, development that is harmonious with the archipelago landscape (Stockholm City Plan, 2018, p.20-21).

Accessibility is another aspect of attractiveness and the city is focusing on high-capacity modes of transport that assure efficient use of the available space – walking, cycling and public transport – while the car transport is improved in selected areas. Improved cost-efficient and attractive public transport between Stockholm and other towns is supposed to increase accessibility in the region and development of the international Arlanda Airport is given a top priority to expand the regional and national accessibility of the airport (Stockholm City Plan, 2018, p.21).

In terms of **social sustainability** SCP 2030 defines two goals. Goal 2. A cohesive city aims at creating space, where moving between different areas and visiting new places comes naturally. According to that goal people with different backgrounds must be able to encounter each other as they go about their daily lives and the city's many urban settings with all their different features must be accessible to all of the city's residents. Actions foreseen to achieve that include: improving street network by joining streets, corridors and places; transforming oversized roads into urban corridors edged by new buildings with frequent crossing links, more

services, businesses and a better urban environment; filling radial public transport network with traversing links; providing network of green and natural spaces through green corridors that improve wildlife mobility and provide recreation space; providing attractive free-time destinations (playgrounds, food markets, cultural facilities, events, etc.) in every area to encourage building new relationships and bonds between neighbourhoods (Stockholm City Plan, 2018, p.22-23).

Goal 3. Good public spaces aims at creating diverse local areas with strong identities and flourishing district centres. According to this goal every part of the city must offer a good environment in which to live with good access to the benefits of urban living and well-designed, safe public spaces encouraging participation and engagement in local community life. Flourishing local centres with new housing, mixed-use functions (workplaces, offices, co-working spaces) and improved access to services are supposed to assure stronger social cohesion and counteract spatial segregation. In order to avoid the criticised mistakes of big housing projects, new housing developments should be varied in type, size, and forms of tenure to encourage integration and improve adaptability to changing housing needs of different social groups. A common theme that is supposed to contribute to social cohesion are inviting public spaces – streets, parks, squares and corridors, that are accessible, well-designed and sustainable in the long term (Stockholm City Plan, 2018, p.24-25).

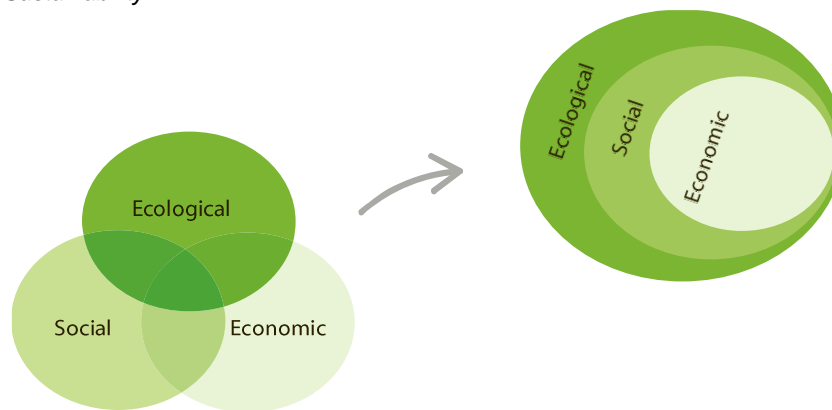
In terms of **ecologic sustainability** SCP 2030 defines Goal 4. A climate-smart and resilient city, which aims at assuring efficient land use and a transport-efficient layout that fosters greater accessibility, a lower climate impact and limited consumption of resources. According to that goal, the structure of the city and its technical systems must be highly functional and resilient, enabling the city to cope with climate change and other stress factors. Some actions that should contribute to achieving this goal include: effective land use through development on brownfield sites in former industrial and port areas as well as over-scaled traffic areas; resilience and energy-efficiency solutions in terms of building, designing transport systems and providing public services; flexible transport design and smart traffic management; robust and independent infrastructural facilities free of weak links and dependencies; solutions and infrastructures that will mitigate effects of climate change such as heat waves, storms, rainfalls, humidity, water retention; providing accessible ecosystem services through resistant green infrastructure such as small parks, areas of greenery and water, communal gardens, single trees, planting on streets and plants growing on walls and roofs (Stockholm City Plan, 2018, p.26-27).

3.1.2 Regional level

RUFS 2050, which stands for Regional Development Plan for the Stockholm Region (Regional Utvecklingsplan För Stockholmsregionen) is both a regional plan and regional development programme. This shifted the regional plan from a physical plan to roadmap integrating growth, which lifted its formal status towards a steering document for government planning in the

county. The regional development plan forms the basis of the municipalities' strategic planning, regional structural fund programmes and infrastructure plans. RUFSS 2050 is a continuation of efforts to realise the vision of Stockholm as Europe's most attractive metropolitan region. The structure of the document directly corresponds to sustainable development model, however it arranges its dimensions in a concentric manner. RUFSS defines Stockholm as a region, where people are in the centre, ecology sets the framework and economics are a means towards, and a prerequisite for, sustainable development.

Figure 3.1: Sustainability



Source: RUFSS 2050 (short version in English p.7).

RUFSS 2050 underlines that the three sustainability perspectives - the economic, the ecological and the social – are mutually dependent on each other. Investments and development efforts should lead to increased competitiveness, health and well-being of the region's inhabitants, while also the environmental boundaries are not exceeded because both human health and the economic development are dependent on ecosystems being in balance. This general aim is supported by four objectives:

- an open and accessible region;
- a leading growth region;
- a region with a good living environment;
- a resource-efficient region;

and a general spatial principle of providing urban development close to public transport. This means building and densifying in locations with good access to public transport, which creates proximity and provides a base for services and good public transport and therefore contributes to higher accessibility in everyday life.

RUFSS 2050 seeks to find **economic sustainability** through interventions leading towards improvement of employment, skill-building, developing knowledge-intensive sectors and professions, increasing the number of start-ups, increasing public and private investments in R&D, providing full access to high-speed fixed and mobile internet, improving airport accessibility as well as supporting green technologies in transport. In terms of economy-oriented spatial principles, RUFSS favours dense and interlinked regional cores that create a

polycentric region that can provide the right conditions for a sustainable and resource efficient expansion of housing, workplaces and higher education; and commercial and public services outside the central regional core. It seeks to improve urban-rural connexions through road network and developing strategic hubs. It also defines accessibility as a prerequisite for the Stockholm region to be able to serve its function as a capital region. The region's public and private research environments, higher education, head offices, national organisation headquarters, cultural scenes and cultural settings of national interest, the Government and Parliament need to be accessible to all residents in Sweden and international visitors (RUFSS 2050, p.12).

RUFSS 2050 seeks to find **social sustainability** through developing accessible housing, providing attractive living conditions, improving life expectancy of mid- and lower income groups, decreasing high-school drop-out ratio and improving social trust. In spatial principles that support social sustainability at the individual level, the choice of sustainable transport is facilitated and the society contributes to taking responsibility by steering towards a desirable development, for example, using the right kind of instrument. It is visible, that the social dimension of sustainability is perhaps least specific and is supposed to be covered by other two dimensions. However, even in terms of the pure quantity of document content this aspect is least elaborated on in the document (RUFSS 2050, p.12).

RUFSS 2050 seeks to find **ecological sustainability** through developing housing only in designated priority areas, limiting greenhouse gas emissions, limiting total energy consumption, limiting public motorised transport, prioritising pedestrians, bicycles and public transport, improving recycling and reducing household waste. The spatial principles that support ecologic sustainability are assuring resource-efficient systems for people and goods, which means that all transports need to become fossil free and energy efficient in the long term. It also stands for coordination and development of freight and public transport and priority for pedestrians, bicycles and public transport. Another important spatial principle regards green and blue environments which should be protected and closely linked to built areas and urban environments. The region's blue structure is a coherent network of the Baltic sea, the archipelago, lake Mälaren, groundwater and other water areas. They are important for regional attractiveness and have central functions for ecosystem services, climate adaptation, recreation and energy and food supplies (RUFSS 2050, p.12).

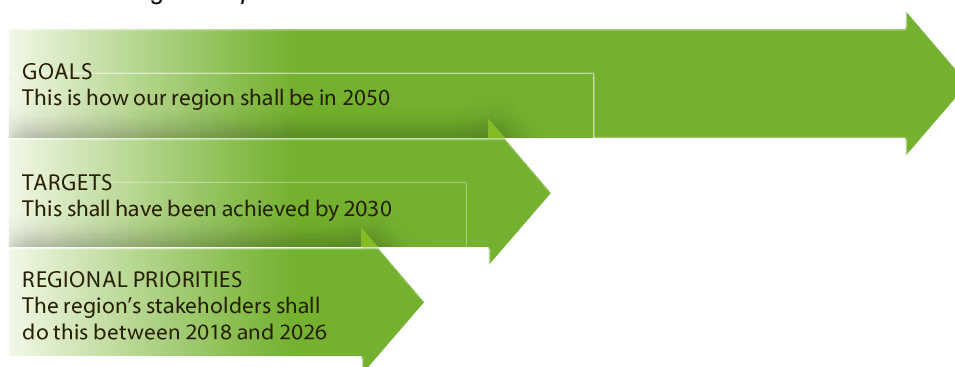
3.2 Temporal balance

The City Plan is based on a perspective of long-term sustainability with a time horizon of 2040. It forms the basis for the priorities in the city's annual budget and its associated investment strategy. The aim of having a link between the annual budget and the City Plan's expansion strategy is to achieve a balance between what is desirable and what is possible in terms of urban development. The budget and investment strategy control the coordination of the city's investing committees, which can bring about synergies in the areas and locations that are

highlighted in the City Plan as being of particular importance for investment. There are however only two tangible and well-defined targets with long-time and mid-term perspectives. The housing target aims at providing 140,000 new homes by 2030 - 40,000 homes by 2020 and 80,000 homes by 2025. Another target is becoming fossil fuel free by 2040 with an interim target of a maximum of 2.3 tonnes of CO₂ per capita by 2020.

RUFS 2050 is based on four long-term goals that show the direction towards 2050. The goals crystallise the vision and the target position of the region in 2050. In order to reach the long-term goals, measurable interim targets are to be achieved by 2030. Some issues require a special focus in the short-term perspective 2018–2026, and are identified as the regional priorities. The priorities concern issues where multiple stakeholders currently own different parts of significance to achieving a regional effect.

Figure 3.2: From goals to priorities



Source: RUFS 2050 (short version in English p.7).

Table 3.1: Temporal balance in Stockholm RUFS 2050 tangible goals, targets and regional priorities

Goals	Targets	Regional priorities
1. An accessible region with a good living environment	<ol style="list-style-type: none"> At least 22,000 homes needs to be added annually. Public transport travel times between regional cores and to Arlanda Airport shall be competitive with travel times by car. The percentage of the county's residents who experience problems with traffic noise and poor air quality shall not increase. At least 95 per cent of new building shall be in the areas designated as regionally prioritised built-environment locations. 	<ul style="list-style-type: none"> Increasing the housing stock and creating attractive living environments. Steering development towards a transport- efficient society.
2. An open, equal and inclusive region	<ol style="list-style-type: none"> The differences in average life expectancy between various socio-economic groups and municipalities in the county shall decrease and average life expectancy shall increase for everyone. The employment rate for the population aged between 20 and 64 needs to be well over 80 per cent and the gap between those born in Sweden and those born abroad will decrease. The percentage of pupils with an upper-secondary school qualification within three years shall exceed 80 per cent and differences 	<ul style="list-style-type: none"> Capitalising on skills and facilitating matching these to labour market requirements. Strengthening the conditions for all children and youths to progress into higher education and work.

	<p>between pupils in the county's various municipalities shall decrease.</p> <p>4. The percentage who trust their neighbours shall increase and the effect of insecurity on quality of life and the residents' exposure to violent crime shall decrease.</p>	
3. A leading growth and knowledge region	<p>1. The percentage of employees with higher education, or employed in knowledge-intensive professions, shall be at least 55 per cent, for both women and men.</p> <p>2. The number of start-ups shall increase to 18 per 1,000 inhabitant.</p> <p>3. Private and public investment in research and development (R & D) shall amount to at least 4.5 per cent of the gross regional product.</p> <p>4. All residents and business and public sector operators shall have access to high-speed, fixed and mobile internet connections.</p>	<ul style="list-style-type: none"> • Strengthening strategic research corridors and innovation environments. • Strengthening international position via more start-ups, visits and increased international trade.
4. A resource-efficient and resilient region with no climate-affecting emissions	<p>1. Direct emissions of greenhouse gases shall be less than 1.5 tonnes per resident.</p> <p>2. Total energy consumption in the Stockholm region shall be no more than 40 TWh.</p> <p>3. The percentage of renewable energy shall be at least 75 per cent.</p> <p>4. Greenhouse gas emissions from a consumer perspective should be halved.</p> <p>5. Public transport's percentage of motorised travel shall increase by 5 percentage points compared with today.</p> <p>6. At least 70 per cent of all journeys within the county shall be made on foot or using a bicycle or public transport.</p> <p>7. Bicycle travel's percentage of all travel in the county shall be 20 per cent according to the objective in the regional bicycle plan.</p> <p>8. Household waste shall have fallen to no more than 360 kilos per person and at least 65 per cent of this (food waste included therein) shall be recycled.</p>	<ul style="list-style-type: none"> • Increasing electric powered passenger and freight transports. • Developing attractive and climate and resource-efficient regional urban cores.

Source: RUF5 2050 (short version in English p.8-9).

4 Impact assessment

4.1 Pre-intervention

4.1.1 Identification of the problem

It seemed that regardless of the actor, general sustainability principles related to urban containment policy have high legitimisation among most actors in decision-making processes. Therefore, general land-use goals and planning principles have high support and remain constant in the long run. Both regional and local planning documents are updated every planning period without major changes on strategic level. It is the operational level and specific goals that get adjusted, so that they provide adequate tools to address issues that are current to certain moment or situation.

Table 4.1: The main focal issues according to interviewed stakeholders

Focal issue	# instances
Provision of housing through densification	6
Urban containment policy (polycentric development)	4
Social sustainability	3
Environmental protection	2
Economic attractiveness	2

However, the main challenge that, according to most actors, was not being solved by existing measures and has gradually arrived at a critical point, was the housing crisis in Stockholm. Housing crisis is viewed as the main issue and supposedly solved by provision of housing through densification, while making sure the city and region remain attractive for business and knowledge-workers, sustain their polycentric (star fish-like) structure and preserve the green and blue ecosystems.

A common problem, or rather dilemma, was spatial in nature, as it included selecting development areas that would be already accessible, attractive for prospective inhabitants and yet profitable for private developers. Another dilemma was whether it should be allowed to build on greenfields.

The issue is actually central to the thematic scope of sustainability, because the sustainability policy is partially a factor behind the problem. Spatial planning in Stockholm city and region is and for decades has been based on the sustainability model and explicitly refers to the three dimensions (environmental, economic and social). The central issue is an imbalance between three main aspects of sustainability caused by internal inefficiencies and external pressures like globalisation and dynamic metropolisation of Stockholm. Representatives of the public sector are more likely to look for external explanations related to globalisation, international markets and national policies or institutional inefficiencies that result from the national legislation that does not reflect the situation in metropolitan areas and does not provide adequate and flexible housing policy instruments for big cities. Representatives of local

associations and NGOs are more likely to look for political explanations related to the deconstruction of the welfare state, neoliberalisation of local and regional governance, growing class and ethnic segregation in Sweden.

Many actors agree that the social dimension of sustainability is the most compromised, and to certain extent, is a victim of success of the sustainability model implemented in the Stockholm region for the last two or three decades. Namely, strict, tangible and progressive environmental measures as well as attractiveness and economic policies have contributed to great economic and urban attractiveness, dynamic growth and metropolisation, which in turn put pressures on social sustainability that has not been institutionally efficient enough to mitigate growth externalities. Some of the factors behind this situation include housing development stagnation since the 1990s, protective rental law strictly regulating the rental market and preventing 'new' tenants from getting similar housing opportunities as the 'old' ones and unfavourable development of average wage to average real-estate prices.

4.1.2 Inception of goals/action

There was a good alignment between the perceived economic and environmental issues and actions developed to address it, however in the case of social equity most of the stakeholders thought that the actions planned to address the housing crisis were not sufficient. On the other hand, there was an understanding that this problem goes beyond municipal and regional policy-making capacity.

In terms of timeframe, the core of sustainability policies are a continuation of previous strategies, which was perceived as a general strength of urban containment policy. The very first step in revising the RUFSS to formulate RUFSS 2050 was a broad stakeholder dialogue on the validity of the previous document (RUFSS 2010), its accuracy and usefulness and the potential for improvement. What is new in the document is the refined content. 26 municipalities and other groups of stakeholders stressed not to start anything new from scratch, but rather continue the polycentric model of regional spatial development. The main spatial aim is the same, and it is the long-term aim and a whole broadly agreed core and baseline of the plan, that has been agreed in a broad consensus manner and as a general idea still remains valid in the opinion of all stakeholders.

Despite being the capital region, Stockholm County is made up of 26 municipalities and is actually the third largest rural region in Sweden. This fact has not been acknowledged enough in former planning. Therefore, there was a request from the municipal-level stakeholders, mainly 13 municipalities that are either rural or located in the Stockholm archipelago, to now include rural dimension into the regional plan. As a result, the new plan aims at designating one 'best development area' in every municipality according to agreed criteria as well as proposes an introduction of rural nodes (a new spatial entity).

4.1.3 Pre-intervention conclusions

The ongoing internal evaluation and broad consultation of the plan has provided very good feedback for the new planning period of 8 years. Broad dialogue and evaluation of the plan allowed planners to keep aims that were still valid (polycentric spatial development model) and add new ones that were in demand (adding rural dimension to the economic and growth aims of the plan as well as determining rural development areas according to the agreed sustainability criteria). Anchoring the policy-making process in the multi-level political structure contributed to the strategic alignment of goals across Stockholm county municipalities. A clear leader of regional planning process was the councillor, who as a person and institution aimed at improving the political engagement in the planning process.

Many local policymakers asked for more tangible goals and tasks that they could focus on in the short-term perspective, and were directly linked with key development and land-use indicators. They provide guidelines, that the focus is on the strategic things, feedback on how effective is the implementation, where are the weaknesses of the implementation and what needs to be revised. It also makes it easier to have confidence that they are focusing on the right target.

4.2 Implementation

4.2.1 Technical capability

All stakeholders seemed to agree on the fact that the technical capability of spatial planning was one of its strong foundations both in terms of long-lasting experience and great planning tradition in Sweden and in Stockholm area. A definite strength mentioned by stakeholders was excellent specialists within the civil servant community and a vital community of collaborating external experts. The urban containment policy in Stockholm region and city is therefore very well grounded in terms of technical capability, therefore many solutions can definitely be identified as best practice and transferred to other European contexts.

The availability of expertise is even regarded by some stakeholders to be one of the best in the world. For instance, one of the best Swedish demographers is working in the regional planning department. Each critical issue has its own task group comprising of experts and civil servants representing not only regional authorities, but national institutions (like road management) and local specialists. It has always been a clear priority despite the fact that it is very expensive. Allocation of relatively high resources on sophisticated human and analytical capacity improves the quality of evidence-based planning and decision making, which contributes to credibility. Credibility on the other hand is crucial, as it allows to define region's development scenarios with very high accuracy.

One of especially interesting planning tools used in regional and local land-use planning is the Integrated Planning Model (IPM), which is a spatial model, based on an elaborate database and quantitative modelling. Most of issues are derived from, analysed in, or finally examined by

this planning model and are based on GIS analysis. Basic models are related to traffic, climate or demographic analysis. Structural analysis allows planners to link all these basic models to observe their interdependencies and thereby build different scenarios and variants of situations. This provides evidence on more complex politically sensitive issues such as potential densification and business areas. Such thorough data is connected to actual municipal plans and analysed in terms of existing and possible challenges. It's a combination of, what one of the interviewees described as, 'hardware analysis' which, when combined with the 'soft' people factor, enables these sophisticated tools do create knowledge that is shared, used and discussed.

For example, in case of traffic flows analysis and scenarios of accessibility the regional planning models and data are shared with the regional offices of the national roads administration. Then the ideal picture is developed by in-house regional planner. It is further elaborated with municipal authorities and other stakeholders. Within the planning authorities in the City of Stockholm, there is a general planning office and teams of specialised sectoral planners, as well as planning teams in each district. The starting point in municipal planning is reviewing and evaluation of the previous planning documents with different groups of stakeholders, and then preparing necessary analysis, monitoring studies, modelling and impact assessments, which are done in close cooperation with the regional planning authority.

In terms of political interaction between various types of stakeholders, analysis and modelling is in fact an interface for adjusting and planning – first for identifying challenges, secondly for finding solutions and problem solving, identifying baseline scenarios and discussing possible solutions and their impacts. Modelling and drafting is seen, especially by the public servants and experts, as a starting point on one side. The political dialogue, however, is seen as the other point of departure. Technical capacity and expertise is therefore designed to be the necessary interface for interaction for those two perspectives to meet somewhere halfway. The political dialogue is there to adjust the evidence-based models.

However, some stakeholders claim that this analytical excellence is not that cutting edge in all fields. Technical capabilities are limited to the sectors - economic goals can be achieved within the private sector rationale, environmental - within the public sector rationale; however, since the social rationale has been privatised and transferred to market solutions it goes beyond technical capacity to provide equal access to social services and amenities. Housing is the most visible example.

4.2.2 Data and information

Data and information is directly linked to the sophisticated technical planning capacity in Stockholm. Therefore, similarly to positive opinions on the former, most stakeholders praised the comprehensive and thorough databases and information availability for planning. It is worth mentioning that Swedish statistical confidentiality legislation allows public institutions and

researchers access to confidential microdata under certain rules. Therefore, data on households, enterprises and individuals used in territorial analysis are very often actual data, not probable numbers estimated by the statistical office. There are very detailed factual and historical databases on the whole Stockholm area. They serve as base for developing local, regional and macro-regional models that are conceptualised together with municipalities and macro-regional organisations. Heavy data analysis is used in public and expert consultation at municipal level and/or for each particular sector (traffic, accessibility, public health). Therefore comprehensive data serves the process of troubleshooting and addressing detailed questions, that are answered in the context of different scenarios.

The quality of the data builds general trust and faith in the accuracy of the regional and local analysis. Regional planning authorities are very confident about region and city's biggest problems and assets. Moreover, they possess the necessary know-how and data in terms of modelling them dynamically and as a network. Many databases are already updated in real-time on most indicators (like housing). Finally, the level of ex-ante, on-going and ex-post evaluation is also very sophisticated.

Data and information affected the outputs in a way that they provide the substantial basis for credibility of elaborated scenarios and further decision-making process. Analysis is the baseline for planning that is performed for different scales using macroeconomic and mathematic modelling. Cross-scale analysis is made especially in terms of macro-regional issues such as: labour market, transport infrastructure, housing market. Data and analysis are also important means of communication and creating common understanding of spatial dynamics of commuting, demographics, migrations and housing. It is an important means of creating strategic vision among public planners and policymakers, as one of the interviewees said: a sort of public sector storytelling culture that creates necessary synergies in planning process.

All of the above arguments show that indeed in terms of data management and quality the Stockholm case is a best practice example. The innovation behind the data is that it's comprehensive (real, not estimated, microdata) and available (real-time, shared by multiple stakeholders, public). Databases are shared by many analytical units, institutions and researchers, various experts working with various concepts, interdependencies and scenarios. A lot of resources are digitalised which improves modelling. Modelling includes also regional, national and global dimensions. The range of forecasting is very detailed and available of public information. Data and analysis in Stockholm planning is probably the most sophisticated in the world.

However even in such a sophisticated and comprehensive system there are certain shortcomings. An example often mentioned by the interviewees considered the housing market and its complexity. Despite the great availability of official data on housing distribution and demand (rental vs. ownership, public vs. Private, tenure mix in terms of economic status and ethnicity) the picture of the housing situation is not full. There is missing data on the real-estate black market (short-term subletting, which is against the law) and grey market (the rents in

official contracts are very often understated). Very often real-estate and housing models do not reflect the rationale of the private sector developers and the dynamic situation on the global building market with high growth of investment costs (workforce, materials and subcontractors) as well as dropping profit margins in comparison to other more liberal markets in Europe.

The transferability of the Stockholm data and information system model is limited due to its costliness and specific legal procedures allowing provision of real, spatial data and microdata even these with high confidentiality. What could be transferable are the data-sharing solutions and close cooperation with academic and consulting institutions as well as cross-analysis and modelling practices that build credibility of evidence-based policy drafting.

4.2.3 Participation

Participation process is one of the strongest sides of planning in Sweden and Stockholm County, which has great traditions of participatory planning. It included over 100 types of stakeholders. The smallest participation core are the county's 26 municipalities, but the broadest circle included 550 stakeholders representing different sectors and interest groups. Participation on regional and local level starts at evaluation of previous planning period or mid-term evaluation, even before any draft planning is done. Apart from broad consultation there are task groups that include representatives of public sector institutions as well as business associations, companies and tenant organisations. Each strategic matter has best specialists available and key stakeholders.

Consultations are based on targeted workshops, walks, showcasing mockups, providing interactive and educational consultation methods tailor made for different groups of stakeholders. The communication of the planning process and real engagement of the broader public is one of top priorities in planning culture.

Participation in Stockholm is a very complicated process that needs many different types of activities. For example, preparation of RUFSS 2050 started in 2013 and took 5 years until it was officially admitted as regional plan in 2018. There were various forms of participation in this process that included:

- regular meetings with the core group of 26 municipalities and regional planning administration;
- parallel to that was an ongoing political dialogue that had a form of individual negotiation and consultation between the commissioner for regional planning and political representatives of each local municipality (and Stockholm city would only be one of the 26 local stakeholders);
- another regular meeting group would consist of planning specialists from the region and municipalities as well as experts (4 times a year);
- there would be more detailed group meetings on specific territorial solutions concerning neighbouring municipalities, on the issues that demanded agreements and common approaches;

- another form were thematic workshops and focus groups – for example on rural issues or rural nodes;
- there were also roundtable discussions with private sector, academia, when better understanding of a particular problem or its aspects was needed;
- there were roundtable meetings focused on problem solving of particular thematic or spatial issues – for example new issues to be addressed by the plan, like power efficiency, digitalisation, healthcare planning in terms of spatial and governance issues; the aim of these types of roundtables was to understand how a particular problem could be solved in order to fit into a more general spatial strategy.

Stakeholders perceived the participation as a process that was focussed on how to get the ideal implementation model and how to divide different responsibilities and targets through various political entities and stakeholders. The general outcomes of the participation were perceived as successful as they not only led to tangible targets and their indicators, but also reflected realistic capacities of each municipality in terms of reaching these targets.

The advantages of the participation included its broad, multi-scale and interdisciplinary range and a variety of participation forms and depths. Participatory planning allowed accurate operationalisation of the plan into tangible and realistic goals, targets and tasks. It is worth mentioning that participation in Stockholm is implemented in line with Swedish consensus culture and that civil servants and planners are seen as a competent and neutral interface for political dialogue.

The shortcomings of the participation were related to its thoroughness. Firstly, finding consensus is prone to losing the edge of a particular policy. That was partly avoided by the analytical excellence and institutional power of civil servants and units responsible for preparation of the plan, which made it immune for short term political interest and election-related ambiguity.

On the other hand, some local stakeholders felt critical about this technocracy and underlined that although there were many ways in which the local community was engaged in co-planning of a new area, the main decision on redevelopment or flagship investment was not consulted. Secondly, such thorough participation took a long time and it caused a miss-match in some fields, like housing, as the situation progressed quicker during the consultation processes and participatory planning didn't provide much solutions to that particular problem.

Some more critical stakeholders, mainly representing the local level, seen participation as superficial and selective, focusing on minor improvements, effectiveness and micromanagement, abstracting from major decisions while giving them false justification. For them, participation was based on pragmatic goals related to economic attractiveness and urban image, rather than shared welfare state values.

Some specific stakeholders in participation included the core group of 26 municipalities (since the municipalities are obliged to connect planning to regional level) and broad scope including over 550 regional actors. Participation process was implemented in a circular manner – the core was included in all types of actions and more outer actors were selectively included in

tasks that only they were interested in. These were: NGOs, Stockholm Business Alliance, Stockholm Business Region, private sector, academia, all sorts of sectoral actors, with thematic focus on environment, green infrastructure, lobby organisations.

From the regional perspective the core group was the 26 municipalities. Reasons for that are the fact that the local authority formally has the planning monopoly and a formal requirement that regional and local plans are coherent and similar in terms of general aims and do not have any contradictory goals or interventions.

Another circle of specific stakeholders includes the macroregional scale in the form of the Eastern-Middle Sweden Macroregion - östra Mellansverige (ÖMS). It includes 7 regions that work together in the macro-regional development strategy, especially on issues such as: demography, labour market, transport infrastructure and housing market analysis. Analysis in the larger territorial context is an important baseline for the Stockholm region, other regions, but also individual municipalities. This baseline provides common and mutual understanding on how particular development aspects such as commuting, transport and infrastructure, labour market or housing work.

It is possible to conclude that environmental and economic sustainability of the urban containment policy definitely benefitted from the top-driven participation. Critical voices suggest, that allowing more bottom-up approaches to participation including the NGOs and private sector, could provide better policy solutions in terms of social sustainability of the urban containment policy in Stockholm.

4.2.4 Strategic vision

The vision for the urban containment policy was very clear, as it was not new, contrary it was a continuation of a consequent long-term vision based on the sustainable development concept. New urban and regional plans were adjusting this long-term perspective to current challenges. Sustainability was thereby fundamentally important for the strategic vision, explicitly addressed and tightly linked to specific geography of the Stockholm region.

Specifically, strategic vision included continuation of polycentric urban development with protection of green and blue areas as well as linking infrastructural development with housing and commercial developments. The long-term aim of the strategy is making Stockholm region most attractive region for business and highly skilled workforce in the whole Baltic area. A specific vision for the development of the city of Stockholm was built around the idea of providing solutions to housing situation while not compromising on high ecologic standards and economic attractiveness. Four goals included: growing city, cohesive city, good public spaces, climate smart and resilient city. Regional and city of Stockholm visions are thereby complementary, with the added rural dimension at the regional scale.

The process of defining the vision had two points of departure – meritocratic evidence-based scenarios derived by regional development model and political vision derived from interests and aims of particular municipalities and politicians.

Even though most stakeholders agree that the strategic vision has rather high social and political legitimisation, their opinions differed in terms of its actual integrity. Majority of public sector stakeholders claim it was developed in a transparent evidence-based process, guided by evaluation, with significant inclusion of bottom-up ideas and therefore it adequate to the potential and existing functions of the area. Local-level stakeholders view the vision as ambitious, but politically ambiguous, as some claim that it undermines core Swedish values like equity, social-democratic ethos and lagom (not too much not too little rule). Other stakeholders, claim that the accepted strategic vision is compromised in practice, procedures and through lack of equal access to the possibilities it offers. Strategic vision of facilitating intentional social mix and therefore counteracting social spatial segregation was often undermined by pragmatic issues, like land availability.

4.2.5 Institutional coordination

Institutional coordination of urban containment policy in Stockholm was characterised as very good among the public sector and ambiguous on the line between the public and private sectors. Preparation of the regional plan took 5 years. It started in 2013 with a consultation phase and 550 stakeholders were asked to pinpoint most important issues and discuss them in a round table. This was repeated at the very final step. The core group of planners representing 26 municipalities held regular quarterly meetings during which detailed issues were discussed. For every topic there was a designated team that was responsible for coordination of implementation of the strategy among different institutions and actors, however some were not completely involved, like NGOs. On municipal level in the city of Stockholm the coordination was also very complex and started with draft project, which was specified for each of 10 focus (development) areas. Following stages included working in thematic and sectoral task groups (building, traffic, health, etc.). It was followed by a first round of public revisions, than a round of political revisions, than a second public revision and further improvements to the plan.

Many stakeholders find institutional coordination among the public administration, especially territorial planning authorities, very good, especially in the way the expertise and political issues are merged and implemented. A best practice in that matter could be the 'best development area' – a regional planning innovation that was a result of this very process. In order to broaden the political acceptance and political engagement in programming and policymaking as well as the implementation, regional planning authorities together with core group of stakeholders added a rural dimension to the strategy. The standard principle of densification near the railways and subway lines did not apply to most of the rural stakeholders behind the plan. Therefore, a more universal and place-based approach was necessary. It resulted in

designating at least one 'best development area' in every municipality which, according to agreed planning principles would become a development area for new housing. It was as much a planning tool as engagement-enhancing solution for improvement of political mobilisation and implementation of the plan. Another similar new solution were rural nodes – a new spatial structure.

Stakeholders representing the city of Stockholm governance also praised the level of controlling the contracted developers and assurance that all the ecologic and design requirements are met. On the other hand, local level stakeholders were more critical about coordinating the implementation, as they see it crashing with commercial sector and profit-oriented rationale. An example of scandal around the New Karolinska Hospital was given to illustrate that shortcoming.

On the other hand, there were also some coordination failures at regional level. Making designated administration (i.e. particular municipalities) responsible for monitoring and coordinating achievement of particular goals failed due to discussions on how to implement regional reform in practice.

Institutional coordination can be called for being responsible for success in terms of planning delivery as well as development and implementation of environmental and partially economic sustainability. In case of social sustainability, it is successful in some cases, and failure in another. Surprisingly some stakeholders mentioned, that contrary to the intuition Swedish system has a lot of neoliberal solutions in terms of implementation and institutional coordination. Economic efficiency is not that important in case of environmental protection, however it is in case of economic and social sustainability. One side of planning is the public-sector excellence, but according to Swedish law, particular investment and its management needs to be delivered by private companies and it needs to be profitable and economically efficient. If it is not, than the task simply doesn't get delivered and there is a market failure. As a consequence, some projects prove to be very successful and are great examples of economic sustainability in the field of 'public goods', but others are not. Another example illustrating this pattern is gentrification induced by urban planning and private developer coordination. Some of the focus areas in Stockholm have organically undergone functional transformation making them 'hip' and attractive for targeted demographic groups. When such a redevelopment area gets managed by a licensed company rather than public institution, it is not interested in keeping up existing clubs and restaurants and creative freelancers, losing the 'pioneer gentrifiers' in the process. There was also an opinion that the city planning authorities are successfully collaborating with municipal developers, however they are not making them frontrunners in terms of tenure mix.

Lessons to be learned from institutional coordination in Stockholm are that institutional coordination within the public sector is worth mentioning as a good practice. Although there was some opposition to more transparent and decentralised division of responsibilities, the conceptual cooperation and implementation are rather smooth and based on mutual

understanding and trust. Another lesson is that the perception of attractiveness and planning is different among different stakeholders, centrality and peripherality play an important role.

4.2.6 Institutional leadership

The stakeholder that assumed the role of the institutional leader in the process of regional planning was the regional planning authority in the collective dimension with particular role of the regional planning counsellor on individual level. In general, the implementation is mainly driven by public servants and planners unfortunately lacking enough political engagement. On city level, there is a clear leadership of the city planning department, especially as it owns about 75% of the land and by law has planning monopoly. It is worth mentioning that the leadership model within the tasks the public sector is responsible for seems very much like the multi-level and multi-stakeholder-oriented governance, whereas particular redevelopment projects implemented under private sector leadership seem to be dominated by the managerial style of leadership. To some stakeholders the role of institutional leadership is quite ambiguous and contributes to failures in achieving complex social targets, like housing, while redirecting most efforts on publicity-friendly, business-oriented and experimental projects, like flagship projects, energetically passive developments or glassfiber broadband. One of the stakeholders expressed their criticism by claiming that failure to assure basic needs, like stable housing for most vulnerable groups and more often also middle-class compromises trust to both the politicians and civil servants.

4.2.7 Political will

The role that political parties and figures played in the configuring the shape of the intervention was perceived as not enough of engagement. Spatial planning on regional level in Sweden and therefore also in the Stockholm region is heavily dependent and influenced by the civil servant perspective. The political involvement in the planning process was in general not the highest on the decision-making agenda. Therefore, there were intentional efforts by the civil servants to elevate political engagement in the decision making and drafting the policy. The higher involvement and inclusion of political opinion and political aims as the starting point of the planning process was the key to improve political acceptance and engagement in the planning process. The regional planning commissioner and regional authorities intentionally had more dialogue with local politicians as well as national level politicians to get a unity along main strategic aims and principles. There was also one idea related to political will and governance that failed. The ambition was that each regional aim would have one municipal, political stakeholder responsible for coordination and implementation, that would push other entities to meet their goals, and if necessary, provide solutions if any unexpected situations that would appear. This unfortunately failed. The regional planning authorities are not responsible for implementation of the strategy. This was not achieved because of the fact that a lot of energy was targeted towards election, political issues, etc.

The follow-ups and evaluation studies on the implementation of the RUFs show that only half of the municipalities follow regional strategy with clear, tight connection of local plans to the regional strategy. The city of Stockholm is one of the municipalities that interlinks its municipal plan with the regional one to a large extent.

Political will is to a certain extent limited by the evidence-based analysis, as it is not the forecasts that come upon according to the models, but micro-rationalities and local level decisions are a subject of political debate. So the political process takes place within the evidence-based frameworks. The political dialogue is on how to implement whatever comes out of modelling and analysis (not the other way round) and how to actually make it work so that the people do implement and contribute to agreed goals through their actions and rationalities.

The focus of the political action was related to the national competitiveness and attractiveness policy agenda including topics such as young people's health situation, including mental health, interconnections between education system, labour market entry and housing market. Public health issue is very high on national, regional and local agenda in Stockholm. On the other hand the basis for any political agenda in Sweden and especially in Stockholm is very much related to environmental sustainability, so for many political parties and institutions it needs to be the point of departure in their political agenda, as this is what the public opinion is very much focused on. As a result, the social agenda is the one that is very often neglected.

The political constraints that endangered the goals related to the housing crisis come from the publicity dynamics of social housing projects. The so-called flagship investment projects, like the Royal Sea Port, are under high political pressure to succeed in time and not compromise on any principles and standards. Even though there is strong political will and determination on the city planning department side, it is the private sector that by law is supposed to deliver the results and actually implements developments and manages redeveloped areas. The profitability principle does not always meet with urban planning principles, and so some tasks are not subject of political will that is implementable by private companies. It is very often the end price and financial availability of the developed housing or rental vs. ownership ratio that goes under the negotiation with the developer that might lose profit margin because of the rising costs.

The motivations of political stakeholders were related to public good / lobbying / etc. In general the political will in terms of housing is very much dependent on land ownership which differs between 5% to almost 75% in Stockholm.

The power-related issues were related to lack of advocacy and representation of most vulnerable groups. There is not enough political will to mainstream mixed-tenure housing on a larger scale, that is why it is only strictly followed in the flagship projects. Some local stakeholders suggested that the political will and legitimacy works in case of the environment, the commercial will works in case of economic goals, but there is no actual political will in favour of advocating for immigrants and lower income population. One of the paradoxes mentioned

was for example the case of the tenant organisations, which are partners in participatory planning do not really represent the interests of people who are in need of housing. They represent interests of existing tenants, which are opposed to interests of the 'new' tenants. While one groups is in favour of strict protection of tenants and keeping the rents under control, the other is in favour of more flexible access to housing, more transparent queuing and procedures. The efforts is to improve the housing supply in the Stockholm region by careful planning do not solve this issue, as new housing is not affordable, is not targeted at people who really need it and therefore these power issues generate very clear winners and losers, which unfortunately is related to class, capital and ethnicity.

Political strategies to mitigate opposition would intentionally revolve around political correctness and little actual support towards suppressed social groups. The opposition is weak and does not have any alternative except populist critique.

4.2.8 Implementation conclusions

In general, the implementation system of the urban containment policy has more strengths than weaknesses. The strongest aspects of it are related to the technical capabilities, data and information as well as smartness and legitimization of the strategic vision. All of these three strengths provide a variety of innovative, progressive and cutting-edge land-use solutions as well as planning toolkits that are valuable inputs of the Swedish school of planning as well as specific place-based solutions developed by urban planners and other stakeholders specifically for the Stockholm city and region.

Table 4.2: Instance summary

	B3.1 Technic al capabili ty	B3.2 Data and informati on	B3.3 Participati on	B3.4 Strateg ic vision	B3.5 Institution al coordinati on	B3.6 Institution al leadership	B3.7 Politic al will
Count Strengt h	6	7	4	6	4	5	3
Count Weakne ss	1	0	3	1	3	1	4

As it is difficult to precisely pinpoint any definite weaknesses there were some ambiguous opinions regarding the institutional coordination, participation and political will. Some of these aspects indeed were found to be strengths, like the participatory approach to planning at every stage, impressive public consultation procedures, proficiency and pragmatic organisation of institutional cooperation. However, some presented themselves as definite weaknesses, like the role of private sector in implementation of policies, processes and projects (coordinating implementation, delivering the results, following a profit-oriented rationale under public projects) as well as certain market failures.

There are three main lessons to be learned from the Swedish Case study, namely:

1. Technical excellence including using GIS in modelling and broad participation at many steps of policy making and implementation are success factors for linking evidence-based planning with building political legitimacy and engagement.
2. Implementation - a challenge how to integrate profit-oriented attitudes of private developers and public good rationale represented by sustainability principles in land-use and planning is a challenge that needs transparent rules and procedures.
3. Even most elaborated and progressive sustainability policies do not provide satisfactory results and cohesion if they fail at providing basic needs, like housing.

4.3 Sustainability assessment

4.3.1 Planning and development culture

In terms of planning and development culture there were further improvements to an already well-functioning model developed in Stockholm. The regional reform gave more responsibility and institutional leadership and coordination to the regional planning authority, which appeared to be a clear leader in policy preparation as well as political process facilitation. On the municipal level the organisation of planning departments was changed by including district-level stakeholders at earlier stages of planning. There was an ambiguity that occurred throughout the participation process, as many new operational concerns were addressed, but still the key decisions were made outside the local communities, which was justified with a lot of reliable data. Also, a more critical observation was made, that even though planning gets more and more sophisticated, more people get excluded from its benefits.

4.3.2 Economy

There were many positive outcomes of the urban containment policy in Stockholm improving the economic sustainability of the region and city. For all stakeholders it is clear that this policy is positively contributing to the economic attractiveness of the city and region and therefore following the prime aim of the strategy. Another positive aspect is related to continuity and long-term perspective of the intervention that is being implemented and is working in favour of the main goal. These good practices have big potential in terms of being transferred to another excellence-oriented metropolitan region.

A lot of the economic improvements rely on investments in infrastructure, like public transport system, innovative accessibility-enhancing solutions, social infrastructure, linking redevelopment to infrastructure and integrated planning. This contributes to improved accessibility and minimises spatial barriers for people and businesses. Positive impacts on economic attractiveness are also directly linked to positive effects of the environmental planning and protection. Stakeholders agree that landscape protection, energy efficiency, air and water

quality as well as biodiversity, even within the city boundaries, is also improving the economic attractiveness of Stockholm. Most of the stakeholders also observe the results of Stockholm's improving attractiveness, which manifests itself by growing population, changing economic structure in favour of innovation and high value-added services. On the local scale neighbourhood organisations can see that new developments improving public spaces, bikeways and green areas as well as the overall access to services and public transport.

The negative economic effects are related to the housing crisis that is seen both as a cause and result of lack of more radical housing policy at regional and national level. Although housing is seen as a social issue, housing crisis also has its economic side, namely scarcity of private owned housing and stiff rental market, which is limiting city's attractiveness for multinational companies and highly skilled international mobile workforce. Growing demand is pushing real estate prices to be very high, to the point that it impacts general cost of living in the metropolitan area and negatively affects the quality of life. Some alarming impacts include growing economic and structural polarisation in business sector, corporatisation of the local economy, pushing service, manual workers as well as middle class away from the city, economic and ethnic segregation causing social tensions.

4.3.3 Ecology

Stockholm is a recognised leader in urban and metropolitan environmental sustainability. All stakeholders strongly claim that this issue is top priority for people, politicians and civil servants. This is also quite obviously the strongest dimension of the urban containment policy in the case study area, and all outcomes were seen as positive and best practice worthy.

There is a consensus about keeping nature protected as a foundation of social and economic welfare. Strategy for green infrastructure effectively protects valuable nature areas and provides eco-corridors improving resilience and biodiversity. Social and economic sustainability are understood as means of sustaining nature, not the other way around. Environmental protection, energy efficiency, public transport systems and green economy are given clear priority in public investments and initiatives. Public sector gives the environmental protection the necessary large-scale perspective which assures green corridors and contributes to biodiversity. In urban scale, effective public transport and accessibility, many solutions limiting car-dependence, improving walkability of the city contribute to its attractiveness for green entrepreneurs and together with the population of early adopters of green innovation, builds Stockholm's comparative advantage in that sector. In local scale, new developments are being integrated in the overall urban green space system through functional green planning and green corridors. Each focus (development) area in Stockholm is planned around green spaces making environmental impact assessment part of the design and also important determinant of the planning outcome.

Some of the stakeholders feel however that this high social legitimisation of environmental protection is being exploited in political debates and used as an argument in power struggles. While none of the stakeholders questioned the integrity of ecological sustainability, some noticed more instrumental aspects of the elaborate ecology-oriented solutions such as urban marketing and branding strategy targeted at high-end investors and workforce. Some also mentioned side effects resulting from environmental protection, which limits the areas that are designated for housing and infrastructural developments and makes the housing situation potentially worse.

4.3.4 Equity

Social equity is definitely the weakest aspect of the urban containment policy in Stockholm. The extent of the housing crisis is foreshadowing the positive outcomes of the policy that otherwise could be considered successful. There is a visible effort of improving social infrastructure, especially the public healthcare system, and adjusting it to the needs of the contemporary metropolitan society. Moreover, investments in the infrastructure and e-services improved the accessibility to social services. Also, a lot of housing projects in and outside Stockholm are going according to the schedule.

Despite these efforts all stakeholders claim that the social equity in Stockholm is challenged not by the fact that the urban containment policy has negative impacts on the housing situation, but the fact that it has relatively limited capacity to address it. As a result, the situation gets worse overtime and for example civil servants feel quite helpless about it. The complexity of legal, economic and institutional factors behind the housing crisis in Stockholm is the reason why the plan has limited power to mitigate it. Some stakeholders claim that in this matter Stockholm was a victim of its own success. A growing number of inhabitants, attractive labour market, great amenities and quality of life all puts pressure on housing market (both rental and ownership). The number of new houses is still below the level of demand and there is a mismatch between the production of housing supply and demand: developers and municipalities are good in building high-quality expensive showcase houses, but fail to deliver affordable, mid-range quality housing. The provision of new housing is dropping because people cannot afford it.

This situation is leading towards more serious inequalities, contributing to growing segregation in terms of income, class and ethnicity, social frustration and rising tensions as well as growing pressure on local transport hubs. Social segregation is seen not as a result of planning, but rather a consequence of previous neo-liberal political decisions. On the other hand, local actors believe that regional and municipal planning authorities have higher impact on the situation than they claim and by using the regulatory tools, like assuring diverse tenure mix as an anti-segregation instrument and keeping the 50% rent – 50% sale ratio in new developments the situation could improve.

Civil servants admit that they are trying to mitigate the situation by exploring other options, namely looking into cooperative housing solutions from Denmark, Austria and Germany as well as lobbying the central government for tailor-made solutions for expanding metropolitan areas. There is also the Social Impact Assessment tool, which enables an analysis concerning social impact of particular intervention on people representing various demographics.

4.3.5 Balance

When it comes to lessons, the interviewed stakeholders were able to identify a lot of innovation that would either involve particular solutions or governance. Some innovations that are of universal character and have high transfer capacity include:

- comprehensive and credible analysis;
- all solutions in public services like energy, public transport, efficiency, air and water quality etc.
- for every issue and topic there was a task team that tried to organise best consultation
- design thinking in adapting cultural heritage and protected buildings to new functions in a way that protects the heritage and identity of the area. Example: adapting post-industrial 'no sidewalk' area into pedestrian-priority.
- comprehensive consultation and participatory planning on local level. Each focus area has communication team, that provides walks, workshops, collects ideas and critical opinions as well as gives information to all interested stakeholders. It is possible to book such tour online and it is available for everyone also in English.
- Focus area projects are a good way of giving attention to local communities, so that they feel that they are being listened and taken care of. This is a good participatory tool and legitimization.
- Showcasing world best sustainability solutions in district-level planning of a flagship project like the Royal Seaport as a good public education and marketing tool.
- Social Impact Assessment analysis

More Stockholm-specific innovation with limited transfer potential concerned governance solutions, like:

- linking bottom-up politically-driven planning goals with sophisticated integrated planning models;
- putting planning department in the role of the interface between planning models and political processes.

Apart from innovation, there were also several failures, the biggest of which was not addressing the housing crisis effective enough, even though that was one of operational goals of both of policy documents. A definite failure was also resulting from market failures on the axis of public-private relations in policy implementation and economic effectiveness of social projects. This led to planning bottlenecks, resignation from diversity measures in favour of project profitability and ambiguous management standards, which differed between the flagship projects and peripheral investments. Most critical interviewees would even claim that these shortcomings would result in deprivation of basic needs in favour of sophisticated solutions for advanced sectors and wealthy people.

Challenges that stakeholders mentioned were related to mitigating the symptoms and causes of the housing crisis. On one hand they include lobbying on national and EU level for legal, financial and institutional solutions that would provide tools for regional and local governance. On the other hand, challenges include dealing with half million people that are in a biased housing situation while trying to address growing spatial, ethnic and class segregation in the city. A more prominent challenge to be faced considers social cohesion and deconstruction of the welfare state, which undermines trust to the public sector and feeds social and ideological polarisation of the society. Another challenge for the future was formal and legal reclaiming land for brown-field redevelopment. Even though Stockholm city owns 75% of land it is still difficult.

Stakeholders were very consistent when defining winners and losers of the urban containment policy in Stockholm area. Evident winners included ethnic Swedish wealthy middle-aged people, upper-middleclass and upper class, innovation companies, specifically IT sector, large corporations, people who can afford to speculate on the real-estate market and also regional and municipal authorities. The obvious losers of the urban containment policy were immigrants, service and working-class, young adults, more frequently middle-class and small and medium companies. A solution to managing or avoiding negative dynamics between these two groups is a delicate political matter and often is a subject to political correctness, which does not provide openness for public debate. Moreover, solution of the problem awaits state-level regulatory and financial tools that are not available for single region or city.

On the other hand, difficult housing situation to a certain point gets compensated by otherwise high quality of life with cultural and natural amenities, efficient public transport, healthcare, accessibility and public spaces.

In general, the stakeholders find balance rather positive, with many reliable, intentional positive results and significant structural problems that need dedicated solutions.

4.3.6 Multi-stakeholder assessment conclusions

In general, the urban containment policy in Stockholm is perceived as a success in terms of environmental and economic sustainability and partially as a failure in terms of social equity, specifically due to the housing crisis. The synergies between various aspects of sustainability are clear. Environmental sustainability is seen as basis and priority fuelling economic and social assets of the region. Restrictive development planning is partially seen as one of the factors contributing to the housing shortage, however possible solutions are not seen in liberalisation of planning principles and traditions, but rather in national legislation and financial tools. More ambiguities are seen on the axis between economic and social sustainability, as growth and attractiveness are seen as a factor of social and spatial polarisation, which without efficient mitigation and redistribution tools leads to growing social tensions. Since the reasons behind

housing crisis in Stockholm region are rather specific, many other solutions can be successfully implemented outside the case study area.

4.4 Conclusions

While investigating the Stockholm case study I had an opportunity to talk to few key stakeholders responsible for policy-making. In fact, it was very difficult to arrange meetings with representatives of developers and practitioners not representing the planning departments. While conducting fieldwork I used the opportunity to visit redevelopment areas and flagship projects, utilised some of the participatory tools offered to the public and talked to the representatives of surrounding local communities.

The Stockholm case study is an example of urban containment policy that is directly taking sustainable development principles and literary implementing them as a core of land use strategy and practice at both regional and municipal levels. Therefore it provides a good insight into possible ways of policymaking as well as potential challenges that sustainable urban policy model might generate in practice. It is necessary to say, that Stockholm example showcases sustainability policy that has strong public legitimisation and has been implemented with few problems on institutional level. Nevertheless, even when executed correctly without much political controversy, this approach proves to have some shortcomings, especially in terms of social equity that are worth investigating and discussing.

In case of positive effects, many voices seem to align into a deeper, value-based narration of success and indeed observed results are impressive and supported by international recognition (OECD). Moreover, many of them are transferable as individual solutions and policy packages to other metropolitan areas that struggle with environmental and economic sustainability. These include both planning principles as well as multi-level governance and participatory approach to planning. Some innovation that are of universal character and have high transfer capacity include:

- comprehensive and credible analysis;
- all solutions in communal services like energy, public transport, efficiency, air and water quality etc.
- for every issue and topic there was a task team that tried to organise best consultation
- design thinking in adapting cultural heritage and protected buildings to new functions in a way that protects the heritage and identity of the area. Example: adapting post-industrial 'no sidewalk' area into pedestrian-priority.
- comprehensive consultation and participatory planning on local level. Each focus area has communication team, that provides walks, workshops, collects ideas and critical opinions as well as gives information to all interested stakeholders. It is possible to book such tour online and it is available for everyone also in English.
- Focus area projects are a good way of giving attention to local communities, so that they feel that they are being listened and taken care of. This is a good participatory tool and legitimization.

- Showcasing world best sustainability solutions in district-level planning of a flagship project like the Royal Seaport as a good public education and marketing tool.
- Social Impact Assessment analysis

More Stockholm-specific innovation with limited transfer potential concerned governance solutions, like:

- linking bottom-up politically-driven planning goals with sophisticated integrated planning models;
- putting planning department in the role of the interface between planning models and political processes.

All stakeholders, including the planners, were also in line with identifying the failure of the policy in the social area, namely the housing crisis. Despite many efforts all stakeholders claim that the social equity in Stockholm is challenged not by the fact that the urban containment policy has negative impacts on the housing situation, but the fact that it has relatively limited capacity to address it. In that case there is a potential that Stockholm region could benefit from implementation of some European social housing solutions. And indeed some organisational, financial and regulatory housing solutions from Central European Countries, like Germany, Austria and Switzerland are being considered for implementation in Sweden, in particular the Stockholm metropolitan area.

In terms of territorial governance urban containment policy in Stockholm definitely has some strong points, like technical capabilities, data and information as well as smartness and legitimization of the strategic vision. However, the transferability of the Stockholm data and information system model is limited due to its costliness and specific legal procedures allowing provision of real, spatial data and microdata even these with high confidentiality. What could be transferable are the data-sharing solutions and close cooperation with academic and consulting institutions as well as cross-analysis and modelling practices that build credibility of evidence-based policy drafting.

Institutional coordination, participation and political will present themselves as more ambiguous. When it comes to participation, environmental and economic sustainability of the urban containment policy definitely benefitted from the top-driven participation. Critical voices suggest, that allowing more bottom-up approaches to participation including the NGOs and private sector, could provide better policy solutions in terms of social sustainability of the urban containment policy in Stockholm.

Institutional coordination of urban containment policy in Stockholm was characterised as very good among the public sector and ambiguous on the line between the public and private sectors. Lessons to be learned from institutional coordination in Stockholm are that institutional coordination within the public sector is worth mentioning as a good practice. Although there was some opposition to more transparent and decentralised division of responsibilities, the conceptual cooperation and implementation are rather smooth and based on mutual

understanding and trust. Another lesson is that the perception of attractiveness and planning is different among different stakeholders, centrality and peripherality play an important role.

While participatory approach to planning at every stage, extensive public consultation procedures, proficiency and pragmatic organisation of institutional cooperation could be seen as strengths, the role of private sector in implementation of policies, processes and projects (coordinating implementation, delivering the results, following a profit-oriented rationale under public projects) as well as certain market failures are problematic for most stakeholders. The profitability principle does not always meet with urban planning principles, and so some tasks are not subject of political will that is implementable by private companies. The efforts to improve the housing supply in the Stockholm region by careful planning do not solve this issue, as new housing is not affordable, is not targeted at people who really need it and therefore these power issues generate very clear winners and losers, which unfortunately is related to class, capital and ethnicity.

In conclusion, environmental sustainability is the strongest dimension of the urban containment policy in the Stockholm case study area, as it is very high on the political agenda, it is a foundation of regional and municipal strategy, economic comparative advantage and crucial aspect of territorial identity and branding. Economic sustainability is also a strong dimension of the urban containment policy in Stockholm, as it's contributing to the economic attractiveness and economic growth of the city and region. However, privatisation of certain social services and housing crisis pose important challenges to this aspect of sustainability. Finally, social equity is definitely the weakest aspect of the urban containment policy in Stockholm. The extent of the housing crisis is foreshadowing the positive outcomes of the policy that otherwise could be considered successful.

4.5 Implications for sustainable urbanization and land use

This case study sought to illuminate the black box of development practices within a particular territory in Europe, focusing on a particular intervention which changed, or attempted to change, these practice to more sustainable ends. The primary source material was in-depth interviews with stakeholders directly involved in decision-making on spatial development, on crafting or applying the intervention, or both. Through their candid explanations, it was possible to provide a nuanced, and often critical, account of the origins, mechanisms and impacts of the intervention. As can be read above, the results show stakeholders in agreement on some issues and disagreeing on others.

The purpose of this final section is to give voice to the case study researchers by asking them to specifically reflect on the key questions posed to the project at its inception. The ideas and opinions expressed in this final section – printed in italics – are, therefore, solely those of the authors.

To what extent can the observed land-use changes in the case be considered sustainable?

Land-use changes that are directly resulting from urban containment policies in the Stockholm region are in line with most rigorous sustainability standards. Anthropogenic occupation (Figure 2.3) has not significantly intensified in the functional metropolitan area for the last three decades, as opposed to post-war period and therefore it can be considered sustainable. There are strict rules of linking public transport, infrastructure and new developments. New urban developments can only be based on former industrial, harbour or transport brownfields that are supposed to be renewed into mixed-use multi-functional neighbourhoods with good service accessibility, workplaces, housing and public space. Each municipality can only define limited number of development areas that need to meet strict sustainability criteria, that are defined and negotiated between municipalities and County Administrative Board.

To what extent did short-term thinking weigh up against concerns of long-term economic, ecological and social vitality?

Urban containment policy implemented in Stockholm is very much rooted in classical Swedish planning school, and spatial structure of starfish-like development of 'nodes' – the former ABC satellite towns is very characteristic. Both regional and local planning documents are updated every planning period without major changes on strategic level. It is the operational level and specific goals that get adjusted, so that they provide adequate tools to address issues that are current to certain moment or situation. Therefore, is it an example of a long-term economic, ecological and social urban vision, that has been slightly modified under recent challenges related to metropolisation, globalisation, economic cycles with 2008 real estate crisis and post-2010 start-up boom. Latest planning documents are addressing rapid metropolisation in terms of sectoral shift towards service and innovation sector as well as rapid population growth to assure that these processes have not challenged long-term environmental performance, especially in terms of CO2 emissions per capita, air and water quality or recycling (OECD, 2013).

To what extent were trade-offs avoided between economic, ecological and social values (e.g. urban green spaces in densifying areas)?

There was a lot of attention put to avoid trade-off in terms of ecology and economy. For example, for each new development on brownfield there were very strict green space requirements including not only what share of new estate should be green area, but also how it would connect to other green areas through green corridors, what species should have their habitat there and how to include ecologic services for inhabitants in a sustainable way. Most trade-offs can be seen in terms of social goals resulting from

housing crisis. The number of new housing is still below the level of demand and there is a price mismatch between what type of housing is being developed and what is the demand. Developers and municipalities are good in building high quality expensive show-case houses, but fail to deliver affordable, mid-range quality housing. The provision of new housing is dropping because people cannot afford it.

Was there a tension between sustainability at different levels of scale (e.g. a locally sustainable development having unsustainable attributes at the regional level)?

Not really. Swedish policy making is very much based on the consensus culture and includes a lot of participation and negotiation, particularly in the public sector. Anchoring the policy-making process in the multi-level political structures contributed to the strategic alignment of goals across Stockholm county municipalities. As the planning process was very much evidence-based and meritocratic, local policymakers asked for more tangible goals and tasks that they could focus on in short-term perspective, that were directly linked with key development and land-use variables. Due to this comprehensive approach and on-going evaluation there are almost no tensions between different levels of scale.

To what extent were financial, fiscal and economic mechanisms responsible?

In Stockholm there is an intentional policy in relation to urban form – they have guidelines. There is however a market-led demand imbalance. There is a general demand for affordable high-density buildings in well-connected and infrastructurally equipped areas. However the market situation makes these particular real estate relatively expensive. Therefore wealthy people who could afford it are rather choosing more expensive low-density scattered real estate with higher standard and privacy for a similar price. Therefore even though there are few permissions to build single family houses they are easier to sell on the market for developers, as the demand also qualifies for mortgage much easier than mid-income people who have problems with getting mortgage for more sustainable and desired high-density building in already urbanised areas or former brownfields.

How sustainable are the measures themselves over time?

There is an obvious sustainability issue that will probably intensify over time and that is the housing crisis. The complexity of legal, economic and institutional factors behind the housing crisis in Stockholm is the reason why the plan has limited power to mitigate it. The number of new housing is still below the level of demand and there is a price mismatch between what type of housing is being developed and what is the demand. The profitability principle does not always meet with urban planning principles, and so some tasks are not subject of political will that is implementable by private companies. It is very often the end

price and financial availability of the developed housing or rental vs. ownership ratio that goes under the negotiation with the developer that might lose profit margin because of the rising costs. Developers and municipalities are therefore good in building high quality expensive show-case houses, but fail to deliver affordable, mid-range quality housing.

Do they produce economic benefits?

Stockholm indeed became a start-up hub and a lot of tech and green economy companies are flourishing in the city's business districts. The attraction factor is also working in terms of high-quality workforce. Population of Stockholm grew by approximately half a million in a decade. Strict, tangible and progressive environmental measures, intentional attractiveness and economic policies have contributed to great economic and urban attractiveness, dynamic growth and metropolisation. However, these economic benefits put pressures on social sustainability that has not been institutionally efficient enough to mitigate growth externalities. In fact many actors agree, that the social dimension of sustainability is compromised the most and to certain extent is a victim of success of the sustainability model implemented in the Stockholm region.

To what extent do they enjoy popular support or consensus among stakeholders?

It seemed that regardless of the actor, general sustainability principles related to urban containment policy have high legitimisation among most actors in decision-making processes. Therefore, general land-use goals and planning principles have high support and remain constant in the long run. Even though most stakeholders agree that the strategic vision has rather high social and political legitimisation, their opinions differed in terms of its actual integrity. Majority of public sector stakeholders claim it was developed in a transparent evidence-based process, guided by evaluation, with significant inclusion of bottom-up ideas and therefore it adequate to the potential and existing functions of the area. Local-level stakeholders view the vision as ambitious, but politically ambiguous, as some claim that it undermines core Swedish values like equity, social-democratic ethos and lagom (not too much not too little rule). Other stakeholders, claim that the accepted strategic vision is compromised in practice, procedures and through lack of equal access to the possibilities it offers. Strategic vision of facilitating intentional social mix and therefore counteracting social spatial segregation was often undermined by pragmatic issues, like land availability.

How can urban sprawl be contained and which instruments can be used to do that?

Compulsory link of housing development with infrastructural and transport accessibility (i.e. you can only build housing within 10 minutes of existing public transport – this rule is only for housing, not commercial buildings).

Cooperation of municipalities and regional planners based on political negotiation, compromise and/or consensus as well as reliable evidence-based planning.

Agreement of designating one best development area, that meets the infrastructural and transport accessibility criteria.

Urban sprawl analysis for the Stockholm region shows that with these measures sprawl is more likely to be under control in more central parts of the region, especially within the functional metropolitan area of Stockholm, but not in more peripheral areas of the region. The reason for that is when there is a developer that wants to build in a lagging-behind municipality, a more opportunistic political approach of the local council will dominate the obligation to conform to the regional plan. Stockholm city with its attractiveness can have stricter expectations concerning sustainability, energy, technologies and solutions, whereas other municipalities have less power over the demand, standards and quality of developments.

How can green and open spaces in urban areas be maintained for the quality of life, despite the (laudable) effort to densify settlement areas?

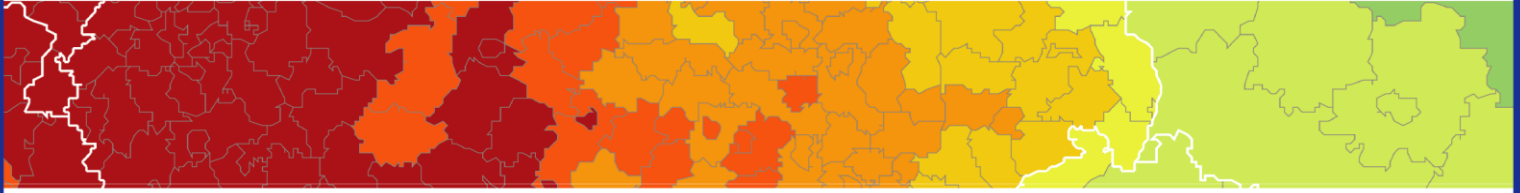
By protecting areas that are critical for the ecologic services, like greenways, avoiding fragmentation of green areas, developing new greenway corridors between new and existing greenway areas, compulsory integrated planning of green areas in new developments.

How can financial, fiscal and economic mechanisms be used to limit urban sprawl?

In Sweden they use rather regulatory mechanisms. Most of economic mechanisms they used do not work. In that case regulatory policies are more efficient than economic regulations. And it is part of a more deeper understanding, philosophy of development that is sustainable because some goods are intentionally excluded from the market and full external costs are included into economic equation.

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ESPON 2020 – More information

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