

SUPER – Sustainable Urbanisation and Land Use Practices in European Regions

Applied Research

Annex 3.3: Case study BE-Flanders

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Abbreviations

AESOP	Association of European Schools of Planning
APA	General Construction Plan (<i>Algemeen Plan van Aanleg</i>)
ARTS	ESPON Assessment of Regional and Territorial Sensitivity
BPA	Special Construction Plan (<i>Bijzonder Plan van Aanleg</i>)
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
GRS	Municipal Spatial Structure Plan (<i>Gemeentelijk Ruimtelijk Structuurplan</i>)
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
PRS	Provincial Spatial Structure Plan (<i>Provinciaal Ruimtelijk Structuurplan</i>)
PCG	Project Coordination Group
ROS	Spatial Development Structure (<i>Ruimtelijke Ontwikkelingsstructuur</i>)
RSV	Spatial Structure Plan Flanders (<i>Ruimtelijk Structuurplan Vlaanderen</i>)
RUP	Spatial Implementation Plan (<i>Ruimtelijk Uitvoeringsplan</i>)
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
VCRO	Flemish Planning Codex (<i>Vlaamse Codex Ruimtelijke Ordening</i>)
VEN	Flemish Ecological Network (<i>Vlaams Ecologisch Netwerk</i>)

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 BE-Flanders 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 BE-Flanders

In 1996, a Flemish decree on spatial planning obliged municipal governments to draw up their own spatial structure plans, while urban development became the spearhead of all other policies (Map 1.1). This effort was further assisted by the decree on the organization of town and country planning of 1999. Some years later, in 2003, the structure plan of Ghent used this framework to address urban sprawl without explicitly mentioning it.

Map 1.1: Location of case study "BE-Flanders".



1.2 Scale/s of analysis

The main focus of the case study is structure planning, starting from the Spatial Structure Plan of Flanders (NUTS 1) that gives the framework to the Provincial and Municipal Spatial Structure Plan of respectively East-Flanders (NUTS 2) and the City of Ghent (LAU2). This got legally anchored by the Flemish Decree on Spatial Planning from 1996 and integrated to the decree on the organisation of town and country planning of 1999.

Table 1.1: BE-Flanders scales

Scales	Main scale	Other scales
Supra/Trans-national		
NUTS 0		
NUTS 1		Flanders
NUTS 2		East-Flanders
NUTS 3		Arrondissement of Ghent
LAU1 – NUTS 4		
LAU2- NUTS 5	City of Ghent	

1.3 Geographical scope

Boundaries of the case study are in alignment with NUTS/LAU classification. Main geographical scale is the Flemish region (NUTS 1), while secondary is the province of East-Flanders and thirdly the city of Ghent (LAU2).

2 Contextual analysis

2.1 Typical urban development

In Flanders, most houses built on greenfield sites are self-commissioned detached houses. On parcels of land there are almost always ground-level dwellings to be found. There is even a typical 'allotment house': a detached house on a spacious plot, with only an attic (De Decker et al. 2010). According to De Meulder et al. (1999) it is necessary for citizens to have enough space around the house to be able to rebuild it later and adapt it to new living conditions. The Flemish housing market has traditionally been a static housing market. Because the occupant does not expect to move, there is more reason (within the budget) to realise the individual dream house. The government is therefore cautious with overly strict architectural regulations. The floor plan is often rectangular, with the long side parallel to the street. The facade is representative, the entrance at the front.

Around 2010, there has been a tendency to build in series. Although the ground-level housing type dominates the parcels, there is a lot of variation in subtypes (e.g. patio houses, pastoral houses, fermettes, villas, bungalows) and building styles (historicising, modern). Recently, series construction has also increasingly been taking place in more compact housing types: semi-detached houses (so-called triple-faced houses) and terraced houses (the two-faced houses, or terraced houses) (De Decker et al. 2010). Nowadays, however, more and more municipalities and project developers tend to develop project-based group homes and apartment buildings. According to De Decker and Dewilde (2010), the house is now less regarded as the final step in the residential career. As a result, the housing market can now be characterised less as 'static'. This makes greater architectural and urban planning homogeneity possible.

In order to achieve the objective of the Spatial Structure Plan of Flanders, the Spatial Structure Plan of Ghent designated a number of 'areas to be actively developed' (Studiegroep Omgeving & Stad Gent, 2003). 'Areas to be actively developed' could be developed without mutual phasing, at a realistic high density. The city council already had a fairly progressive vision on spatial policy, but there was an urgent need for additional housing. In this respect, the city wanted to pursue a housing supply policy.

An example of a typical development in implementation of a structure plan, is Lange Velden in Wondelgem (a borough of Ghent since 1977, four kilometres north from the centre). According to the structure plan of Ghent, Wondelgem, together with Mariakerke, is part of the 'western suburbs'. This area is referred to in the plan as a suburban residential lobe: "The building density there is lower than in the core city but clearly (sub-)urban" (Studiegroep Omgeving & Stad Gent, 2003, p. 221). The structure plan advocates a housing density of 25 to 30 dwellings per hectare and calls this the maximum density to meet the wishes of young families. Lange Velden, an area which was previously used for agriculture, had to represent a kind of pilot project after the development of the structure plan. Like many other areas in and around Ghent, this (partly) residential expansion area (woonuitbreidingsgebied, a kind of

reserve area primarily intended for group housing or social housing) was de facto converted into a residential area as a result of the regional spatial implementation plan: the delineation of the metropolitan area of Ghent (Ruimte Vlaanderen, 2005).

Lange Velden is situated between the expressways R4 in the north, and three already built-up streets. In order to create support from the neighbourhood, the new buildings could not differ too much from the existing buildings in terms of size and architecture. The area is accessible for cars from four locations. The meandering avenue is the only thoroughfare in the plan. At right angles to it are nine residential streets that are connected to each other on the south side (Tennekes & Harbers, 2012).

Figure 2.1: Urban design for Lange Velden



Source: Stad Gent

Figure 2.2: Lange Velden



Source: Google Street View

2.2 Basic institutional conditions

The housing culture in Flanders has traditionally focused on private commissioning. Therefore, it is primarily a new-build market, i.e. the proportion of transactions in new-build homes is relatively large compared to transactions in the existing stock. There is an extensive parcel market for private individuals and many different institutions are available to support private commissioning (Dol et al., 2011).

With the introduction of the Law of 29 March 1962 on the organisation of town and country planning and urbanism, planning instruments were set up for the first time (Belgisch Staatsblad, 12 April 1962). As no supra-municipal plans were laid down until the second half of the 1970s, municipalities were able to draw up their own General Construction Plan (Algemeen Plan van Aanleg, APA) for the whole of the territory and Special Construction Plans (Bijzonder Plan van Aanleg, BPA) for certain areas and, on that basis, approve building permits, without having to check them against a higher plan. The BPA thus functioned as a 'opener' of the land market, with the primary aim of making building possible. Restrictions based on spatial planning principles were minimal (Van den Broeck et al., 2014; Tennekes & Harbers, 2012).

In the second half of the 1970s and early 1980s, the regional zoning plans were finally laid down, because of a desired legal guarantee of activities that had already started. These plans were not only determined by the zoning already allocated by municipalities, but also included pre-design regional plans with a global character, which were laid down to a high degree of detail. The result was an enormous amount of residential area (227,500 hectares), which exceeded requirements many times over (De Decker, 2011; Loris, 2011). For parts of the

territory, land-use planning was further elaborated in BPAs on top of the regional zoning plans, but as such a large surface area was designated for housing, in many cases, housing construction does not begin with the municipal decision to change the land-use plan, but with the decision of an individual landowner to develop the land or sell it to a developer. Municipalities no longer have much influence on the location of building sites. If its plans correspond to the legally defined destination, a developer cannot be refused planning permission (Tennekes & Harbers, 2012).

With the Spatial Structure Plan Flanders (Ruimtelijk Structuurplan Vlaanderen, RSV) (Ruimte Vlaanderen, 1997), an attempt was made for the first time to put an end to unbridled building. It set out the content lines, formulated rules of play and functioned as a spatial frame of reference with and for selections of networks, urban areas, cores and infrastructures. The plan defined the contours of urban areas and allocated new building quotas to them, in order to be able to focus on compaction and residential environmental objectives. However, the effectiveness of this plan is hampered by the fact that in the past such a large surface area was designated for housing.

The legal ground for structure planning, was the Spatial Planning Decree of 24 July 1996 (Belgisch Staatsblad, 27 July 1996). This decree defined the concept of spatial structure planning and stated that each structure plan should provide an informative, a guiding and a binding part. The informative part should contain both the existing state and the expected spatial trends, the guiding part should contain the overall vision for the plan area and the binding part should contain a number of mandatory actions that must follow from the vision of the guiding part. The guiding part of a spatial structure plan is the part from which a government may not deviate when taking decisions, except for unforeseen developments in the spatial needs of the various social activities or for urgent social, economic or budgetary reasons. The binding part of a spatial structure plan is the part from which a government may simply not deviate.

The 1996 spatial planning decree also described the procedure for drawing up these plans and regulated the implementation of them. It created a three-part subsidiary system of spatial plans. The Flemish government, all five provinces and all 308 Flemish municipalities were obliged to draw up structure plans with a vision, strategies and actions for the spatial future of their territory. If not, municipalities or provinces could not design implementation plans and were obliged to seek approval from the regional level for the granting of permits. Moreover, any structure plan at a lower level had to be consistent with that at a higher level.

A few years later, the Decree of 18 May 1999 on the organization of town and country planning (Belgisch Staatsblad, 8 June 1999) adopted the Planning Decree of 1996 (which in fact would not have been necessary if this first one had been finished on time). Since then, structure plans had to be supplemented by so-called Spatial Implementation Plans (Ruimtelijk Uitvoeringsplan, RUP), which would gradually replace the existing regional zoning plans. These RUPs can still be seen as zoning plans, but leave the authorities more flexibility in

designating and regulating land use (Van den Broeck et al., 2014). It is not only the municipality that can draw up an implementation plan, but also the province or region if it is a provincial or regional interest. The binding part of a structure plan is usually a list of spatial implementation plans to be drawn up.

2.3 Initiative

Because in Flanders urbanisation often takes place on land that has already been earmarked for housing in the past, the location of housing is de facto determined at the moment of a private initiative, either because a private landowner wants to build on his own, already accessible plot, or because a landowner can buy a piece of land somewhere from a landowner. These are often companies that buy land with a residential purpose, apply for a building permit, make the land ready for building and resell it. Since the 1970s, landlords have increasingly started to build homes for consumers who do not want to go to the trouble of private commissioning (Tennekes & Harbers, 2012). Private individuals have different motives than professional developers. Partly because of this, there is a large gap between the 'legal potential' of land (i.e. plots of land that have a residential destination) and the actual supply. Not only can there be speculation - in the sense that landowners can wait for further rising prices - but often land is also held in case children or grandchildren would later be interested in building on it (De Decker et al. 2010).

In the case of Lange Velden in Ghent, in anticipation of a conversion from residential expansion area to urban residential area, a number of professional developers had already bought the land. Initially there was no agreement between the developers and one landowner in the central part of the area. It was therefore decided to develop the area in phases, around the land of the 'unwilling' owner. Eventually this owner joined the plan. The north of the area has been designated as a green buffer strip in the regional zoning plan. Within the agreement between the municipality and the landowners, these lands were sold to the municipality for a relatively soft price.

2.4 Planning permission

In Flanders, mayor and aldermen are the decisive actors in the issuing of building permits, with an obligation to ask content-related advice from their urban planning official(s). Diverting from that advice - the so-called 'overruling the advice' - does not happen frequently. Often simply because it is well-founded or trusted, but also as overruling it could provoke a perception of favouritism within the local council or society (Claus & Leinfelder, 2019). The Decree on the organization of town and country planning of 1999 provided the transfer of the power to grant planning permissions to the municipalities, so, for example, the city of Ghent is in charge for planning permissions and their granting. This enters into a force when municipalities meet five conditions: they need to have a municipal planning official, a certified

plan register, a duly established register of planning permissions, a register of vacant parcels and an approved Municipal Spatial Structure Plan.

2.5 Development process

In Flanders, there is a wide range of possibilities to realise one's own house. For instance, citizens can completely construct a house on their own, but also have the possibility to select one from a catalogue by a contractor. For the construction process itself, a private individual has various options: (1) via a general building contract, in which a contractor is the point of contact and hires others, (2) via separate contractors, in which the private individual does the coordination himself, or (3) via the hiring of a professional (e.g. an architect), who coordinates all contacts with contractors. Belgian law requires an architect to be involved in every building process. He/she is responsible for the soundness of the design, the correct submission of the building permit application and the correct execution of the construction. Moreover, the architect remains liable for ten years for any errors in the performance of his/her duties. Even if the owner wants to build or manage the building process himself, both the design and execution must be under the supervision of an architect (Tennekes & Harbers, 2012).

2.6 Current issues

For Flemish municipal authorities it is very interesting to parcel out land. Local governments want to safeguard the remaining open space of their municipality, but that often does not outweigh the fiscal advantages of building, which are often also an electoral added value and gives a strong competitive position in relation to neighbouring municipalities. In this manner, De Decker (2017) likes to speak of a ponzi-fraud in the countryside, where new parcels of land are approved in order to pay for the maintenance of previous parcels of land. This can work as long as the community continues to grow, but as soon as the growth reaches its limits, the municipality is left behind with the costs of maintenance.

If municipalities want to change the destination of an area from building land to e.g. agricultural land, they have to pay compensation to the land owner. At the moment this compensation is defined to 80% of the purchase value, but the Flemish government wants to change it to 100% of the market value. In this way, it will become more or less unaffordable and legally impossible for municipalities to stop land take. Experts say that as long as the regional zoning plans continue to exist - with their 227,500 hectares of residential area – a successful stop on land take will be practically impossible.

There are still too many escape clauses in Flemish planning policy, and the government wants to extend this. At the beginning of the 21st century, the Flemish government voted a regulation that completely undermined the long-term strategic vision it had set out in the Spatial Structure Plan Flanders. Two decisions of the Flemish government were far reaching: the fundamental rights for buildings and constructions situated in other than residential zones

to be renovated, rebuilt (at the same or another location) or expanded to a maximum of 1,000 m³ (2001) and the possibilities to change the use of constructions to a use they are not allocated for in the zoning plans (2003). Hence, the open space in Flanders is increasingly characterised by residential villas where agriculture, nature or forestry should have prevailed. The second regulation allowed in agricultural zones to change the use of farm buildings to housing, office functions, storage, riding schools, animal shelters, petting zoos, and so on. In December 2019, the Flemish government decided to broaden the rules of the game and make any other use than agriculture possible on farms in agricultural zones (Departement Omgeving, 2020). However, the draft decree received a backlash of criticism in a series of hearings in the Flemish Parliament. Moreover, the Council of State recommended its deletion on the grounds that it violates the principle of equality. The majority is currently considering how to amend the decree.

3 Sustainability of objectives

3.1 Thematic dimensions

Structure planning in the first place considers ecological, then economic dimensions. Structure plans, especially at provincial and regional level, did not make explicit, decisive policy decisions on equity. On a local level, it can make decisions in terms of social housing quota.

The Spatial Structure Plan Flanders set out the content lines, formulated rules of play and functioned as a spatial frame of reference with and for selections of networks, urban areas, cores and infrastructures. The first spatial principle in the Structure Plan Flanders was to be open and urban: to combine new developments in the urban areas in order to safeguard the remaining open space. For that it made a very clear distinction between the urban areas and the countryside (buitengebied). At the time, 60% of homes were located in urban areas and 40% in rural areas. The structure plan for Flanders wanted to break the trend of suburbanisation and urban exodus by setting this existing ratio as a priority for the next 20 years. For that, the Flemish government delineated 13 urban areas wherein new developments could take place. The metropolitan area of Ghent is one of them. As far as activity is concerned, 80% of the new business parks had to be located in economic hubs and 15% outside them in smaller centres of the outlying area. The second principle was deconcentrated clustering: clustering within the deconcentrated pattern of housing, infrastructure and industry; concentrating these buildings and infrastructure in urban areas and in the larger village centres of the countryside.

In its turn, the provincial structure plan of East Flanders delineated 12 small-town areas in its province. The general principles of this structure plan stand for a spatial policy based on an area-based consideration, taking into account its finiteness, spatial carrying capacity, historical context and existing spatial structure. This is followed by a global vision of the spatial development of the province as a whole, after which the structure plan elaborates these further for each subspace. As with the spatial structure plan for Flanders, the structural plan for East Flanders harmonises the desired developments per substructure on the basis of these visions.

The structure plan of Ghent wanted to do something about urban sprawl without explicitly mentioning it. Firstly, by working on and reusing the existing structures. Secondly, by strengthening the natural structure in the city and protecting it. The intention in 2003 was to prepare the city for the future. Making the city denser in most of the places and giving space to a couple of deprived areas. The Structure Plan of Ghent contains a very clear vision of which spaces it absolutely wants to protect as open space. Considering equity, it proposed concrete targets for social housing in terms of quality, rather than quantity. Property developers became obliged to provide space for social housing. In their turn, social housing companies with large plots of land in its neighbourhood had to allow private housing too.

Many deprived 19th century neighbourhoods got an upgrade. A positive mentioned aspect was the interweavement of socio-economic classes and functions.

3.2 Temporal balance

Structure planning is an answer to the 'final state planning' that existed before. The final state planning was set up with the regional plans and the BPAs that strongly indicated the final state of development. It was a passive way of planning in which the government does nothing, but waits for the private parties to take the initiative. It was also a time, in the 1990s, when it became clear that regional plans were twenty years old and that a long-term vision was lacking. Then it was said that a system of structure planning was needed.

Structure planning has three tracks: the long-term vision, the short-term vision and challenges via land use and management plans and communication, creating support among the population. These three tracks are in constant interaction with each other. The structure plan reflects a long-term vision from which very concrete implementation plans can be drawn up for the short term, in function of projects and in function of challenges. The Spatial Structure Plan Flanders of 1997 is for the first time a long-term vision of the spatial development for Flanders. At that time the intention was to apply the structure plan of Flanders until 2007, but it still applies today.

The structure plan for Flanders provided a framework for drawing up provincial and municipal structure plans. It already created a number of preconditions and choices that which provincial and municipal structure plans had to take into account. The legal ground for this, was the Spatial Planning Decree of 24 July 1996. This way, municipal governments were obliged to draw up their own spatial structure plans.

4 Impact assessment

4.1 Pre-intervention

4.1.1 Identification of the problem

The focal issues are very different depending on the scale of the area/policy level, of which each has its own document concerning structure planning. For instance, the 'Spatial Structure Plan Flanders' and its legal framework, the Spatial Planning Decree of 24 July 1996 (Belgisch Staatsblad, 27 July 1996), were introduced because the instruments used at the time were too centralistic and static. In the meanwhile, there was a need for at least 400,000 additional housing units. Business as usual – taking up 12 additional hectares of open space every day for housing, industry, commerce, transport infrastructure, recreation, etc. – was recognized to be unsustainable. The Law on the Organisation of Town and Country Planning (Belgisch Staatsblad, 12 April 1962) had been amended several times to give more opportunities for landowners to build on plots outside areas designated as building land. "The country had ended up with a patchy kind of spatial planning and land-use allocation that was not sustainable in the long run and that had in practice become an ad hoc "first come first served" approach" (Van den Broeck et al., 2014, p. 171). The spatial disorder, e.g. ribbon development and almost arbitrary parcelling, caused an excess of traffic jams and had a huge impact on biodiversity, environmental quality, water management, etc. In order to solve this issue, a strategic plan was needed for both the regional (NUTS 1), provincial (NUTS 2) and municipal/local level. All interviewed stakeholders agreed on this.

The province of East Flanders was given a policy competence in spatial planning from 1999 onwards. It therefore became a decretal duty to draw up a structure plan that follows the Flemish structure plan's philosophy and complements it with an area-based approach and strategic projects. The province had to deal with problems such as water management, mobility and the urban exodus. Moreover, the Municipal Spatial Structure Plans (Gemeentelijk Ruimtelijk Structuurplan, GRS) had to comply with the Provincial Spatial Structure Plan (Provinciaal Ruimtelijk Structuurplan, PRS).

In the city of Ghent, additional space was needed for both housing, offices and industry. This needed to be well aligned with future developments in terms of mobility and facilities. Meanwhile, there were a number of deprived areas that absolutely needed a revival, such as vacant factories and the 19th-century residential belt around the city centre. People were fleeing the city, looking for green space and clean air for their children. Ghent already had a tradition in urban planning. From the 1980s onwards, two attempts were made to draw up a kind of structure plan/spatial policy plan for the city. However, these were never approved, partly because there was no political majority and no legal framework. Moreover, the plans had a strong focus on the core city, but made almost no statements about green space, deprived areas or the peripheral municipalities that became boroughs since the merger of 1977.

Table 4.1: The main focal issues according to interviewed stakeholders

Focal issue	# instances
Design an overarching long-term vision for the territory.	2
Safeguard open space from further surfacing and construction.	7
Reduce traffic jams as a result of spatial distribution of housing and facilities.	2
Develop and protect nature/green infrastructure	3
Stop the urban exodus	4

4.1.2 Inception of goals/action

All respondents acknowledged the problems structure planning sought to address – preserve the open space - but not all agreed that the instrument was adequate enough to address these problems.

Apart from the respondents, not everyone was equally happy with the introduction of structure plans. There were real estate developers and certain land owners who would rather continue as they were. In implementation of the structure plan for Flanders, they brought in specialist lawyers to fight against it legally. The Flemish government responded with legislation changes to allow individual plans to prevail over the general interest. Structure planning got no direct link with licensing policy. Every structure plan starts with the sentence: 'no urban development permits shall be granted or refused on the basis of a spatial structure plan'.

Since 2009, municipalities have the opportunity to take into account the desired future policy developments in the assessment of permits (beleidsmatig gewenste ontwikkeling, article 4.3.1 §2, 2° in the Flemish Codex for Spatial Planning), in line with the guiding part of the structure plan. However, since it is not an obligation, not many governments on all policy levels have made use of this opportunity. Some municipalities apply it for a selection from its planning policy via circulars (omzendbrieven), e.g. for no longer allowing high-rise buildings or creating a certain parking policy. Because the article contradicted the rule that structure plans have no legal basis for the granting of permits, the Flemish government deleted that paragraph from the Flemish Codex for Spatial Planning in 2018. Since then, only, the Structure Plan has de facto also become a desired policy development - although it is not mandatory for municipalities to use it for the assessment of permits. In practice, however, this means little. Land use destinations and associated regulations remain the most decisive factor in the granting of permits. Moreover, Flemish municipalities do not have many incentives to block developments. Firstly, because they know it could have a negative electoral impact to block the granting of permits. During the earlier public survey for the structural plan, citizens assumed that the structural plan could not form legal ground for licensing policy. Had they known at the time that article 117 would reduce this, they would probably have lodged an objection. Secondly, local governments have a lot of municipal taxing possibilities at their

disposals, and so every new development (every new resident) is an asset. Only a small proportion of their income consists of government grants (Harbers & Tennekes, 2016).

The spatial vision and the priorities laid down in structure plans form the basis for Spatial Implementation Plans. Implementation plans do contain urban planning regulations on the basis of which urban development permits can be issued. They can be seen as zoning plans, but leave the authorities more flexibility in designating and regulating land use (Van den Broeck et al., 2014). In principle, spatial implementation plans must be systematically drawn up in the coming years after approval of a structure plan, with a view to achieving the structure plan's targets. Until 2014, the province had to approve municipal implementation plans. A condition was that the province itself had a structure plan approved by the Flemish government. This rule was replaced by a possibility of suspension by the deputation.

Only half of the respondents considered the intervention of structure planning to be timely. The first ideas of structure planning date back to the 1970s. However, it only got introduced into legislation in 1996. According to respondent 2, from 1980 to '97, more damage happened than in the centuries before. Flanders had no spatial vision at all. Given that in Flanders an excess of space for housing (227,500 hectares) had already been laid down in the regional zoning plans between 1976 and 1980, the municipalities had their hands free to issue permits in places where one would never have wanted them to be. In the meanwhile, the emerging environmental problems in spatial planning were clear.

4.1.3 Pre-intervention conclusions

Respondents 1, 2, 5 and 14 pointed out that a strategic planning policy instrument only works when it is aligned with the planning policy legislation e.g. zoning plans and licensing policy. Legislation that has a disruptive effect on the collective long-term legislation should be abolished. Moreover, respondent 2 said we should question our traditional thinking on property rights.

Respondent 5 warned against thinking in black and white in terms of rural and urban areas. A rural area, for example, can be intersected by heavy infrastructure which gives it an urban character. The focus should lie on the interweavement of functions and the economic concept of housing markets, rather than a strict frame of territories. That is also a way to look at functional areas, beyond administrative boundaries. Respondent 14 found that too many municipalities were designated as urban areas.

Respondent 2 insisted to apply the principle of subsidiarity consistently. That higher authorities should only be granted powers which the lower authorities are unable to exercise or are less able to exercise properly. He gave the example of the Flemish government, which took on the delineation of the agricultural and natural structure (through regional spatial implementation plans), when in fact, according to the principle of subsidiarity, this would not have been possible. Subsidiarity means entrusting local authorities, whether or not in regional

cooperation, with the task of drawing up a proposal for their own region. Flanders could have said: "we need to delineate so many hectares of forest and nature, which means that so many hectares of farmland must disappear in your area and it is up to you to come up with a proposal. You have five years to work out this proposal with actors in the field. If it doesn't work out, we'll do it for you as the Flemish government." Instead, the Flemish government descended most of the supra-municipal delineations and imposed matters to the municipalities in question. Hence, during the delineation of the thirteen metropolitan and regional urban areas and the thirteen rural regions, municipalities started to oppose the national government that, in their eyes, was intervening too strongly (Vanbelle, 1996; De Vries, 2002).

Respondent 7 said that cooperation between departments and sectors is crucial for both a good design and implementation. In Flanders, often departments wanted to push through their own agenda, which threatened to make the structure plan as a cluttered pile of individual programmes. "For a strategic plan, one should put enough emphasis on procedural matters, rather than on the physical structure. Describing procedures – a methodological approach - is important to align departments and sectors. If not, every sector does the implementation their own way."

Others respondents urged intensive participation of the population in the preparation of a long-term strategic plan. Human planning with a procedural participation in which people are actively involved. Moreover, respondents stressed the need to keep structure plans up-to-date. The structure plan of Flanders is already 22 years old. That is not what it was made for. It says nothing about climate change, nor about renewable energy. When the first wind turbines appeared, the plan gave no real guidance on this key issue. At last, respondent 11 said to first try to build up ideas and then see what research is needed for that, not the other way around as it has been done.

4.2 Implementation

4.2.1 Technical capability

When structure planning got introduced in the period between the 1990 and 2000, it was a completely new concept for the Flemish government, as well as for the municipalities and provinces in the period between 2000 and 2010. Anyhow, there was close cooperation with the academia that introduced the concept, as well as with consultancy firms that were able to provide the necessary expertise. The number of respondents who see this as a strength is twice as high as the number who see this as a weakness.

4.2.2 Data and information

Four respondents considered this as a strength, three as a weakness.

In connection with the structure plan, about twenty to thirty studies have been carried out by external consultancy firms: studies on the need for housing, socio-economic studies, mobility studies, etc. At the same time, the Flemish Government developed a geographical information system. Some respondents claimed you never have enough data. On the other hand, you can keep getting lost in picking out details. "At some point, you just have to make a decision."

Something that was repeatedly reported is that too much data was collected for things that turned out to be unnecessary afterwards. For cases that did need to be investigated, there was no more budget left. A lesson to learn from this is that one should first try to build up ideas and then see what research is needed. In structure planning, they worked the other way around.

4.2.3 Participation

Four respondents considered this as a strength, three as a weakness.

At that time, participation was still a fairly novel concept in Flanders. For the structure plan of Flanders, there has been a participation process and an official public inquiry both in the preliminary design phase and in the design phase. There was a very informal citizens' survey, which was then translated in the broad outlines that emerged from it. Preliminary notes were explained to the Chamber of Commerce, civil society organisations, companies, farmers, etc. Respondent 5 said this kind of participation is arguably quite low on the ladder of participation (Arnstein 1969). The technical jargon was also often incomprehensible to citizens, local policymakers and politicians. Ten thousand appeals have been submitted. The main concern was whether they would be able to turn farming land into building land. They did not realize a structure plan is mostly a non-binding strategic vision, not a binding land use plan. Now governments on all policy levels stand further in citizen participation and thus deal with it differently. Considering the implementation – in particular the delineation of urban areas – one hundred municipalities and almost all the Flemish administrations and umbrella organisations for the social partners were involved in the process. For the delineation of rural areas - mainly the allocation of areas to agriculture, nature and forest - a total of almost seven hundred meetings were held (David, 2009).

At a local level, in Ghent, participation had not yet penetrated much into administrative practices, but at that time it already went beyond the classic public hearing. Together with a participatory communication agency, a number of thematic urban debates and consultations were held with the sectors. Brochures were also made and there was an exhibition. The intention was to write the plan as clearly as possible for everyone, but most respondents felt this was not a total success. According to respondent 8 (the deputy-mayor for planning at that time), participation was very direct. Together with the non-profit social organisation Samenlevingsopbouw (Civil Society Empowerment), she visited every citizen that would be

affected by the plan personally. For each district, the plan was explained and zoomed in on what is going to change. Even though the basic principles were clear to the citizens, the actual consequences only became clear during the implementation.

4.2.4 Strategic vision

All respondents considered the strategic vision of their structure plan - on local, provincial or regional level - as a strength.

The first spatial principle in the Spatial Structure Plan Flanders (Ruimte Vlaanderen, 1997) concerned the distinction between open and urban: new developments should be accommodated in urban areas in order to safeguard the remaining open space. To achieve this, it made a very clear distinction between metropolitan areas, regional urban areas and the countryside (buitengebied), to be delineated later through Regional Spatial Implementation Plans. The second principle was deconcentrated clustering: striving for clustering within the overarching deconcentrated pattern of housing, infrastructure and industry; concentrating these buildings and infrastructure in urban areas and in the larger village centres of the countryside. In the 1990s, the existing ratio of 60% of dwellings in urban areas and 40% in rural areas was in danger of reverting. The structure plan of Flanders wanted to break the trend of urban exodus by setting this existing ratio as a priority for the next 20 years. As far as activity is concerned, 80% of the new business parks had to be located in economic hubs and 15% outside them in smaller centres of the outlying area. The idea was to make cities become larger for the benefit of the countryside.

The metropolitan area of Ghent (Ruimte Vlaanderen, 2005) is one of the areas delineated by the Flemish government in a Regional Spatial Implementation Plan. Structural determining elements at the metropolitan level were the historical core, the 19th century belt around the core city, urban neighbourhoods in the broad urban periphery, peripheral residential areas (larger independently functioning residential areas with a strong functional link to the core city), the seaport area, stone roads and the natural delta. Within the metropolitan area, all areas designated for expansion were automatically converted into high-density residential areas and all buildings not permitted under original zoning regulations got a new destination. The intention was to strengthen the existing cores within the metropolitan borders and to densify the entire area with a mix of housing, facilities and activities.

The planning processes (spatial implementation plans) for the thirteen metropolitan and regional urban areas and the thirteen rural regions were exceptional given their complexity and their spatial and policy impact. The delineation of urban areas was crucial for restoring the quality of life in cities by creating an offer for living, working and urban functions. The province was involved in consultations with the Flemish Region for the delineation of metropolitan and regional urban areas and was itself responsible for the delineation of small-town areas. In East Flanders, one metropolitan area (Ghent); two regional urban areas and

twelve small-town areas were selected. The delineations of the latter areas were not coherent. It depended on the role of the area in the desired spatial structure of the province, aspects from the desired natural, agricultural and landscape structure of the provincial level, and the targets for housing and business activities (Province of East Flanders, 2004).

The Spatial Structure Plan of Ghent (Studiegroep Omgeving & Stad Gent, 2003) sought to address urban sprawl without explicitly mentioning it. It attempted to promote a sustainable development strategy by steering urban expansion in four selected suburban residential lobes, each provided with a green area (groenpool) nearby, connected with the city centre by four carriers of public transport and with each other by a green belt, with a business park at each intersection. The city needed to prepare for the future by working on and reusing the existing structures and by strengthening and protecting the ecological structure of the city. The plan contains a very clear vision of which spaces it absolutely wants to protect as open space. Moreover, Ghent was one of the first cities in Flanders to make the link between its structure plan and more general themes such as climate, water, forest and recreational space for the city.

4.2.5 Institutional coordination

All respondents considered the institutional coordination of their structure plan - on local, provincial or regional level - as a strength. According to respondent 14, all interests were around the table: the business community, middle riders, the environment and nature associations, ... there was always a balanced stakeholder approach.

During the interviews, each respondent/stakeholder was asked about his or her interaction with other stakeholders during the drafting and implementation of the structure plan. For each interaction - cooperation, negotiation and conflict/pressure – a stakeholder mapping diagram was drawn using an algorithm to push the most connected nodes to the centre of the screen and the least connected nodes to the periphery (Figures 4.1 to 4.3). Figure 4.1 shows that cooperation mainly took place between government/public authorities and intellectuals/experts, and in a second phase with stakeholders from the business/economic sector. The Network of Negotiation presents a more diverse picture, with negotiations mainly taking place between government/public authorities, civil society/social groups and the business/economic sector (Figure 4.2). Finally, Figure 4.3 shows that the most pressure was experienced from the business/economic sector and civil society/social groups.

Figure 4.1: Network of Cooperation

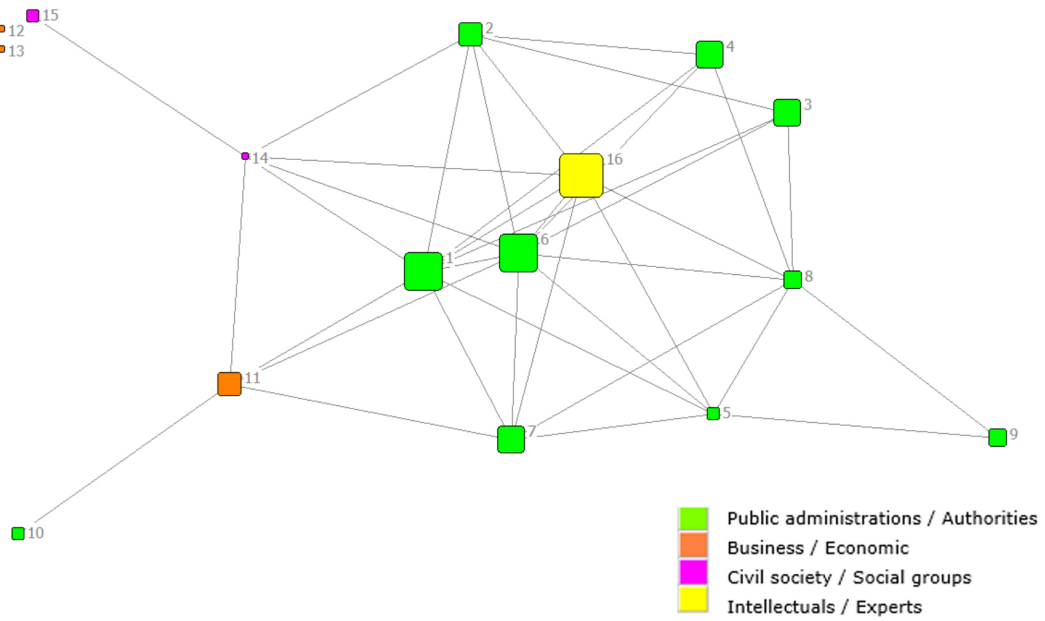


Figure 4.2: Network of Negotiation

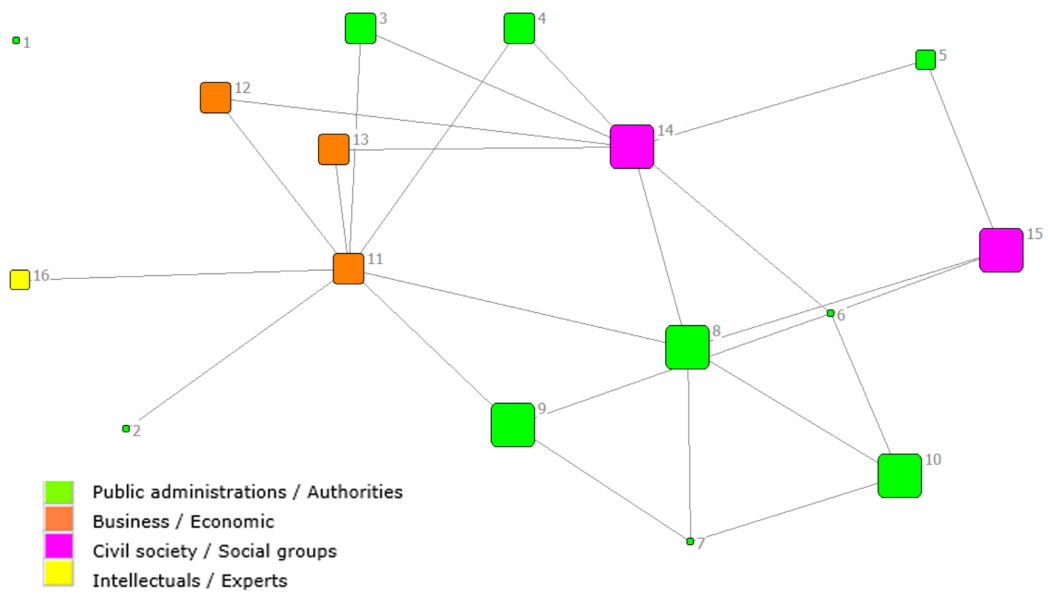
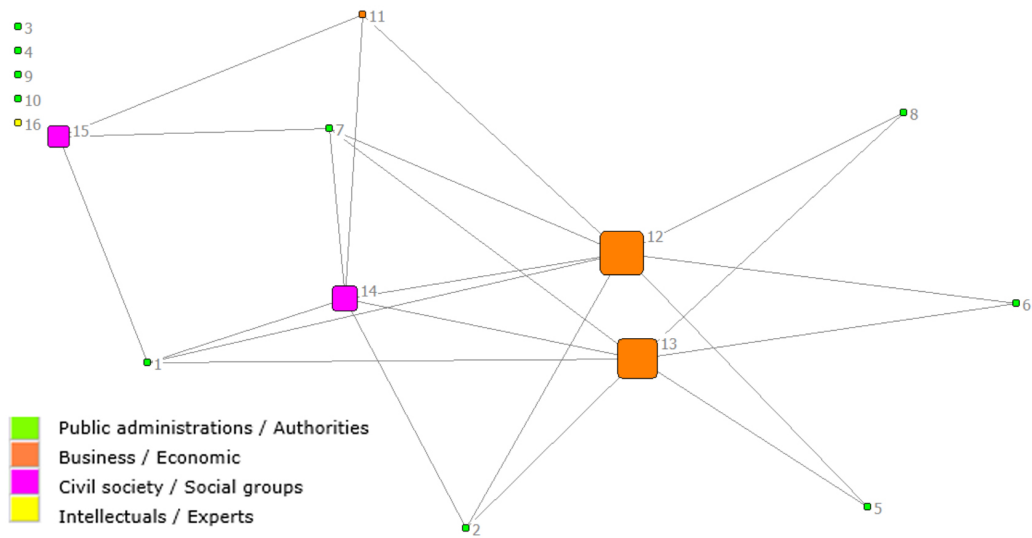
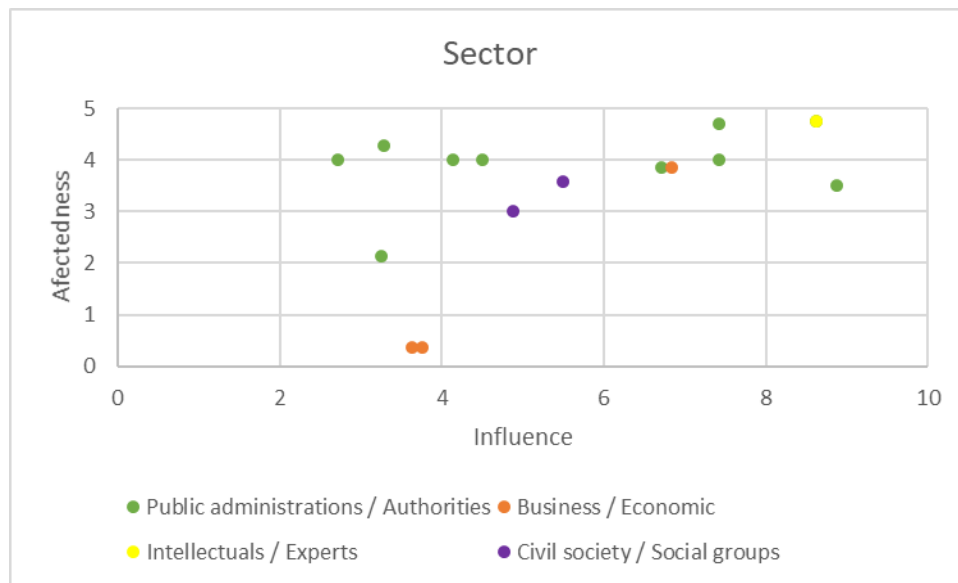


Figure 4.3: Network of Conflict / Pressure



The affectedness/influence plot (Figure 4.4) confirms what was also recorded throughout the interviews: that while intellectuals and experts had the most influence on structure planning, public administrations/authorities were the most affected by it.

Figure 4.4: Affectedness / Influence Plot



4.2.6 Institutional leadership

All respondents considered the institutional leadership in the implementation of their structure plan - on local, provincial or regional level - as a strength.

The Head of the Cabinet – and also right hand - of the Minister for Spatial Planning (1992-1995) has been a very important figure for the spatial structure plan of Flanders. He came from the economic sector and was convinced by his cabinet employee that if Flanders wanted to develop economically in a good way, a long-term vision was needed on logistics and the

development of business parks. Until then, planning was seen as a practice against business activity and reactive against developments. The minister was a Christian Democrat, but the structure plan of Flanders was eventually approved by the next minister, a socialist (1995-1998). The unique continuity of this project over two legislatures was mainly a consequence of the good connections between cabinet employees, civil servants and politicians. For instance, the head of the cabinet of the new minister came from the civil society organisation for a better living environment (Bond Beter Leefmilieu) and was already working on the structure plan for Flanders under the previous legislature. Hence, the economic and green sectors found each other there. "What was originally seen very strongly as a solution from the economic sector, was later also completed from a green point of view", said respondent 2.

The province was given a policy competence in spatial planning from 1999 onwards. It therefore became a decretal duty to draw up a structural plan. The provincial spatial structure plan was first drawn up by an external consultancy firm. However, when it turned out that they were not up to the task, the provincial administration took over. In this way, the province grew to an active planning body.

The director of the urban development department in Ghent already experienced two failures when the municipal council did not approve the structure/strategic plan. He would soon retire and thus wanted to finish the 2003 structure plan at all costs. It also seemed like a good moment to get it approved politically. According to respondent 7, the mayor and deputy-mayor for planning were strong visionary politicians of the city at that time. They acknowledged the city's challenges: the decline in the city's population; the need for new economic developments and the merger with peripheral municipalities. At that time there was no coherent plan for the larger city. The new boroughs still had their own administrative offices and urban development officials who had a great deal of autonomy with regard to permits and the discussion of projects. Only the larger and more difficult projects went to the central service.

4.2.7 Political will

All respondents considered the political will in the implementation of their structure plan - on local, provincial or regional level - as a strength.

Since structure planning got no link with licensing policy, there was not much political opposition to it. On a regional level, the Flemish Christian Democratic minister responsible for Public Works, Town and Country Planning and Internal Affairs (1992-1995) initiated the drafting of the Spatial Structure Plan Flanders, but never dared to approve it. The Christian Democrats were mostly interested in protecting agricultural areas. There were constant discussions about this with the socialists that went for metropolitan problems and the liberals that stood up for business interests. In 1995 the minister was replaced by a socialist (1995-1998). The people who worked on the structure plan for Flanders at that time, two academics

Louis Albrechts and Charles Vermeersch, together with civil servants and people from the midfield, convinced the minister to continue with the plan and to issue the planning decree of 1996. The Minister in charge was more daring because he was at retirement age and had no ambition to stay in politics. Assuming responsibility for a decision unpopular to some vocal interests, he approved both the decree and the structure plan. The decree of 1996 got integrated to the long-awaited decree on the organization of Town and Country Planning of 1999, which actually should have been ready before the structure plan of Flanders and is still in force.

Within the Flemish government, political enthusiasm has decreased over time (planning fatigue). From a few months after its adoption, the decree of 18 May 1999 on the organisation of town and country planning underwent continuous changes, re-increasing the development possibilities in non-residential areas. The intuitive observation is that planning legislation got voted in favour of only a small group of people that have been capable of channelling their individual development needs, through personal relations with politicians, to the regional/national level. In 2009, these numerous changes were integrated into a new decree - the Flemish Planning Codex (Vlaamse Codex Ruimtelijke Ordening, VCRO), which now regulates spatial planning in Flanders. In addition, in 2003 and 2010, the Flemish government amended the structure plan of Flanders in order to increase local economic development opportunities (Van den Broeck et al., 2014). Since 2009, the Flemish government is working on a new way of strategic planning - spatial policy planning (beleidsplanning) - which now also threatens to take the same policy path. Hence, the open space in Flanders is increasingly characterised by residential villas where agriculture, nature or forestry should have prevailed.

Within the province, there was little political opposition. The approval of the provincial spatial structure plan brought with it important new powers for the provincial government. Since then, the provincial-executive had the power to approve the municipal spatial structure and implementation plans. Moreover, the provincial council could draw up its own provincial spatial implementation plans.

Political opposition to structure planning itself mostly occurred on a local level. In Ghent, the local Christian Democratic party (CVP) and Far Right Party (Vlaams Blok) voted against the plan. For the far right the main reason was that a number of people were to be expropriated (also the far left was opposed to this). The Christian Democrats again stood up for the agricultural sector, which realised that it would have to give up agricultural land. Moreover, there were a couple of local governments that stood up against the concept of structure planning itself, because suddenly after 20 years of freedom to implement land use changes, they had to steer their policy to the Flemish government, i.e. central government, that imposed preconditions. This resistance was also present in parliament, since approximately one-third consisted of mayors and aldermen of rural municipalities (Renard, 1995).

Ghent is an example of a city where planning has 'always' been present and runs through different policy periods. Long before it was decided by the planning decree (1996) that there should be structure planning, Ghent already had several structure plans, because the government understood the economic and political benefits of it. In 1995, the socialist alderman for spatial planning became mayor of the city. For him, it was already clear the city needed a new plan. In addition, the planning decree of 1996, the spatial structure plan for Flanders and the delineation of the metropolitan area of Ghent provided an incentive to start working on this new structure plan. In the 20 years after approval of the structure plan (2003), the city was mainly concerned with drawing up spatial implementation plans. In 2018, the city for the first time after the 2003 structure plan, approved a new spatial strategic plan called 'Space for Ghent' (Stad Gent, 2018). According to respondent 6, this version is much more embedded in the objectives of all services and thus has become much more strongly implemented than the previous structure plan. While the previous plan was seen too much as 'that of the urban planning service', the new plan is seen as something of the city as an organisation. However, according to respondent 7, the policy plan 'Space for Ghent' has become a rather meaningless text with a lot of empty words about participation.

"The spatial policy plan is a political and administrative text with which you can go in all directions. They are now texts that no one has anything against, but no one reads either. The strengths and vision have not been sufficiently extended to the new plan. One of the reasons for this is that Flanders has abandoned the idea of spatial structure."

4.2.8 Implementation conclusions

The main lesson for structure planning, is that it should be well aligned with the planning legislation, e.g. licensing policy.

Structure plans are implemented through municipal, provincial or regional Spatial Implementation Plans according to the principle of subsidiarity. These allow for land use changes and further detailing of the regional zoning plans. At regional level, the implementation plans mainly consisted of the delineation of the metropolitan, regional urban, agricultural and natural areas/structures. The provincial level, on the other hand, took care of the delineation of small-town areas. The cities and municipalities, for their part, mainly took care of the delineation of green structures and business parks at local level.

According to respondent 2, the structure plan of Flanders has indirectly blocked an enormous number of development initiatives. A very innovative instrument for that, was the housing needs study (Belgisch Staatsblad, 5 June 1997). Before 1997, the municipality could simply develop its additional residential expansion areas (woonuitbreidingsgebied, a kind of reserve area primarily intended for group housing or social housing). A Municipal Spatial Structure Plan, however, was required to include a study in which was shown how many additional dwellings are needed on the basis of a natural population forecast, without emigration and

only on the basis of birth rates. And whether there is not already sufficient supply within the municipality to meet this need. As long as this study was not done, the Flemish government (minister) did not approve the structure plan. Later on, once provinces had a Provincial Spatial Structure Plan, the provincial-executive could equally decide not to approve a municipal spatial structure plan for that reason. And without a structure plan, municipalities could not make implementation plans and were obliged to seek approval from the regional level for the granting of permits. If this had not been the case, the structure plan for Flanders would never have been able to temper urbanisation. However, ten years later, housing needs studies had disappeared or been forgotten. Then, again, a lot of arbitrary housing expansion areas were addressed.

4.3 Sustainability assessment

4.3.1 Planning and development culture

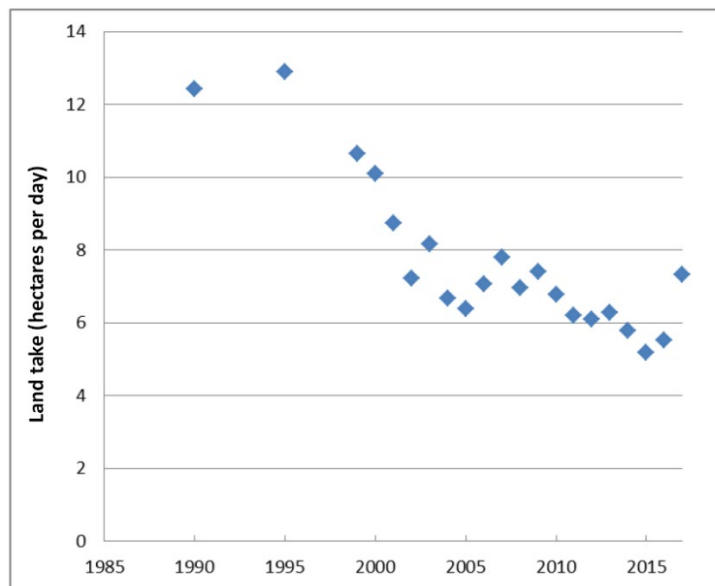
The respondents agree that structure planning - policy makers and politicians agreeing on a long-term vision - accelerated the planning processes. A structure plan gives policymakers a common base on which to take decisions. Moreover, these decisions became legally more secure.

The Spatial Structure Plan Flanders was the result of a strong coalition between planners, academics, civil servants and politicians (Albrechts, 1999). There was an energetic Flemish administration with a very strong drive towards policy planning. The starting point of the plan was subsidiarity, so decisions were made by the smallest, lowest or least centralized competent authority. However, according to respondent 2, subsidiarity in practice led more to discussions about the division of powers, than content.

After approval of the Flemish spatial structure plan in 1997, daily land take got halved, but not stopped (Figure 4.5 and Maps 4.1 to 4.3). Over the last 15 years, this growth rate has fluctuated around 6 ha/day with a minimum of 5.2 ha/day in 2015 and a maximum of 7.8 ha/day in 2007 (Poelmans et al., 2019). Since the daily land still had a huge impact on the quality of the rural landscape in terms of biodiversity, food production, health, environmental quality and water management, the Flemish government decided in 2014 to carry out the so-called *betonstop* (literally: concrete stop) to gradually reduce the land take to zero hectares in 2040 (Ruimte Vlaanderen, 2016). For that it wants to use policy plans instead of structure plans. A spatial policy plan consists of a strategic vision and one or more policy frameworks that together provide the framework for the desired spatial development. Compared to a structure plan, it is more flexible and more aimed at realisation. The strategic vision includes a long-term vision for spatial development, while a policy framework contains medium-term operational policy choices and action programmes for a theme or area. Policy frameworks can be either added or removed over time.

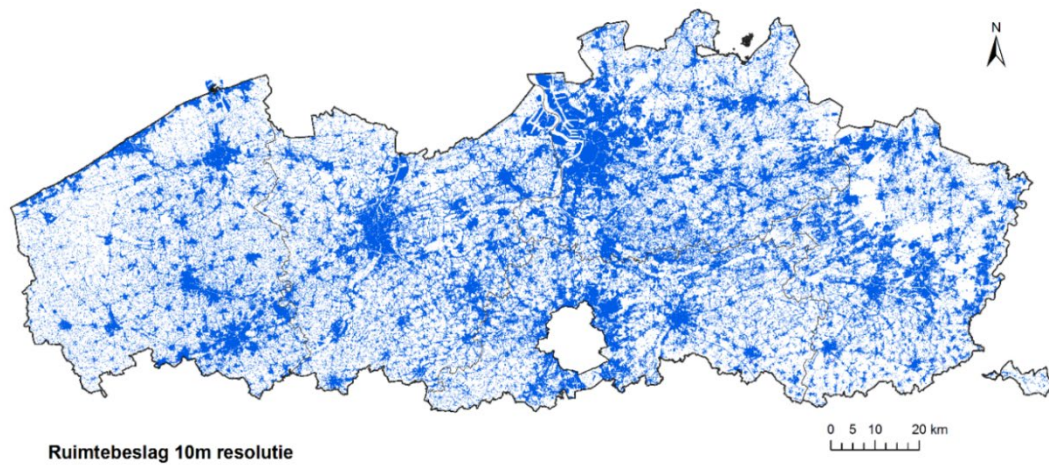
Policy planning has the potential to be a more sufficient instrument than structure planning - being able to respond to sudden environmental, economic or demographic changes -, but then all steps of the implementation process should be completed. The Flemish government announced the *betonstop* through a strategic vision, but did not yet approve the necessary policy framework and legislation that support that ambition. As a result, project developers and land owners felt the need to develop their land as soon as possible. Today, daily land take in Flanders is no less than 7.3 ha/day (Ysebaert, 2018). Based on the idea that local authorities know best how to deal with land take, the Flemish government decentralised the tools to stop it in 2014 (Flemish government, 2014). Since the changes to the codex in 2014, a municipal or provincial spatial implementation plan no longer has to be approved by the province or the Flemish government respectively. Respondent 14 claimed structure planning has taken a too extreme interpretation of the rule of subsidiarity. Now the region has little possibility to adjust local government's policy when it comes to strategic planning or the granting of building permits.

Figure 4.5: Growth of land take in ha/day



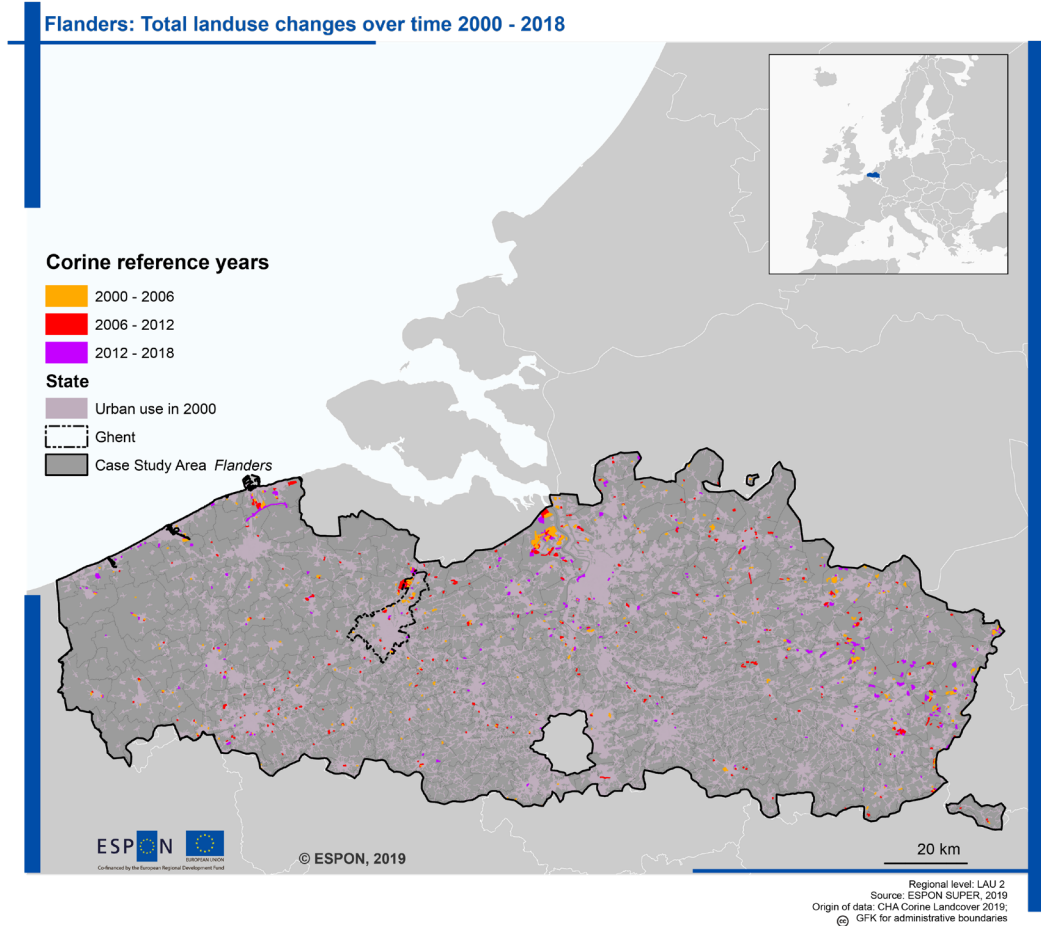
Source: Poelmans et al. (2019)

Map 4.1: Settlement area of Flanders in 2016

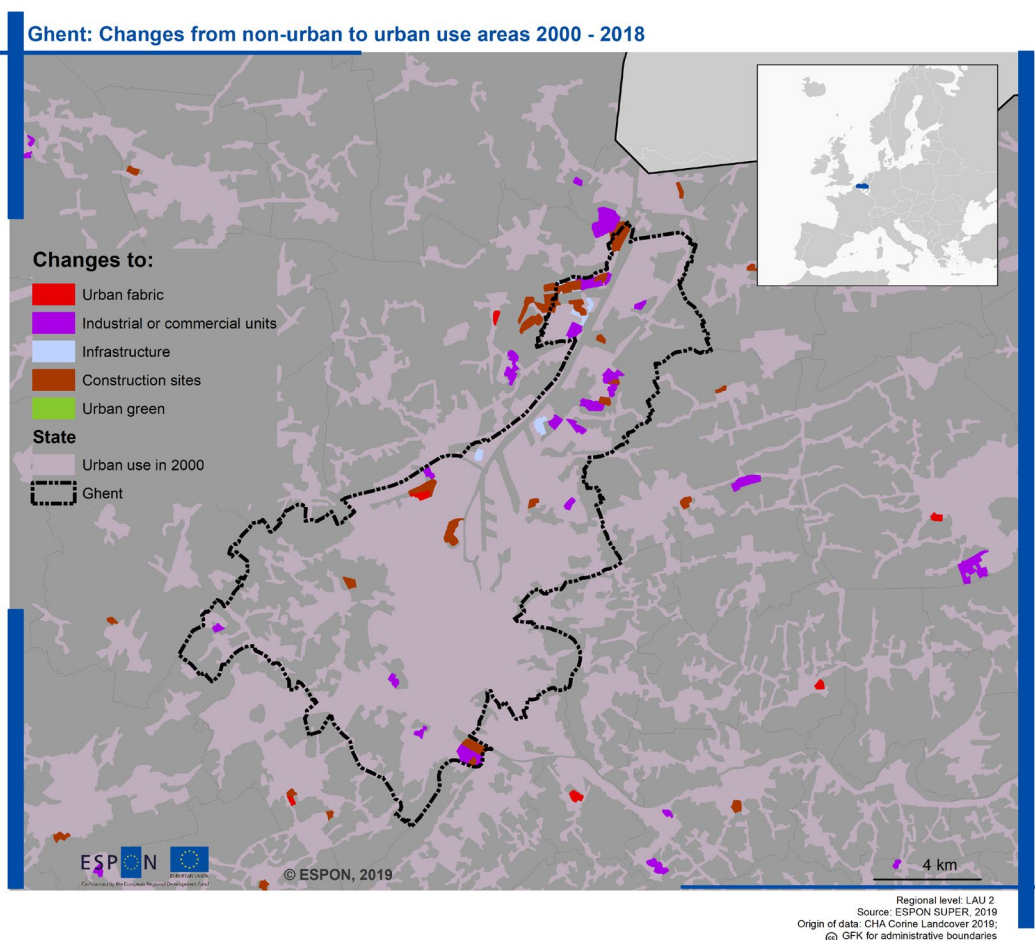


Source: Poelmans et al. (2019)

Map 4.2: Total land use changes over time (2000-2018)



Map 4.3: Metropolitan area of Ghent: Changes from non-urban to urban use areas (2000-2018)



Upon approval of the planning decree of 1996, the province was regarded as an advising expert for both the municipalities and the region. The decree of 1996 introduced the province as a new stakeholder in an intermediary level for spatial planning. The province of East Flanders therefore approved its structure plan in 2004. From then on, it has been responsible for the supra-local planning projects which could not be handled on a regional level.

In Ghent, the Spatial Development Structure (*Ruimtelijke Ontwikkelingsstructuur*, ROS) of 1993 (the previous strategic plan), was fully designated and implemented by the municipal urban planning department. The drawing up and implementation of the 2003 structure plan of Ghent, in contrast, involved very intensive collaboration between the departments of urban planning, green, mobility and economy, but also social and private sectors were part of the team. According to stakeholder 6, this was a structural improvement in the cooperation between Ghent city services and private stakeholders. In addition, the structure plan led to better coordination with the surrounding municipalities, the province and the region and more and better participation with local residents. For instance, since the spatial structure plan had set out a desired green and nature structure with ambitious objectives, but never went into detail, the green space department started to make it concrete in a green structure plan in

2014. The policy plan 'Space for Ghent' (Stad Gent, 2018), the new spatial strategic/structural policy plan, followed the example of its predecessor by again embedding in the objectives of all different departments and services.

4.3.2 Economy

In general, it is very difficult to attribute economic effects, be they positive or negative, entirely to structure planning. Many other interventions and demographic developments need to be taken into account as well.

According to the respondents, among the positive effects were the fact that proposals from project developers shifted to the urban area. The Spatial Structure Plan Flanders (Ruimte Vlaanderen, 1997) created a sufficient supply of business parks in urban areas. People returned to the city and started investing in it again. Project developers also benefited from the structure plan because a great deal of land has been redeveloped under the influence of the delineation of urban areas.

At a local level, the practice of developing greenfields shifted to the regeneration of deprived areas. Moreover, the Spatial Structure Plan of Ghent (Studiegroep Omgeving & Stad Gent, 2003) helped to create a strong policy to prevent companies from leaving the city, supported by the delineation of the metropolitan area (an implementation plan done by the regional level) with a lot of attention to providing space for economic improvement. In the inner city, commercial buildings were converted into housing. For some areas, Ghent had to wait for Flanders' infrastructure works, which took more time than expected.

Negative effects that were mentioned, were that the enormous amount of hectares of designated business parks led to a very extensive use of space. There was such a large supply, and the land became so cheap, that now there are large plots of land only half occupied.

Six out of eight respondents regarded these effects as structural. The other two found that structure planning only had a temporary influence on spatial policy, because structure plans have become "forgotten documents without any impact anymore". Respondent 6 mentioned gentrification as a side effect of a number of urban developments.

4.3.3 Ecology

Thanks to the Spatial Structure Plan Flanders (Ruimte Vlaanderen, 1997), the Flemish ecological network is being delineated by Regional Spatial Implementation Plans since 2003. The Flemish Ecological Network (VEN) is the entirety of areas with a current or potential high nature value in which a specific nature conservation policy is pursued. It spreads like a patchwork over Flanders and consists of large units of nature and nature under development. In its turn, the designation of the VEN kicked off the design of the 'sigma plan': a project of the

Flemish government consisting of several sub-projects to reduce the risk of flooding around river the Scheldt and its tributaries. In 2030 the last plans of the Sigma Plan should be completed and the Scheldt and its tributaries should be climate-proof until the year 2100.

The structure plan of Flanders contributed enormously to the greening of cities by initiating the design of implementation plans on green poles and larger open spaces. The four large green poles around Ghent, which are connected by green axes throughout the city by water, partly owe their existence to this plan. In many delineation processes, the development of urban green areas was the core. Among the positive effects, a lot of nature investments were made after approval of the Municipal Spatial Structure Plan Ghent (Studiegroep Omgeving & Stad Gent, 2003). Environmental organisations gained influence in the land-use decision-making. Moreover, less open space has been built on, due to the regeneration of deprived areas. Considering mobility, the focus on public transport reduced car traffic. Another one of the clear objectives of the structure plan of Ghent was the standstill principle: the local government made an agreement that no valuable nature could disappear unless it is compensated for. As a result, a great deal of nature has been saved. Ghent's structure plan has raised the level of ambition.

What has been negative, is that according to some respondents, the delineation of urban areas was too broad, enabling unnecessary land take. Moreover, since in practice, the structure plan of Flanders could not do anything about the existing regional land use plans (*gewestplannen*) directly – since this can only be done through spatial implementation plans - the amount of space taken up after the structure plan still is enormous. According to respondent 2, the structure plan of Flanders had rightly put the delineation of nature and forest as one of its main goals, but misjudged how difficult it would be.

In Ghent, the spatial planning department soon ran into the standstill principle, because there was no clear picture for their territory of where valuable nature lies in the city and how they could protect it if it were located in residential or industrial areas. Following on from this, a green structure plan was drawn up in 2014. The green structure plan is a refinement of the Ghent's spatial structure plan in terms of green infrastructure. One of its main objectives is that every inhabitant of Ghent will be able to find a park of at least 1 hectare 400 metres from their home. To this end, it identifies places where there is a need for parks and a spatial implementation plan must be drawn up to realise this.

Despite the city's efforts to protect nature, respondent 14 (civil environment association) said he still often needed to fight against development projects which are not consistent with or even contrary to the long-term vision set out in the structure plan. "If they were to continue, it would be detrimental to the environment." Moreover, due to the strong development of the city, nature sometimes had to make way for new housing. Compensation had to be paid for this, but due to the slow purchase and development of nature, this compensation, and therefore the status quo, did not always succeed.

Five respondents considered these developments as structural. The Flemish ecological network was established and embedded in policy.

4.3.4 Equity

Structure plans, especially at the provincial and regional level, did not make decisive policy decisions on equity. Moreover, it is very difficult to attribute social effects, be they positive or negative, entirely to structure planning. There was a discussion about whether it is possible that the structure plan for Flanders led to a scarcity of building land, and, in turn, an increase in house prices, but the majority of respondents do not believe that this can be attributed to the structure plan. This is mostly because of economic development, real estate logic, additional performance requirements in terms of energy efficiency, etc.

Considering the positive effects, the structure plan of Ghent aimed to increase the liveability of neighbourhoods, both in terms of traffic and in terms of quality of life. It proposed concrete targets for social housing in terms of quality, rather than quantity. Nevertheless, property developers were obliged to provide space for social housing. On the other hand, social housing companies with large plots of land had to allow private housing too. Many deprived 19th century neighbourhoods were upgraded. A positive mentioned aspect was the interweavement of socio-economic classes and functions. In Ghent, income groups today are much more mixed than 20 years ago. Many younger dual income households have come to live in the city. However, it would not be correct to attribute this entirely to the structure plan.

Negative effects that were mentioned, included that the structure plan of Ghent did not foresee gentrification. Moreover, a large number of people had to be expropriated in order to provide open space in dense and deprived neighbourhoods. Finally, there still is a great lack of affordable and/or social housing. The spatial structure plan has not changed that.

Four of the respondents considered these changes as structural, two as temporarily.

4.3.5 Balance

Considering economy and equity, no respondents considered the balance - in terms of positive and negative effects - to be negative. There was one respondent that considered the balance to be neutral, since there has not been a study to confirm if the effects – be they positive or negative - can be fully attributed to the structure plan.

Considering ecology, six respondents considered the balance to be positive. “Without the structure plan, probably a lot more nature would have disappeared in Ghent”, claimed respondent 7. Respondent 2 was more critical, saying that since structure planning does not have a say in land use plans and planning permission, the amount of land take after approval remained too high. “The structure plan was positive in words, but in practice it hardly meant anything.”

4.3.6 Multi-stakeholder assessment conclusions

The most important question as regards the success of the intervention is whether it changed Flemish urbanization practices in a more sustainable way. Overall, the intervention was perceived both as a success and a failure. Both will be discussed respectively.

Considering the successes, Respondents 1, 6 and 14 argued that structure planning halted uncontrolled land take. They argued that the 60-40 ratio (60% of housing in the city and 40% outside) and the allocation of additional housing in a selection of centres - the 13 customised delineation processes of urban areas with a density of at least 25 houses per hectare - slowed down suburbanisation and cut daily land take in half: from 12 ha/day to 6 ha/day. Respondent 2, however, claimed this is due to demographic and economic changes in society, not the structure plans. Another mentioned innovation is that thanks to structure planning, citizen's access to decision-making has improved. According to respondent 14, there is now more and better participation.

The fact that politicians were involved in the narrative for structure planning, implied that in the implementation of the structure plan for Flanders, stricter regulations on land take were voted on as well. In 1997, the Flemish government sent out a very innovative guideline to all municipalities: the housing needs study (Belgisch Staatsblad, 12 April 1997). Respondent 2 says that, if this would have not been obliged, the structure plan for Flanders would have never been able to slow down the extensive sub-urbanisation of 12 ha/day to 6 ha/day. However, this change in planning practice has turned out to be temporary. In 2002, the Flemish Government replaced its guideline with another, much more flexible directive stating that, in order to speed up the results of Flanders' structure plan in the field and to effectively implement a specific housing supply policy, the development of a housing expansion area can be decided on without the need for a housing needs study (Belgisch Staatsblad, 30 November 2002).

In Ghent, the spatial structure plan helped regenerate deprived post-war neighbourhoods, provided urban forests around the city – which today would be impossible because of the increased importance of private interests – and the development of stations as economic hubs. As mentioned, Ghent was one of the first cities in Flanders to make the link between its structure plan and climate change. For the structure plan, a 'working group climate' was established. This working group soon became an autonomous body that picked up the ideas out of the structure plan and presented them in a completely different storyline about climate, the warming up of the city and the attention for green space and mobility. This also created a strong collaboration between the department of urban planning and the department of environment.

On a provincial level, the structure plan made water assessments obligatory, connect nature areas on a supra-municipal scale, spatial visions for the future of Steenwegen or Chaussee (=

early, national, rural highways, as opposed to the traditional, unpaved country roads) and set in motion the preparation of implementation plans to achieve more soft (in terms of nature and forest) land use destinations.

Considering the failures, respondents 1, 2, 5 and 14 remarked that structure planning initially got no link with land use regulations and licensing policy. In other words, it is still the regional land use plans from 50 years ago that determine what Flanders looks like, unless an implementation plan get approved at the relevant policy level. The structure plan therefore provides a direction, a long-term vision, to which implementation plans - which can change land use destinations - must conform. Although municipalities are only allowed to deviate from the vision in the structure plan in a motivated manner, it happens on a regular basis. Moreover, less than three years after the approval of the Spatial Structure Plan Flanders (Ruimte Vlaanderen, 1997), all kinds of derogation rules and escape clauses have been introduced in the legislation. As a result, permits can now be issued in departure from the long-term vision. That is the mistake in which policy planning now also threatens to take place. "There is an enormous gap between the creation of a vision and the formulation of major concepts on the one hand and the effective realisation of these by implementing changes in those destinations on the other. This is mainly in favour of private and electoral interests", says respondent 2. Hence, the objective of keeping 60% of dwellings in the city and 40% outside has not entirely succeeded.

The Spatial Structure Plan Flanders defined the urban growth boundaries far too broadly (which were further detailed by implementation plans). According to the structure plan of Flanders, approximately half of the municipalities in Flanders belong to an "urban area"; in reality, this is not the case. The densities imposed by the structure plan were fairly low: a minimum of 25 houses per hectare in urban areas and 15 in outlying areas. And even then, those densities are guidelines of which could be deviated on a motivated manner. The structure plan of Flanders thus failed to counter ribbon development and urbanisation of rural areas.

Stakeholder 6 perceived structure planning to be too much a way of systemic thinking and missed a methodological approach. Together with experts, they looked at every facet of space: nature works this way, living works this way, ... The new planning policy concept is based more on the living environment of people. Respondent 5 mentioned that there was too little monitoring of what had to be done to implement the structure plan in a proper way, which meant that the impact on land take could have been a lot bigger.

The fact that the Flemish ecological network has still not been fully established is another failure to respondent 2. 20 years after the date, 2,000 hectares of forest have been expanded, but that is far off the target of 18,000 hectares. This is because a part of Flanders has taken on this task and wanted to do so on a regional level, but they do not have the necessary knowledge of the terrain.

For housing 227,500 hectares were provided by the regional zoning plans and this has not been reduced by the structure plan of Flanders. Respondent 5 says that, had they done so (by setting objectives and initiating spatial implementation plans), the construction, development and real estate sectors would have protested and blocked the plan entirely. The structure plan of Flanders took proportional growth as its point of departure: large cores could grow more than smaller cores. On the other hand, it could also have been said that if a small core was not well located, it should not be allowed to grow at all. The mayor of the municipality in questions would have done everything in his power to prevent that. Now local authorities realize more that a lot of benefits lies in tourism and recreation, rather than in constructing business parks or new housing estates.

Another drawback of structure planning is that its language - a technical jargon – was too specific for citizens to understand. Even from mayors, stakeholder 5 got calls asking what to do with the structure plan that the local government had already approved the day before.

Respondent 6 perceived the structure plan for Ghent to be too rigid: it makes too little systemically possible for social developments. For instance, the housing needs study for Ghent underestimated the effect of migration. In recent years, Ghent has seen an enormous influx of residents. Hence, the plan has become outdated. Climate, working, all these new themes today are issues that were not considered in the structure plan of Ghent. Moreover, due to its dependence on the regional level, not all plans in terms of nature and mobility have been properly implemented. Not all four urban forests in Ghent have been finished, only one of the two stations is being developed as an economic hub, the plans for a couple of hazardous road junctions and public transport did not work out well and halting the development of out-of-town shopping centres has failed.

During the preparation of the structure plan of Ghent, partly due to the fact that at the same time the delineation of the metropolitan area process was running through Flanders, there was actually quite a good interaction between Ghent and its suburbs. But that was actually only during the planning phase. Once the plan had been drawn up and approved, this dimension was not developed further.

4.4 Conclusions

A new planning tool was needed to respond to challenges for which the used planning tools were too centralistic and static: people fled the city en masse in search of greenery and clean air for their children. While there was a need for at least 400,000 additional homes, the dispersion of habitation and facilities was causing an excess of traffic jams and a demolition of green and open space.

Structure planning can be the right instrument to establish a long-term vision - across legislatures - without losing all the flexibility to respond to unexpected developments. A condition, however, is that the vision from the structure plan is given legal force to grant or

refuse permission. Although municipalities can take the desired development into account, this does not yet seem to have been adopted in practice. Flemish municipalities are often small and do not have an urban planning department with sufficient decisiveness to cope with project developers and other powerful stakeholders. The practice of political/constituency service - where citizens expect politicians to help them with minor problems (such as a building permit) if they want to be re-elected - does not help either. In addition, for many municipalities it is unaffordable to give all residential areas and residential expansion areas in their municipality an open space destination, and all too often municipal councils still think that they have to attract new residents in order to survive financially.

Given that in Flanders the regional zoning plans had already been laid down and approved between 1976 and 1980, structure planning turned out not to be a total success story. The Spatial Structure Plan for Flanders of 1997 was the first attempt to put an end to unbridled land take by defining the contours of urban areas and allocating new building quotas to them, in order to be able to focus on densification and environmental objectives. It obliged municipalities to draw up a housing needs study before taking up open space again and ensured a sufficient supply of qualitative housing and workplaces in cities. That way, it helped slowing down suburbanisation by cutting daily land take in half (from 12 ha/day to 6 ha/day), but did not stop it. The effectiveness of this plan is hampered by the fact that 227.500 ha was already designated as a residential area. Since structure planning cannot change a land use destination and no permits can be granted or refused on the basis of a spatial structure plan, it did not have enough legal force to change that. What it can do, is provide guidelines for spatial implementation plans which, in turn, can change a land use destination and have a legal basis for permits. However, in view of the many political, personal and private interests involved, it has proved difficult to have the implementation plan fully correspond with the vision from the structure plan. Moreover, the Flemish government extended the possibilities to change the use of constructions to a use they are not allocated for in the zoning plans. Hence, despite all the good intentions of structure planning and right now policy planning, it are still the regional land use plans from 50 years ago that mostly determine what Flanders looks like.

As municipalities quickly realised that, unlike structure plans, implementation plans can make a real difference on the ground, the motivation for structure planning quickly diminished. Some municipalities completed their structure plan because it was compulsory (without a structure plan, municipalities could not make implementation plans and were obliged to seek approval from the regional level for the granting of permits), but not because they wanted to do so themselves. Hence, structure plans too often became thick, sometimes uninspiring and standardized books. The binding part rarely became a strategic programme and was often no more than a list of spatial implementation plans to be drawn up. The power of the instrument and the dynamic character of the planning process in response to the final state planning were diluted by ignoring the importance of continuity in the process, of evaluations and necessary adjustments. Structure planning became a story of competences and figures.

However, more important than the documents drawn up in the spirit of structure planning, is the enthusing process that preceded it. It contributed to a growing interest in sustainable and economical use of space and to a coherent approach based on spatial structures, which were reflected in other policy areas at all policy levels. On a local level, the planning process - with working groups, participation meetings, action groups, public inquiries and municipal council decisions - meant that decisions on e.g. football pitches or local business parks only came after a large group of people had thought about the spatial impact and quality. Moreover, structure planning made local and regional levels work together on more sustainable urbanisation. The spatial structure plan of Ghent (by the local administration) was made simultaneously and in interaction with the demarcation of the metropolitan area of Ghent (by the regional administration). Because of this, the municipal structure plan was not only made for the city within its administrative borders, but for the functional region cross-bordering with its neighbouring municipalities.

Since the daily land take of six hectares in Flanders still had a huge impact on the quality of the rural landscape in terms of biodiversity, food production, health, environmental quality and water management, the Flemish government decided in 2014 to carry out the so-called *betonstop* (literally: concrete stop) to gradually reduce the land take to zero hectares in 2040. For that it wants to use policy plans instead of structure plans. A spatial policy plan consists of a strategic vision and one or more policy frameworks that together provide the framework for the desired spatial development. Compared to a structure plan, it is more flexible and more aimed at realisation. It has potential to be a more sufficient instrument than structure planning - being able to respond to sudden environmental, economic or demographic changes -, but then all steps of the implementation process should be completed. The Flemish government announced the *betonstop* through a strategic vision, but did not yet approve the necessary policy framework and legislation that support that ambition. As a result, project developers and land owners felt the need to develop their land as soon as possible. Today, daily land take in Flanders is no less than 7.3 ha/day.

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?

A structure plan is sustainable in the sense that it establishes a long-term vision across legislatures and steers land use changes (through Spatial Implementation Plans) to more sustainable structures. The Spatial Structure Plan Flanders defined a 60-40 ratio (60% of housing in the city and 40% outside. Structure plans are implemented through municipal, provincial or regional Spatial Implementation Plans according to the principle of subsidiarity. These allow for land use changes and further detailing of the regional zoning plans. At regional level, the implementation plans mainly consisted of the delineation of the metropolitan, regional urban, agricultural and natural areas/structures. The provincial level, on the other hand, took care of the delineation of small-town areas. The cities and municipalities, for their part, mainly took care of the delineation of green structures and business parks at local level. That way it has slowed down suburbanisation and cut daily land take in half: from 12 ha/day to 6 ha/day.

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

Structure planning has three tracks: the long-term vision, the short-term vision and challenges via land use and management plans and communication, creating support among the population. These three tracks are in constant interaction with each other. The structure plan reflects a long-term vision from which very concrete implementation plans can be drawn up for the short term, in function of projects and in function of challenges. The Spatial Structure Plan Flanders of 1997 is for the first time a long-term vision of the spatial development for Flanders. At that time the intention was to apply the structure plan of Flanders until 2007, but it still applies today.

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

They were almost entirely avoided, since structure plans mostly are undetailed strategic plans. The trade-off discussions were done when municipal, provincial or regional Spatial Implementation Plans were designed, according to the principle of subsidiarity.

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

Yes. The Flemish government intends to safeguard the remaining open space, but for Flemish municipal authorities, financially (in short term) it is more interesting to parcell out land. It gives them both a fiscal and electoral added value and a strong competitive position in relation to neighbouring municipalities.

To what extent is there a correlation between urban form (e.g. high-density contiguous urbanisation versus low-density scattered development) and sustainability?

Densified living not only preserves free space but also offers many other advantages: (1) infrastructure (roads, utility lines, street lighting) is used more efficiently, (2) public transport is used more intensively, (3) less car traffic is needed thanks to the presence of schools, shops, employment, sports facilities and other facilities, and (4) burglars are more quickly deterred.

How much impact did various interventions have in producing sustainable urbanisation and land-use outcomes?

After adopting the planning instrument of structure planning in 1997, daily land take got halved, but not stopped. Over the last 15 years, this growth rate has fluctuated around 6 ha/day with a minimum of 5.2 ha/day in 2015 and a maximum of 7.8 ha/day in 2007.

To what extent were place-based approaches and territorial cooperation responsible?

Place-based approaches mainly come into practice when spatial implementation plans need to be made, because it directly changes a land use destination (in line with a structure plan). Territorial cooperation is more common in structure planning.

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

Financial, fiscal and economic mechanisms mostly seem to be the mechanisms that block the long-term vision of a structure plan.

Structure planning in the first place considers ecological, than economic dimensions. However, governments may deviate from the guiding part when taking decisions for urgent social, economic or budgetary reasons. In addition, local governments want to safeguard the remaining open space of their municipality, but that often does not outweigh the (short term) fiscal advantages of parcelling out land.

How sustainable are the measures themselves over time?

That depends on the authority's means for the future. As municipalities quickly realised that, unlike structure plans, implementation plans can make a real difference on the ground, the motivation for structure planning quickly diminished. Some municipalities completed their structure plan because it was compulsory (without a structure plan, municipalities could not make implementation plans and were obliged to seek approval from the regional level for the granting of permits), but not because they wanted to do so themselves.

Do they produce economic benefits?

You could say so, but it is very difficult to attribute economic effects entirely to structure planning. Many other interventions and demographic developments need to be taken into account as well.

According to the respondents, among the positive effects were the fact that proposals from project developers shifted to the urban area. The Spatial Structure Plan Flanders created a sufficient supply of business parks in urban areas. People returned to the city and started investing in it again. Project developers also benefited from the structure plan because a great deal of land has been redeveloped under the influence of the delineation of urban areas.

At a local level, the practice of developing greenfields shifted to the regeneration of deprived areas. Moreover, the Spatial Structure Plan of Ghent helped to create a strong policy to prevent companies from leaving the city, supported by the delineation of the metropolitan area (an implementation plan done by the regional level) with a lot of attention to providing space for economic improvement. In the inner city, commercial buildings were converted into housing. For some areas, Ghent had to wait for Flanders' infrastructure works, which took more time than expected.

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

The technical jargon was also often incomprehensible to citizens, local policymakers and politicians. Numerous appeals have been submitted for structure plans, but the main concern was whether they would be able to turn farming land into building land. They did not realize a structure plan is mostly a non-binding strategic vision, not a binding land use plan. Once stakeholders realised that, the support grew.

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

If a government wants to stop urban sprawl, it will not succeed with only structure or policy plans, circulars and a soft approach. What works best, is changing the land use destination, but that costs money to the landowner.

How can the impacts of land take/soil sealing be limited?

Structure planning can be part of the solution, but then it would be better if it has a direct link to licensing policy. In addition, the Flemish government could reintroduce the compulsory housing needs study, so that municipalities first have to prove that they actually need the extra housing before the development takes place, and remove a couple of decrees that undermine the long-term vision. Moreover, authorities can introduce a desired future policy development (beleidsmatig gewenste ontwikkeling) and/or an ordinance in order to tighten the conditions and therefore limit the impact of land take/soil sealing.

How can we benefit economically from measures to limit land take/soil sealing?

A study by Stec Groep (2018), by order of the Flemish government, has calculated that a strict and direct betonstop (concrete stop, a direct stop of land take in Flanders) could save 1.7 billion euros annually. After all, suburbanisation causes traffic jams, high energy costs, CO2 emissions, floods, lack of green space and high costs for the construction and maintenance of roads and utility lines.

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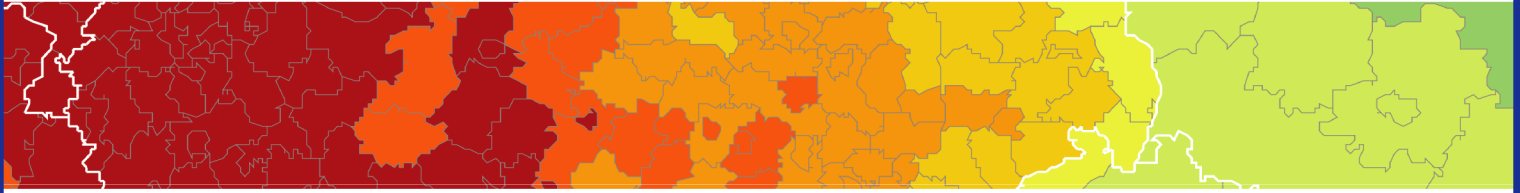
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