

CHAPTER III.

Belgian Coastal Urban Environments: Reading Human Mobility Processes in a Spatial Framework

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1. Introduction

In this chapter, urbanization and mobility aspects of the two Belgian case studies are reviewed and analysed. They are the Brugge Study Area (SA) with 9 communes (4 in the Ring and 5 in the Core) and Oostende SA with 5 communes (2 in the Ring and 3 in the Core). The SAs are defined using criteria describing human mobility (migration and commuting) and urbanisation processes (describing the spatial extension of urban features and other related demographical characteristics).

The two study areas lie next to each other in the coastal front of Belgium, occupying around a half of the total Belgian coastline. According to an official delineation of the Belgian Coastal Zone, most of these two study areas lie within the coastal zone.

The main objective of this review is to identify urbanisation and human mobility patterns in the case studies based on their development trends in the last decade. In both case studies, it is presumed that urbanisation and human mobility have evolved hand in hand and together play a crucial role in shaping the transformations happening in their respective urban centres.

By analysing functional urban regions through urbanisation processes and human mobility, it is hoped that different issues relating to those processes can be discerned. The intention behind discerning these issues is to facilitate the identification of conflicts that will be the focus of further work in the framework of the SECOA project.

In this chapter, diverse forms of human mobility are taken into account, which differ in terms of scale (local to the global) as well as in terms of temporality (or time frames). These different types of mobility are seen as the source of potential conflicts over resources.

In our reading of the human mobility processes within the specifically defined spatial framework, we observe three-fold phenomena characterised by land-use change, temporary mobility and tourism that structured urban development.

Land-use changes show both extensification and intensification. While extensification describes the process where new buildings are filling up on previously open spaces, intensification describes the process where there are shifts in land-use in existing developed areas. Extensification can occur either through urban spread into new areas (new buildings at the outer margins of the city) or through infilling within the already largely built up areas. Intensification can occur either by shifts between residential and economic/commercial land uses or via redevelopment leading to an increase in the average heights/stories of buildings.

The effects of temporary mobility such as home-work travel are analysed through the framework of functional regions based on travel to work areas. The home-work travel pattern helps define urban cores and rings with the understanding that the urban core is a dense nucleus of jobs and attracts work-related commuting from within this zone and from its ring. Home-work travel therefore gives an insight into employment patterns and relations between the core and the ring of an urban area.

Tourism-related mobility includes daily, seasonal and regular tourism activities and is differentiated between the core and the ring. This chapter considers data on the numbers of tourists and overnight stays as well as the peak numbers of day visitors.

2. Materials and Methodology

2.1 Sources and data

This chapter draws mostly on the quantitative analysis of secondary data. Where data are not available, a qualitative evaluation was made based on the literature. Data from multiple sources are used. The most notable is the statistical data provided by the West-Flanders Province online database 'Lokale Statistieke' – Local Statistics (http://aps.vlaanderen.be/lokaal/lokale_statistieken.htm). Tourism data was gathered from publications by the West-Flanders Province Tourism Office (Westtoer). Another source for data was annual reports from individual communes in the study areas during the period 2000 – 2009.

Lokale Statistieke provides the most standardised data for all communes covered by this study. The communes' annual reports were used when specific data are not available elsewhere as they vary substantially in their manner of reporting.

2.2 Methods

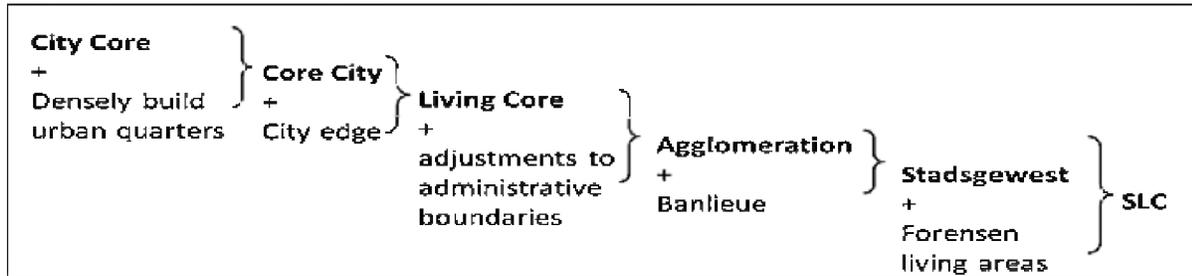
The main method used is quantitative assessment based on secondary data. Maps were produced using ArcGIS with data from various sources. Basic map data (boundaries of statistical units, communes and provinces) come from the 2001Census provided by the Federal Statistical Office.

2.3 Defining the study areas

SECOA aims to study the ways in which human mobility shapes urbanisation in different metropolitan areas in Europe and Asia. This necessitates the definition of a spatial framework for the organization of data collection and analysis. Accordingly, a framework is defined that is comprised of three zones:

- The *metropolitan core* that can be seen as the administrative area of the metropolitan area. The largest numbers of jobs are also generated in this area. Minimum employment numbers are used to decide whether or not to allocate a sub-area to the core.
- The surrounding *outer metropolitan ring* is functionally linked to the core. The boundaries for this ring are defined by journey to work flows in the first part. The ring should be constituted of those areas where at least 15% of the workforce travels from the area to the core. Additional information can come from other functional linkages e.g. transport flows, migration flows.
- Given the nature of this project, a *coastal strip* or *shoreline sub unit* should be defined. This can be statutorily defined, or in terms of a fixed buffer.

Metropolitan areas are usually associated with mega cities that one can find in the United States, India, China, etc. According to Bogart (2006), a typical American twenty-first century metropolitan area has to contain a number of features related to the rate of employment, commuting distance, population density and internal mobility issues. The study areas in the Belgian cases have been defined taking into consideration the above-mentioned characteristics, as well as other methods of demarcation used in Belgium, especially the works of Van der Haegen (et al. 1979; 1996). Based on a national census, the status 'Stadsgewest' [City-region] has been given to regions in Belgium primarily based on employment and commuting data. These regions are made up from several other, cumulative, spatial zones (see for an overview).

Figure 3.1. *Hierarchy of spatial definitions in Belgium**

The centre of a *stadsgewest* is called a 'core city', where most of the administration and governing entities reside. Additionally, a substantial concentration of regional retailing and other services can be found here as well as socio-cultural activities. The outer limits of the *core city* are made up of the *densely build urban quarters*. In a Western-European context, this usually corresponds to the historic inner city and its 19th century expansions. It is a multifunctional area with residential buildings and activities like retail, crafts, schools, hospitals and small-scale industries. Quarters are defined as a part of the *core city* if they reach a score of at least 4/5 for the following criteria:

- Population density at least 50 inhabitants/ha(1 point).
- Number of houses built before 1945 > 30 % (2 points).
- Number of houses smaller than 45 m² > 10 % (1 point).
- Percentage of family houses in regional cities < 85% (1 point)
or Percentage of family houses in big cities < 50 % (1 point).

The *core city* is surrounded by a *city edge*, which is made up from less densely but yet unified, primarily 20th century, buildings. Its main function is residential, but a lot of green spaces remain. The city edge of large cities can contain secondary retail and service centres. These are usually old communes, which have been integrated in the expansion of the city. In this *city edge*, special zones are allocated for industry and traffic.

These limits are visually defined based on aerial photographs. The edge is marked if there are buildings present within 200 meters of the visual edge. This *city edge* also marks the

* Source: adopted from Van der Haegen et al 1979.

end of the *living core* of a *stadsgewest*. To help with data collection, this visual line is adjusted using administrative boundaries. If more than 50% of the inhabitants of a surrounding commune live within the city edge of the *stadsgewest*, then the whole commune is considered part of the *agglomeration*.

Finally, another part functionally linked to the core city is the *banlieue*. It is the outer zone of the city. The population dynamics here are linked to suburbanization fluxes from within the city. Morphologically, the *banlieue* looks rural, but functionally it has an urban character. To be included in the *banlieue* of a *core city*, communes need to correspond to at least 5 of the following criteria:

- The number of inhabitants has grown in the last 20 years.
- The median income of the commune is equal to, or bigger than, the median income of the jurisdiction.
- Migration from the agglomeration as a proportion of total immigration in the commune is at least 40% during the last 10 years.
- OR Emigration to the central city from within the commune accounts for at least 25% of total emigration during the last 10 years.
- At least 25% of the workforce of the commune works in the agglomeration.
- The share of people working in the agglomeration, instead of in the forensen (discussed later), is more than 50%.
- More than 35% of the students of a commune (high school and higher education) follow classes in the agglomeration.
- The share of the built area is more than 20% of the total surface of the commune.
- OR The evolution of the total built upon surface, between 1991 and 2003, was 128% for communes in Wallonia and 130% for Flemish communes.

Stadsgewest is then defined as the *agglomeration* and its corresponding *banlieue*. A *stadsgewest* represents a densification area in the country in terms of population, economic activities and socio-cultural activities. A *stadsgewest* offers considerable job opportunities, for people living both within and beyond its borders. If at least 15% of the active labor force from a commune works in an agglomeration, it is classified as a *forensen* area of that specific *stadsgewest*.

All these *forensen* communes, combined with the *stadsgewest*, are called the 'Stedelijk Leef Complex*' (SLC). These SLCs are comparable with other spatial frameworks used in European and international research e.g. ESPON and GEMACA II (called *Functional Urban Regions*). They all use three focal points in determining boundaries: a morphological viewpoint, a functional one and population density (Van Hecke et al. 2007).

The first assessment and demarcation of *stadsgewest* was undertaken in 1996 when 15 regions were designated as *stadsgewest*. A revision of that status has been carried out in 2007, using the census of 2001, by Van Hecke (et al. 2007). The result disqualifies one area as a *stadsgewest*, gives the status for a region for the first time, and two new regions are created by dividing an old one. At this point, Belgium has 18 areas that have been given the status *stadsgewest*. Both Belgian case studies in the project SECOA (Oostende and Brugge) are *stadsgewest*.

For the SECOA case studies in Belgium we define the metropolitan **core** as being equal to the *stadsgewest* (*agglomeration + banlieue*). The *forensen* communes of the *stadsgewest* make up the metropolitan **ring**.

The Oostende Study Area (SA) includes the following communes (Van Hecke et al. 2007):

- Agglomeration (Core): Oostende and Bredene.
- Banlieue (Core): Oudenburg.
- Forensen (Ring): Gistel and Middelkerke.

For the Brugge Study Area (SA) these include the following communes (Van Hecke et al. 2007):

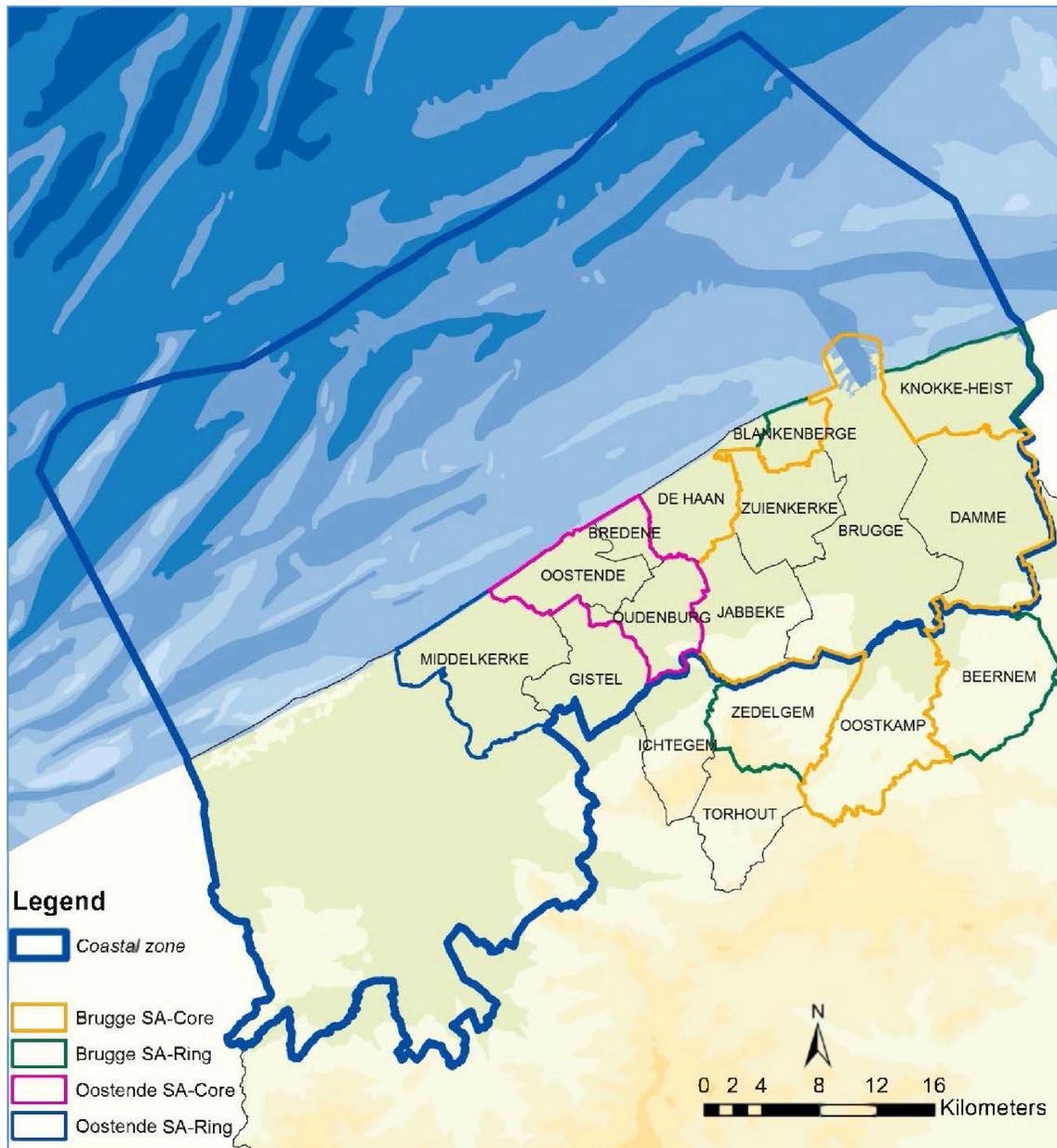
- Agglomeration (Core): Brugge.
- Banlieue (Core): Damme, Jabbeke, Oostkamp and Zuienkerke.
- Forensen (Ring): Beernem, Blankenberge, Knokke-Heist and Zedelgem.

For both case studies, the coastal zone is defined using the statutory coastal zone definition. The whole of the Oostende SA lies within the coastal zone demarcation. Three

* Loosely translated as 'Urban Living Complex'.

communes of the Brugge SA fall outside the coastal zone: Oostkamp, Berneem and Zedelgem (Belpaeme *et al.* 2004).

Figure 3.2. The study areas: Brugge SA and Oostende SA



3. Brugge

3.1 Overview

The first case study in Belgium is Brugge (or Bruges), with a focus on Zeebrugge, a coastal area of the Municipality of Brugge and itself a seaport. Located in the northwest of the country, Brugge is the capital and largest city of the Belgian province of West-Flanders. The historic centre of the city is a UNESCO site, which is located roughly 15 km from the sea and has an area of about 430 ha. The whole city comprises 14 km². In 2009 the city had almost 117,000 inhabitants, with 20,000 residents in the centre. The economic activities of the city are directly linked to its seaport, located in Zeebrugge.

The Brugge study area (SA) comprises the city of Brugge and several of its surrounding communes: Blankenberge, Zuienkerke, Jabbeke, Zedelgem, Oostkamp, Beernem, Damme and Knokke-Heist. This creates a total study area of over 616 km² with a total of over 255,875 inhabitants. The coastline in the study area is roughly 18.5 km long.

In this study area there are numerous sites and important areas, both in terms of the region and the whole of Belgium:

- The centre of Brugge is a UNESCO world heritage. It is an outstanding example of a medieval historic settlement, which has maintained its historic fabric as this has evolved over the centuries, and where original Gothic constructions form part of the town's identity. As one of the commercial and cultural capitals of Europe, Brugge developed cultural links to different parts of the world. It is closely associated with the school of Flemish Primitive painting.
- The historic centre of Damme, the outer port of Brugge developed in the 12th century. Damme historical centre was defended by a star-shaped fortification, which is still visible in aerial pictures.
- The pier of Blankenberge: The pier in Blankenberge is the only pier on the Belgian coast. It was constructed in 1933, and is 350m long.
- The Zwin, a nature reserve with a coastline of 2,3 km, is located across the border between Belgium and Holland, with 125ha being found in Belgium and 33ha in Holland. It is an important RAMSAR site, has unique coastal flora and is a safe haven for a variety of seabirds.

- The port of Zeebrugge: initially, it was a village, dating from the end of the 19th century. At that point there was a small fishing settlement, surrounded by beaches and dunes. Nowadays, Zeebrugge is dwarfed by the enormous manmade harbour, which has been developed there since 1895.

Table 3.1 gives detail on the population by each commune in the study area, divided by age group (West-Vlaanderen, 2008-2010). Population has increased slowly in both the core and the ring of the Brugge SA with the growth in the ring a little higher than in the core – in other words, there is modest relative decentralization. Population growth has been faster during the period 2000-2008 (0.95%) than during the period 1991-1999 (0.86%).

Table 3.1. Population of the Brugge study area at the end of 2008

Commune	0-17 y	18-64 y	65+ y	Total	Density
Berneem	2,924	9,313	2,660	14,897	208
Blankenberge	2,675	11,183	4,789	18,647	1071
Knokke-Heist	4,697	19,543	9,644	33,884	600
Zedelgem	4,552	13,812	3,677	22,041	365
<i>Sub-total Ring zone</i>	<i>14,848</i>	<i>53,851</i>	<i>20,77</i>	<i>89,469</i>	<i>435</i>
Brugge	20,823	71,589	24,274	116,686	843
Damme	2,062	6,749	2,021	10,832	121
Jabbeke	2,876	8,543	2,335	13,754	256
Oostkamp	4,562	13,928	3,848	22,338	280
Zuienkerke	560	1,800	436	2,796	57
<i>Sub-total Core zone</i>	<i>30,323</i>	<i>100,809</i>	<i>32,478</i>	<i>163,61</i>	<i>406</i>
Brugge SA	45,171	154,66	53,248	253,079	415

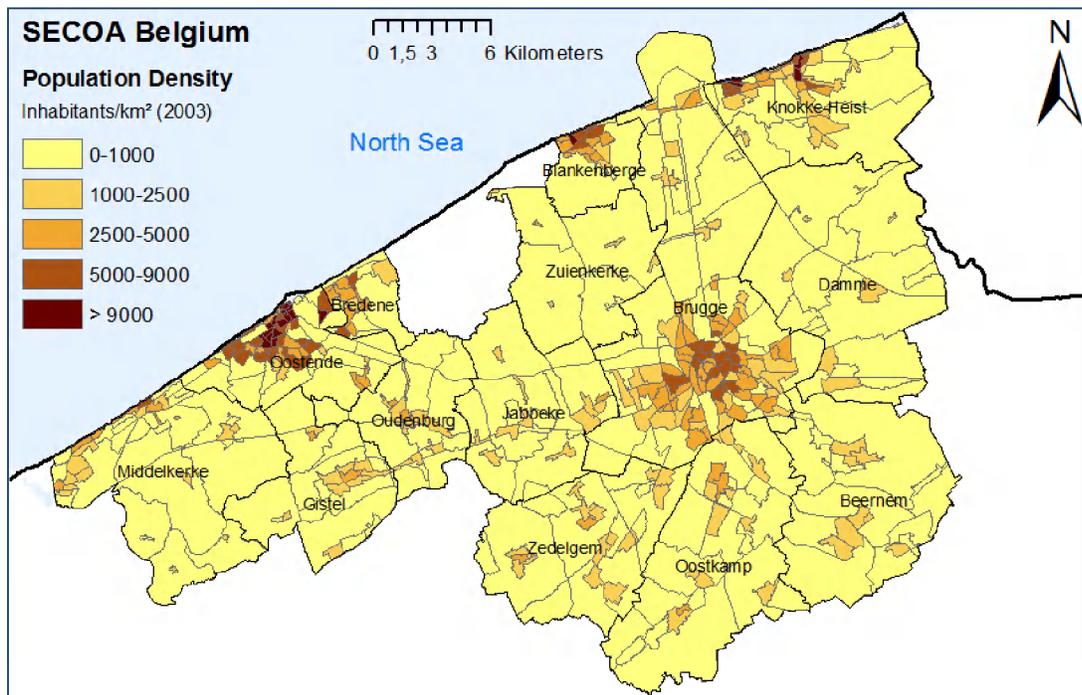
The core area of Brugge SA accommodates two-thirds of the total population of the Study Area. Brugge Municipality (the central core) accounts for 70% of the total population of the core and 45% of the total population of the Study Area.

Table 3.1 shows that the ring has a relatively older population with 23% of its total population being over 65 year-old. Blankenberge and Knokke-Heist have the highest proportions of aged population (26% and 28% respectively). In comparison, 20% of the core population is over 65 year-old, with Brugge having the highest proportion, 21%. In the ring, the proportion of young population (under 17 year-old) is lower than the proportion of older population (over 65) while in the core the situation is reversed.

The average density of the whole study area is 415 persons per square kilometer, with the ring and the core having somewhat similar densities. Brugge Municipality is the most populous area with a density two times higher than the regional average. Brugge Municipality is one of the most populous areas in the Province of West-Flanders (West-Vlaanderen, 2010). Blankenberge (in the ring and directly located by the coastline) is the third most populous commune. Some sections within Brugge have a density of between 5000-9000 people/km². In Blankenberge and Knokke-Heist, there are some sections with densities over 9000 people/km² (Figure 3.3).

In the ring, private household size has decreased steadily from 2.43 in 1992 to 2.2 in 2008. The core has experienced a brief increase in private household size in the period 1992-1993 but subsequently there has been a steady decrease. Nevertheless, private household size in the core is still higher than in the ring. This phenomenon might be linked to the higher proportion of migrants in the core, who disproportionately live in larger household units.

Figure 3.3. Population density in the two Belgian case studies in 2003



Land-use changes in Brugge SA occur slowly. During the period 1997-2007, there were minor reductions in agricultural areas in the ring and minor increases in the core. In both the ring and the core, the area for natural and semi-natural habitats and government offices increased. In contrast, areas for residential, industrial and office uses increased in the ring and decreased in the core. The entire Brugge SA is still dominated by agricultural land (2.2). An explanation on each category of land-uses is given in Annex 1.

Table 3.2. Land-use changes in Brugge SA (data from Lokale Statistieken, 2010)

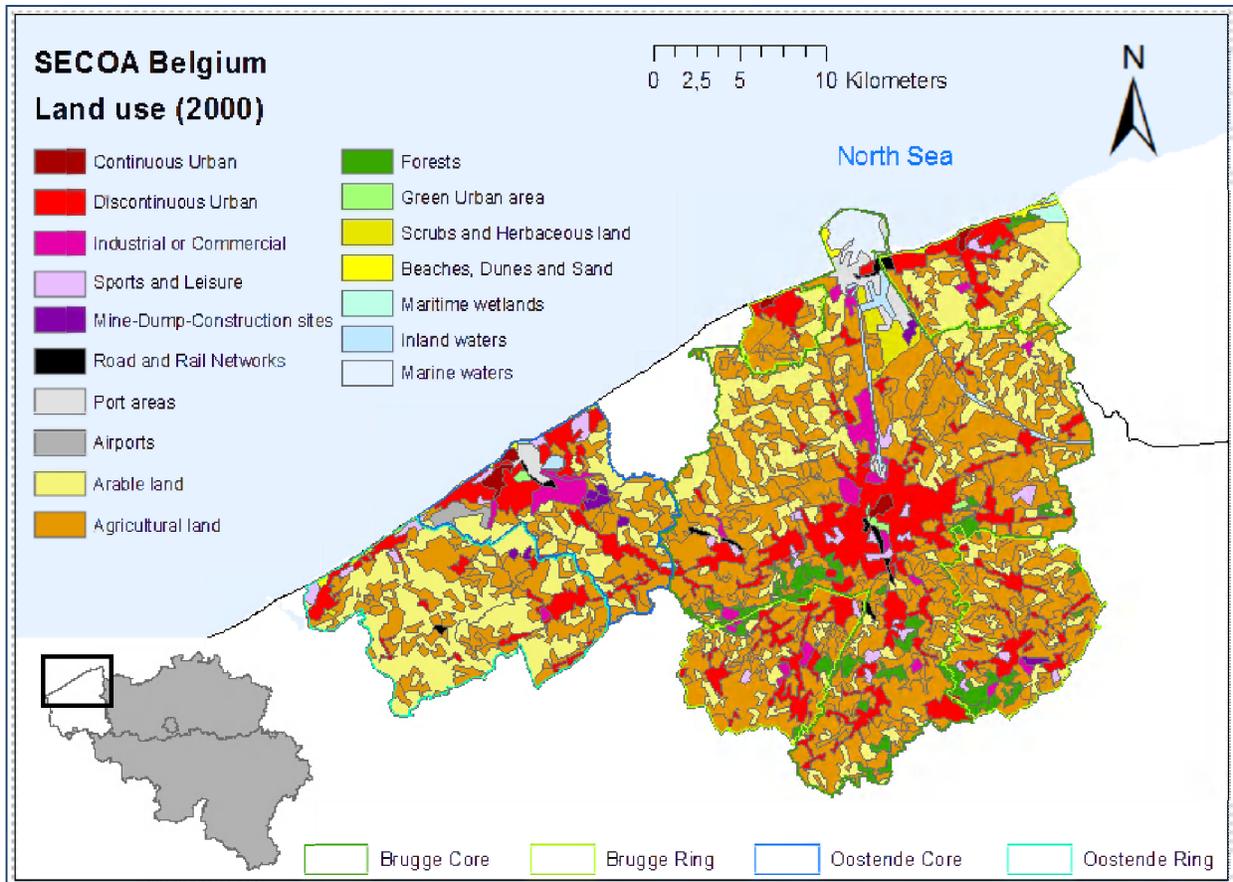
Land-uses categories	Area (ha) in the Ring			Area (ha) in the Core		
	1997	2009	Change 97-09	1997	2009	Change 97-09
Agriculture Area	14,402.66	13,965.84	-3%	26,855.35	25,999.00	-3%
Natural/Semi-natural Area	1,494.60	1,538.98	3%	2,737.70	2,589.83	-5%
Open Space Area	1,838.48	1,824.39	-1%	5,830.90	6,012.10	3%
Residential area	2,072.16	2,367.59	14%	3,804.85	4,358.22	15%
Industrial Area	401.88	510.49	27%	887.58	1,124.72	27%
Commercial Area	118.53	114.20	-4%	256.20	269.30	5%
Office Area	247.16	253.12	2%	487.04	514.36	6%
Government Area	11.13	11.99	8%	159.94	152.01	-5%

The process of extensification can be observed in Brugge SA as follows:

- Urban spread (extension at the outer edge): the expansion of residential and industrial areas occurs both in the ring and the core at broadly similar rates (at the rate of 14% and 27% respectively).
- Infilling (filling-up open space in already build-up areas) processes also occurred in both the ring and the core, though at a very slow pace. Open spaces and commercial areas (areas for shops, kiosks, etc.) were reduced in the ring and increased in the core.

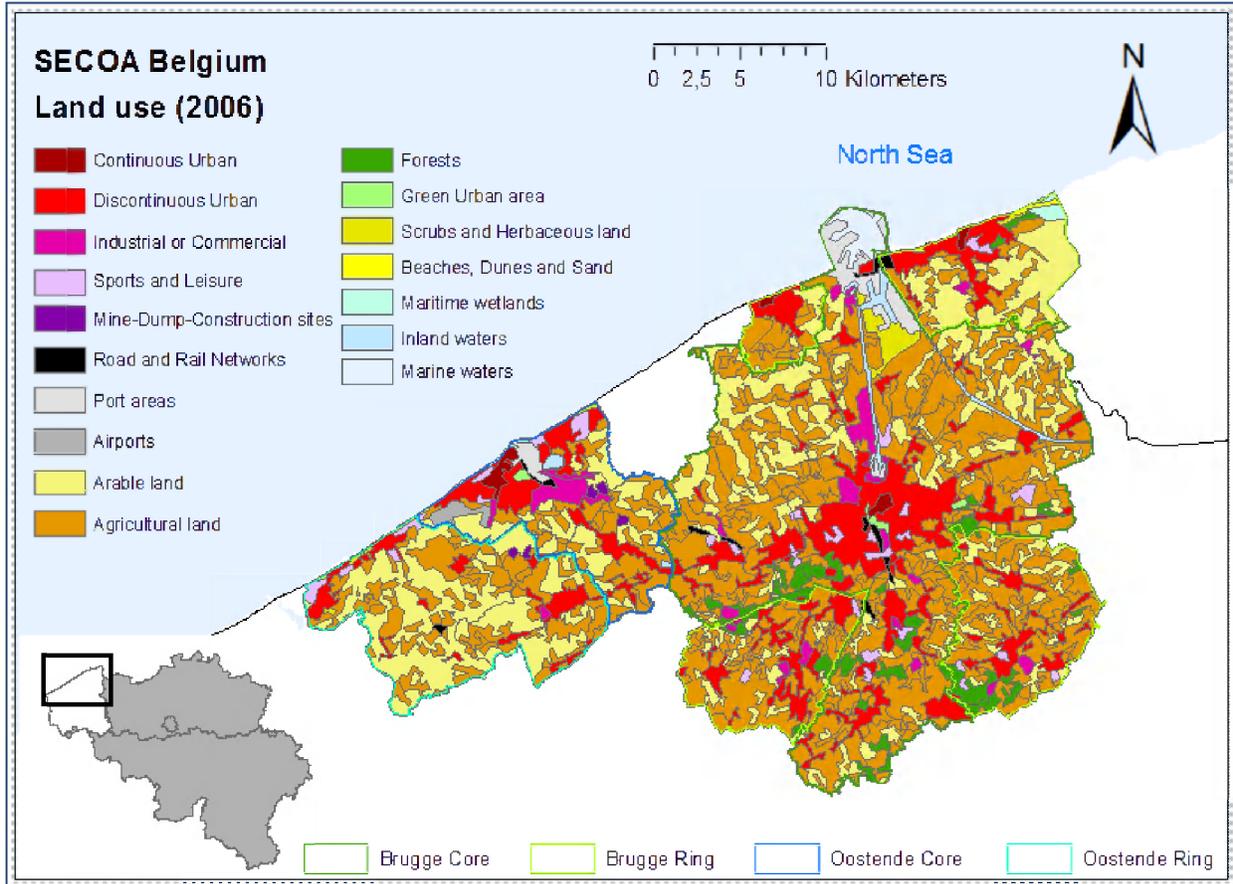
The process of extensification has occurred slowly in Brugge SA during the last decade. This could be due to the fact that urbanisation has passed its fast transition period in the SA and the region has entered into the stabilised period where both extension and infilling occur at a very low pace.

Figure 3.4. Land uses according to CORINE 2000, level 2 categorisation*



* Source: EEA (2010).

Figure 3.5. Land uses according to CORINE 2006, level 2 categorisation*



Intensification processes are also evident although these are very slow moving, and are evident through:

- Shifting land-use: in the ring, the agricultural area is being reduced, giving space for residential and industrial areas. In contrast, agricultural space has increased in the core.
- Redevelopment (increase intensity through high-rise buildings): there is no evidence of redevelopment processes, leading to intensification, in Brugge SA.

* Source: EEA (2010).

3.2 Migration

3.2.1 In-migration

Table 3.3 shows the data on in-migration for each commune within the Brugge SA and the core and ring of the study area. Brugge Municipality is the commune with the highest in-migration flux during the period 1997-2007, accounting for 80% of the total in-migrants in the core. Within the core, Zuienkerke has the fastest growth in in-migration. In the ring, Knokke-Hesit is the most popular destination for in-migrants, followed by Blankenberge. However, in relative term, Blankenberge has the highest proportion of in-migrants as a proportion of the total population.

Around two third of the people moving in the Brugge SA go to the core. However, the figures show that growth due to in-migration is becoming slower in the core compared to the ring. It increased 11.85% in the core compared to 16.08% in the ring, 1997-2007, even though the former remains the main focus in absolute terms.

Table 3.3. *In-migration data for Brugge SA (Lokale Statistieke, 2010)*

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Beernem	475	542	537	509	536	577	527	596	647	684	720
Blankenberge	1025	1015	1032	1119	1214	1211	1277	1169	1176	1189	1198
Zedelgem	826	844	772	789	791	812	802	776	862	1013	979
Knokke-Heist	1598	1622	1586	1640	1612	1522	1744	1719	1813	1749	1658
Brugge	4310	4433	4524	4308	4452	4461	4601	4738	4616	4717	4841
Damme	469	552	440	441	450	458	354	449	490	465	497
Jabbeke	598	526	625	533	537	499	547	582	507	660	677
Oostkamp	899	855	917	778	848	879	900	1029	1039	1050	1045
Zuienkerke	176	148	160	181	157	140	133	184	157	155	157
CORE	6452	6514	6666	6241	6444	6437	6535	6982	6809	7047	7217
RING	3924	4023	3927	4057	4153	4122	4350	4260	4498	4635	4555

3.2.2 Out-migration

Table 3.4 shows that out-migration in Brugge SA is as fast as in-migration, and sometimes has out-paced it. Most of the people moving out of Brugge SA are from Brugge Municipality. In the ring, Knokke-Hesit and Blankenberge also have high rates of out-migration. Out-migration seems to mirror in-migration in most communes, with Zuienkerke and Blankenberge experiencing the fastest out-migration in the ring.

Table 3.4. *Out-migration data for Brugge SA**

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Beernem	417	536	499	480	538	581	527	601	562	630	624
Blankenberge	974	911	924	911	887	923	963	993	1030	950	998
Zedelgem	810	814	783	836	895	829	920	940	879	980	946
Knokke-Heist	1385	1404	1310	1355	1333	1274	1325	1489	1450	1505	1576
Brugge	4331	3977	4151	3913	4098	4359	4250	4463	4665	4899	4791
Damme	491	427	419	422	488	505	431	505	470	516	474
Jabbeke	491	578	581	515	530	581	537	603	600	617	631
Oostkamp	888	900	911	876	812	822	857	896	854	948	963
Zuienkerke	165	163	143	181	184	157	160	182	148	199	151
CORE	6366	6045	6205	5907	6112	6424	6235	6649	6737	7179	7010
RING	3586	3665	3516	3582	3653	3607	3735	4023	3921	4065	4144

3.2.3 Internal migration

Internal migration shows the movement within the country. Internal migration data for the communes in the Brugge SA show a diverse picture. In the Brugge Municipality, a generally high in-migration figure was seen between 1997 and 2002 when there was always a positive influx of internal migrant (from other communes in Belgium). There was a dip in 2002 when there was a small negative influx but internally this picked up during the period 2003-2005. During the period 2005-2007, there was a steady negative influx of internal migrants to Brugge,

* Source: Lokale Statistieke (2010).

indicating that less people from other Belgian communes came to settle in Brugge compared to the number of people who moved out of Brugge. During the same period 1997-2007, there was a positive influx into most of the communes surrounding Brugge. Blankenberge and Knokke-Heist were two communes with positive high influxes throughout, both in term of absolute numbers and in term of the proportion of migrants in relation to the population. Oostkamp is the third commune, which has experienced an increasing trend in in-migration internally. For other communes, internal migration was variable.

In relative term, Zuienkerke saw the largest movement of population to other Belgian communes, mostly because it has a very small population.

Table 3.5. *Internal migration data for Brugge SA (Lokale Statistieke, 2010)*

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Beernem	50	6	34	41	4	-31	-17	-2	66	39	67
Blankenberge	129	96	170	247	381	301	264	209	129	203	163
Zedelgem	29	38	-10	-40	-107	-47	-134	-163	-46	20	13
Knokke-Heist	184	181	213	271	242	204	351	184	276	202	16
Brugge	-36	282	204	190	176	-57	273	111	-323	-328	-310
Damme	-12	120	31	9	-31	-41	-78	-75	9	-41	23
Jabbeke	113	-51	36	36	9	-94	-18	-30	-100	22	18
Oostkamp	10	-61	17	-95	3	56	23	132	163	87	78
Torhout	25	49	27	-64	-4	99	101	155	185	43	138
Zuienkerke	6	-17	15	10	-29	-16	-20	10	14	-41	0
Core	106	322	330	86	124	-53	281	303	-52	-258	-53
Ring	392	321	407	519	520	427	464	228	425	464	259

In 2000, most of the residential relocations within the Brugge SA occurred within the core. Migration from ring to core or from core to ring is very limited in absolute terms in comparison to migration between the communes within the core. In 2000, core mobility was 59.35% of the total mobility while it was 27.05% in ring mobility. Movement from ring to core is similar to the rate from core to ring.

Year 2000	From\To	Core	Ring	Total
Brugge SA	Core	10121	1077	11198
	Ring	1242	4612	5854
	Outside	2432	2383	

3.2.4 External migration

External migration shows the movement amongst different countries, i.e. number of people moving in and out of Belgium, also referred to as international migration. Brugge Municipality within the case study area is the most popular destination for foreign migrants.

Table 3.6. *External migration data for Brugge SA**

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Beernem	8	0	4	-12	-6	27	17	-3	19	15	29
Blankenberge	-78	8	-62	-39	-54	-13	50	-33	17	36	37
Zedelgem	-13	-8	-1	-7	3	30	16	-1	29	13	20
Knokke-Heist	29	37	63	14	37	44	68	46	87	42	66
Brugge	15	174	169	205	178	159	78	164	274	146	360
Damme	-10	5	-10	10	-7	-6	1	19	11	-10	0
Jabbeke	-6	-1	8	-18	-2	12	28	9	7	21	28
Oostkamp	1	16	-11	-3	33	1	20	1	22	15	4
Zuienkerke	5	2	2	-10	2	-1	-7	-8	-5	-3	6
Core	5	196	158	184	204	165	120	185	309	169	398
Ring	-54	37	4	-44	-20	88	151	9	152	106	152

During the period 1997-2002, many communes saw a negative figure for external migration, which signifies that the number of people moving in from abroad was lower than the number moving out to foreign destinations. Brugge and Knokke-Hesit are the two communes with the strongest positive trends throughout the period 1997-2007, with more people coming in than went out.

* Source: Lokale Statistieke (2010).

Figure 3.6a. Net migration for the Belgian case studies in 2000

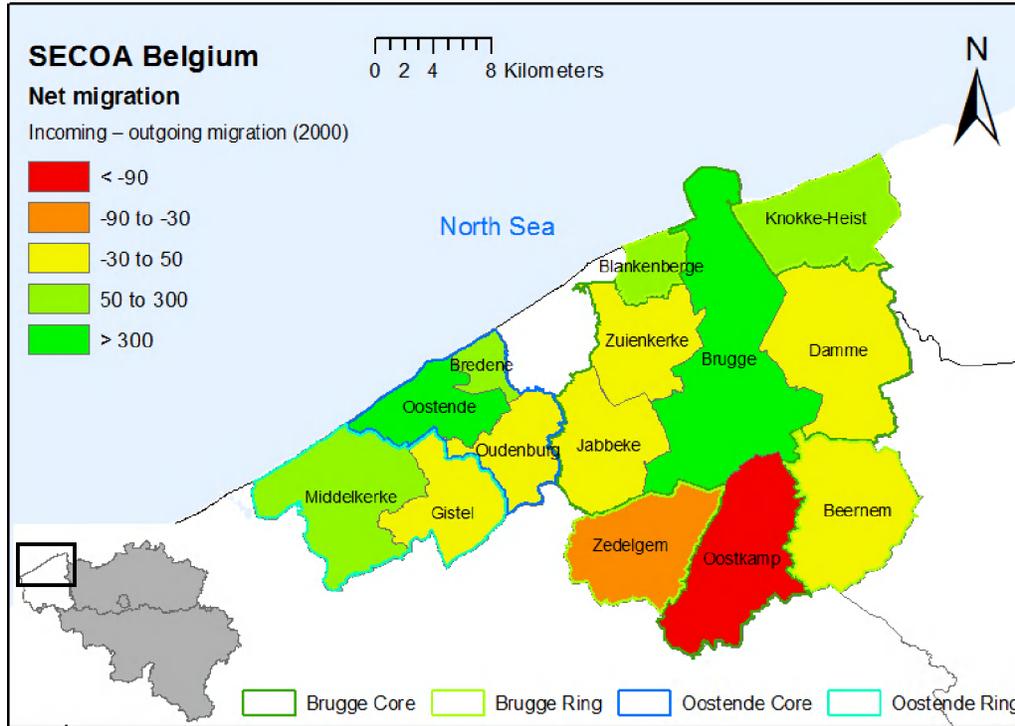
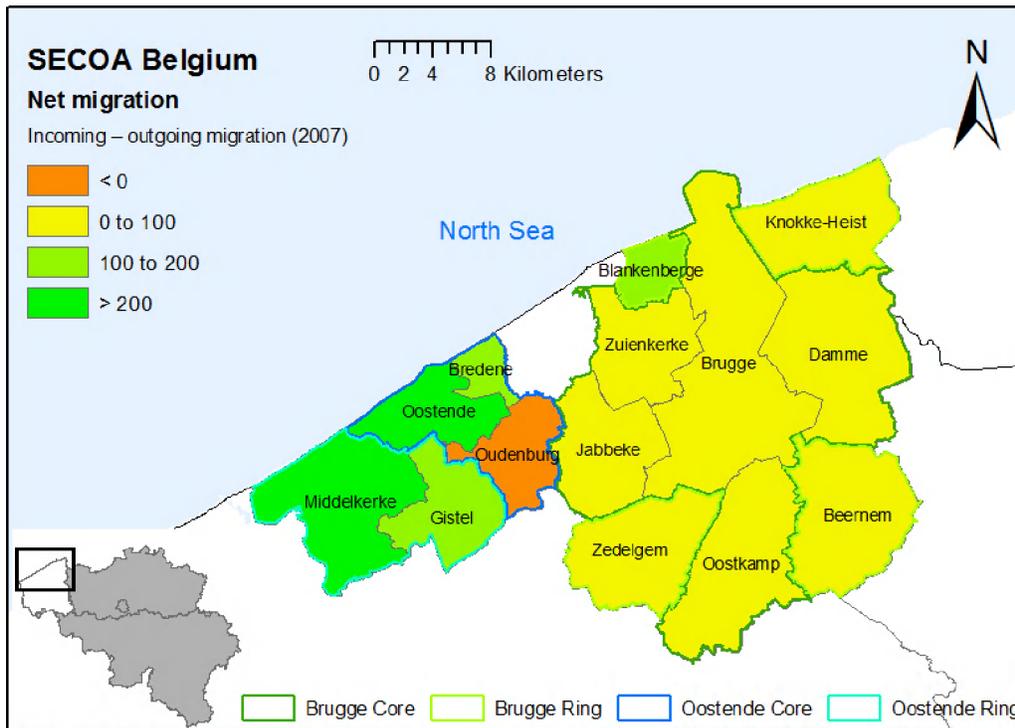


Figure 3.6b. Net migration for the Belgian case studies in 2007



3.2.5 Temporary residents

Temporary residents are those who come to reside temporary or intermittently, such as students and second-home owners.

Students are an important element in the temporary population of the case study area. The Katholieke Hogeschool Brugge – Oostende (KHBO or Catholic University College of Bruges–Ostend) is a college, which provides professional training at the Bachelor and Master levels on a wide range of topics. It is the product of a merger of 5 former independent colleges of higher education in Bruges and Ostend with approximately 3800 students and approximately 400 members of staff (330 FTE). It has a campus in Brugge and a Campus in Oostende. The Brugge campus was put into operation in the academic year 2008-2009 with approximately 280 personnel and around 2900 students. However, there is no data available on the residency of the students.

In 2007, the coastal communes of Brugge SA and Oostende SA had total of 82,700 second-homes (Gunst *et al.* 2008). Coastal communes within Brugge SA are the most popular destinations for second-home owners, with Knokke-Heist leading the list with some 18,200 second-homes. Blankenberge has roughly 6,600 units and Zeebrugge has around 830 units (Gunst *et al.* 2008).

The coastal communes of the Oostende SA are also a popular destination, with Middelkerke being first ranked with more than 14,000 units, followed by Oostende with around 6,600 units. Bredene also has around 1000 second homes units (Gunst *et al.* 2008).

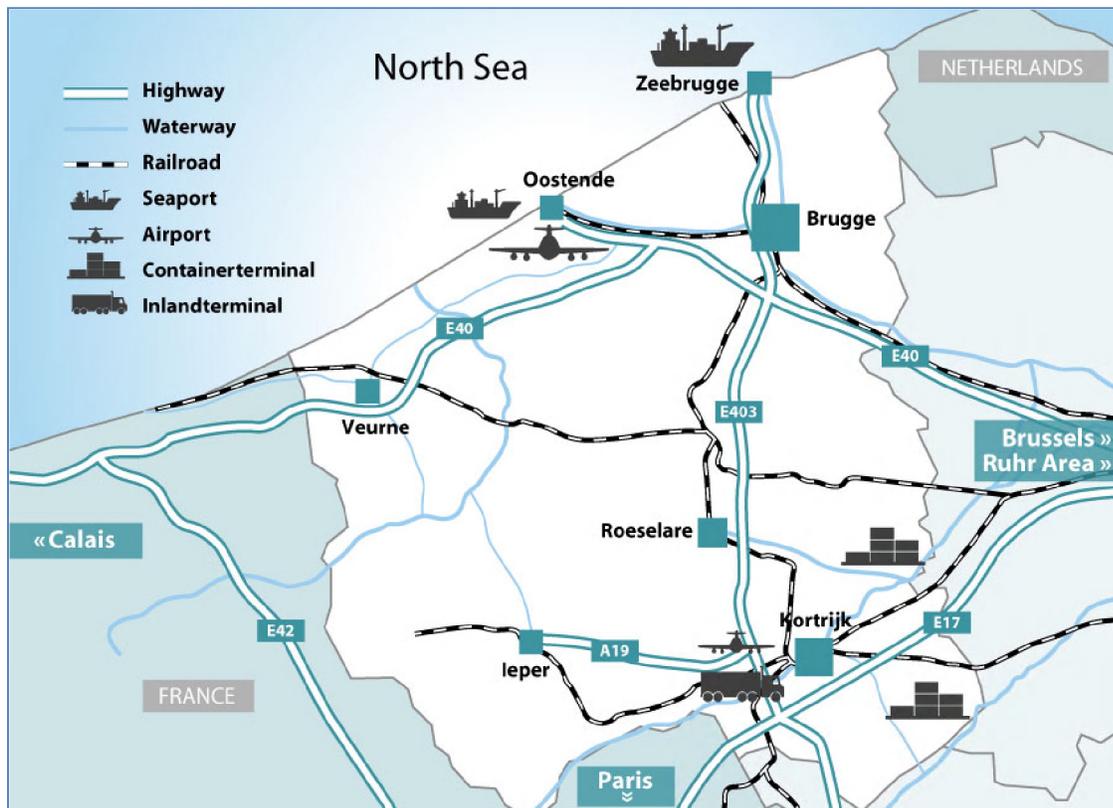
Between 1989 and 2007, the total number of second-homes in the coastal communes (both in Brugge SA and Oostende SA) has increased by more than 25,000 units or 43%, representing an annual increase of approximately 2% (Gunst *et al.* 2008). Most of the second homes are at the sea front, right onto the beaches.

Approximately 60% of the second homes are used by the owners (46%) or made free for his/her acquaintances (14%) for tourism/recreation purposes. Around 40% of the second homes are used as tourism lodging facilities (rented accommodation) (WES 2008).

3.3 Mobility

West Flanders province has a very good multi-modal transport network (Figure 3.7), constituted of road, rail, water and air-ways. The two study areas have similar transport network features: each has an important seaport and connections to the main rail and road networks of West-Flanders Province. As Belgium is a relatively small state, with relatively open borders, international connections are especially important, as are transport links within the country and the individual metropolitan areas.

Figure 3.7. Major features of West-Flanders transport network*



* Source: <http://www.investinwestflanders.org/>

3.3.1 Road connections

Brugge SA is connected to Ghent and Brussels via the A17/E40 motorway. Brugge is also connected to Oostende via three major highways, the A10, N3 and N9. Within the Brugge SA, the secondary roads, the N3 and N9, connect Brugge Municipality and its neighbouring communes. An extension of the E40 (E403) continues to Zeebrugge (E403), providing a fast connection between Zeebrugge – Blankenberge with Oostende and with Ghent/Brussels. Brugge historic centre is circled by the ring road R30/N9. With relatively few natural obstructions to transport routes, and relatively high population densities, there are well-developed road transport links within both metropolitan regions.

Table 3.7 gives an overview of road use intensity in the Brugge SA. Road use intensity has increased slightly between 2000 and 2005, with the highest increase being on the highways. Provincial roads in the region are used intensively, mostly because most people work within the region, as well as the usual access to urban services. Only a relatively small proportion of working people have jobs in other larger cities such as Ghent, Antwerp and Brussels.

The intensity of road use, represented by the number of km-travelled per kilometre of road per annum, is higher in the ring for highways and provincial roads than in the core, partly reflecting differences in the provision of public transport as well as the distribution of employment and services.

Table 3.7. Road use intensity (per km per annum)*

Communes	2000			2005		
	Highway	Communal roads	Provincial roads	Highway	Communal roads	Provincial roads
Beernem	27,051,888	125,151	2,051,230,110	29,654,797	138,278	2,148,478,398
Blankenberge		230,324	4,681,263,377		338,123	5,116,286,805
Knokke-Heist		286,442	4,920,532,862		335,634	4,888,006,351
Zedelgem	14,264,984	225,942	3,306,502,550	16,731,861	282,716	3,148,232,834
Total RING	20,658,436	216,965	3,739,882,225	23,193,329	273,688	3,825,251,097
Brugge	23,111,606	741,269	4,604,015,988	26,275,166	486,458	4,765,743,461
Damme		179,489	4,717,893,669		226,111	4,726,051,995
Jabbeke	15,891,252	149,013	2,044,665,342	17,517,970	204,100	2,483,401,372
Oostkamp	18,715,649	181,220	2,566,556,987	19,869,005	189,082	2,556,484,651
Zuienkerke		89,055	2,578,060,884		180,923	2,646,583,210
Total CORE	19,239,502	268,009	3,302,238,574	21,220,714	257,335	3,435,652,938

* Source: Lokale Statistieke (2010).

3.3.2 Rail connections

Brugge SA can be reached via train and coastal tram networks. The station is located at the southern border of the historic centre. There are two direct trains every hour between 6am till midnight connecting Brussels and Brugge, and the former is an important international railway hub. During the summer, additional services are in operation, with more trains coming to Brugge in the morning and back to Brussels in the afternoon, reflecting tourism flows.

3.3.3 Air travel

Brugge SA does not have a separate airport. Instead, air-passengers use the airport in Oostende, which is in fact called Oostende-Brugge Airport (see the Oostende case study for more information). There is also relatively easy access to Brussels airport, which is a major international hub.

3.3.4 Waterways

Brugge SA, as well as Oostende SA, is located within the Province of West-Flanders. There are 275.5 km of navigable waterways in the province, and many sections lie within the two SAs. The Oostende-Brugge-Ghent canal provides an important inland waterway connection to the Belgian and European network of waterways.

Brugge SA is connected to the sea through the Port of Zeebrugge, which is both a deep-sea container port as well as a passenger port, with connections to the UK and many short-sea connections to other different parts of Europe, such as Scandinavia, the Baltic region and the Southern European region. During the last 5 years, the Port of Zeebrugge has had a steady growth rate, with only one minor dip in 2007 (Table 3.8). During the economic crisis 2008-2009, the Port of Zeebrugge managed to maintain its growth, despite the decline observed in other ports in Flanders.

Table 3.8. *Cargo and passengers evolution at the Port of Zeebrugge (West-Vlaanderen, 2008-2010)*

Categories	2003	2004	2005	2006	2007	2008	2009
Goods (in 1000 ton)							
- General cargo	7,191.7	6,684.8	7,209.8	9,242.9	8,754.4	9,007.3	10,457.7
- Roro	11,107.0	11,097.5	11,776.6	12,244.2	12,999.8	11,814.2	9,514.5
- Containers	12,271.3	14,012.2	15,604.3	17,985.7	20,323.0	21,203.0	24,894.6
Total tonnage	30,570.0	31,794.4	34,590.6	39,472.8	42,077.2	42,024.4	44,866.8
Vehicles transport (in 1000 units)							
- Tourist vehicles	102.41	103.19	106.98	89.59	88.51	78.96	64.56
- Roro - trucks	881.65	894.70	940.99	968.36	1,020.23	927.47	818.66
- New vehicles	1,577.62	1,710.49	1,734.71	1,933.91	2,208.91	2,126.14	1,286.12
Total vehicles	2,561.68	2,708.38	2,782.68	2,991.86	3,317.65	3,132.57	2,169.34
Total containers (million TEU) (a)	1.01	1.20	1.41	1.65	2.02	2.21	2.33
Total passengers	674,153	649,844	702,486	654,329	650,442	560,526	561,661
(a) TEU=Twenty Foot Equivalent Unit.							

3.3.5 Public transport

In the city, the public transport system is managed by De Lijn, which provides both bus and tram services. There are 22 bus lines (amongst these, five lines connect the city to the neighbouring towns). For longer distances, 14 tram lines connect Brugge municipality to its surrounding communes as well as the communes of the Oostende Arrondissement.

3.4 Temporary mobility

3.4.1 Home-work travel

Home-work travel is a particularly important element in the definition of Functional Urban Region. According to a survey in 2008 by the FOD Mobiliteit en Vervoer (Table 3.9), Brugge Municipality attracts workers from all the surrounding communes. The core zone of the Brugge SA constituted a labour market of 72,270 jobs in 2007, or 76% of the total job market in the Brugge SA (Lokale Statistieken 2010). Brugge Municipality single-handedly provides 85% of the total jobs in the core zone, mostly in the tertiary sector (commercial and services) and quaternary sector (information, education). The other jobs are distributed across the other communes in the core. More than 60% of the workers who live in Brugge Municipality work in the municipality. People from the Brugge SA also travel to work in the Oostende SA.

Table 3.9. *Home-work travel survey results: Brugge**

FROM\TO	Brugge	Damme	Jabbeke	Oostkamp	Zuienkerke	Beernem	Blanken-berge	Knokke-Heist	Zedelgem
Brugge	61.00%	1.00%	1.70%	2.00%	0%	1.00%	0.90%	2.90%	1.70%
Damme	36.10%	18.00%	1.70%	2.50%	0%	2.50%		8.20%	1.60%
Jabbeke	32.10%		1.70%	2.40%	0%			1.30%	5.40%
Oostkamp	31.80%	0.70%		20.40%	0%	3.10%			5.10%
Zuienkerke	40.20%			1.80%	0%		5.00%	5.60%	2.70%
Beernem	26.10%	2.00%		5.00%	0%	24.60%		1.00%	1.50%
Blankenberge	26.70%			1.30%	0%		35.20%	6.70%	1.10%
Knokke-Heist	17.40%	0.70%		4.00%	0%		1.30%	48.70%	6.00%
Zedelgem	27.00%		2.00%	4.40%	0%	1.00%			23.80%

* Source: FOD Mobiliteit and Vervoer (2008).

Table 3.10 shows the total number of movements for employment purposes for the Brugge SA, with the break-down between the core and the ring areas, for the average working day. The data comes from the home-work survey carried out in 2008 by the FOD Mobiliteit en Vervoer (Flemish Agency for Mobility and Transport). The data shows that three-fifth of the total journeys are within the core. One-fifth are generated within the ring and the rest are between the core and the ring. Movements from the ring to the core are two times greater than the movements from the core to the ring. This corresponds with the employment data whereby most of the employment is generated in the core, and most of the workers also live in the core (see Table 3.9). These data emphasize that, as is usual with metropolitan regions, employment remains far more centralized than the population.

Table 3.10. Average working-day home-work movement in Brugge SA, in 2008 (unit: number of journeys)

FROM\TO	Ring	Core
Ring	30,429 (19.64%)	21,726 (14.02%)
Core	11,027 (7.12%)	91,779 (59.23%)

Private vehicles still account for a very large proportion of transport flows, with more than 60% of the working population of all communes, except Oostende Municipality and Blankenberge, using private car as the main mode of transport to work (Table 3.11). Brugge Municipality has the lowest proportion of workers using cars, mostly because most of the people working in Brugge also live in Brugge. Instead, cycling is relatively more popular in Brugge Municipality than in the other communes, accounting for 28% of the mode shared. The train is the third most popular mode of transport, but the use of trains is well below the 10% mark. Public transport in the Brugge SA takes up a small proportion of home-work travel.

Table 3.11. *Share of transport modes in home-work travel, Brugge**

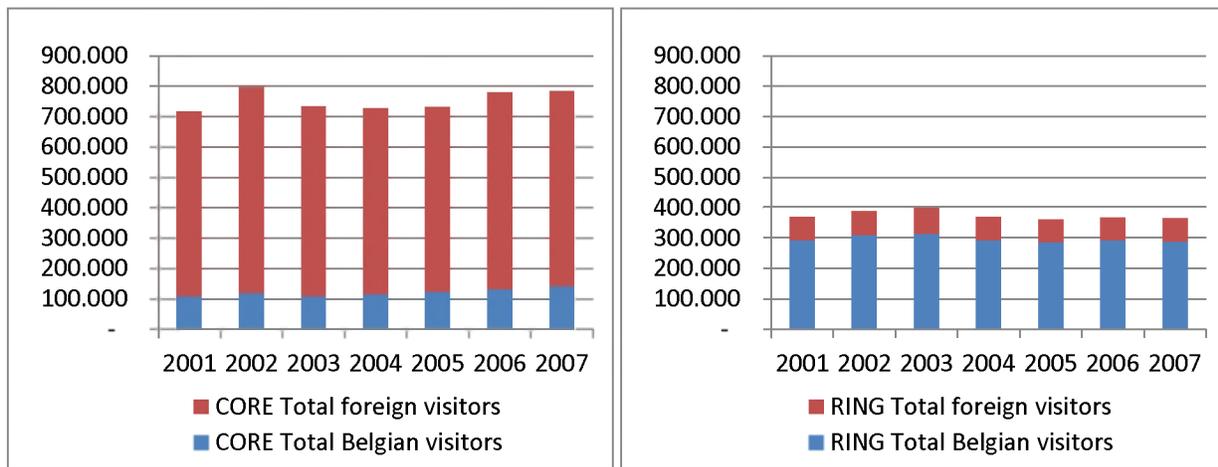
Commune	Car	Carsharing	Train	Bus/Tram/ Metro	Private bus	Bike	Motor bike	Walking
Beernem	74.39	2.98	9.99	1.32	1.06	8.4	1.65	0.22
Blankenberge	54.23	3.3	8.47	1.23	0.4	24.42	0.36	7.59
Knokke-Heist	61.34	3.41	8.58	2.42	0.28	15.72	4.59	3.66
Zedelgem	78.11	2.75	6.77	2.52	1.26	6.74	1.13	0.72
Average RING	67.02	3.11	8.45	1.87	0.75	13.82	1.93	3.05
Brugge	53.58	1.99	8.33	2.58	0.44	28.09	3.57	1.41
Damme	70.41	2.71	7.42	1.52	0.43	14.3	1.93	1.27
Jabbeke	77.37	2.21	7.22	0.95	0.84	8.91	1.44	1.05
Oostkamp	69.07	3.04	8.92	0.97	0.98	14.7	1.7	0.62
Zuienkerke	75.52	1.78	7.53	2.61	0.74	9.08	2.52	0.2
Average CORE	69.19	2.35	7.88	1.73	0.69	15.02	2.23	0.91

* Source: FOD Mobiliteit end Vervoer (2008).

3.4.2 Tourism

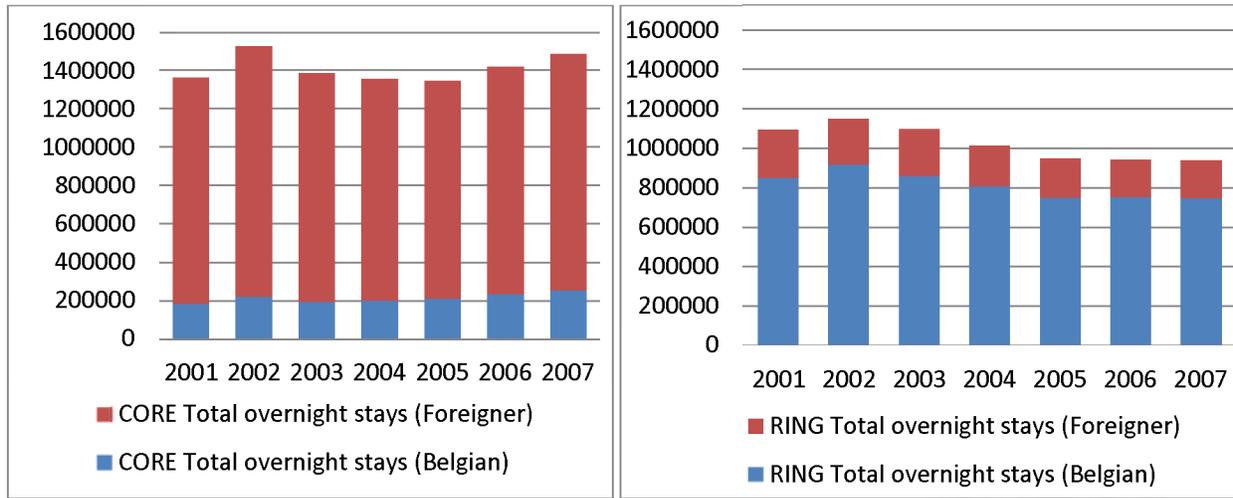
Brugge city is considered one of the most attractive historic-cultural cities in Europe. In 2007, Brugge SA attracted a total of approximately 1,150,000 visitors, and 69% of these had visited the core area (mainly Brugge Municipality). There is an exceptionally high proportion of foreigners – 62.5% of the total, of these, 90% visited the core. 67% of Belgian visitors were more likely to visit the ring area, mainly Blankenberge (over 40%) and Knokke-Heist (over 20%). The pressures generated by tourism, particularly in context of the historic urban structures of Brugge, represent major challenges.

Figure 3.8. Evolution of visitors to the Brugge SA*



Overnights stays in Brugge SA are dominated by stays in the core area (over 60% of the total). The core and the ring attract different groups of tourists. While the core (with the dominance of Brugge Municipality) attracts mostly foreign tourists, Belgian tourists tend to opt for the ring locations.

* Source: data from Lokale Statistieken (2010).

Figure 3.9. *Number of overnight stays in the core and the ring of Brugge SA**

A large number of visitors come to Brugge for business purposes, especially in recent years as Brugge is strongly promoted as a congress centre. In 2009, Brugge hosted 165 registered events, including 12 major conferences (with more than 200 participants). In total, 15,000 people visited Brugge in 2009 for meetings / conferences. Visitors to Brugge come year round, with the lowest number in January and highest in August: there is some seasonality, but it is relatively modest compared to the seasonality that is experienced, for example, by coastal resorts in Northern Europe.

* Source: Lokale Statistieken (2010).

Table 3.12 shows the number of visitors per month for the period 2005-9. In total, Brugge alone hosts around 1.4 million visitors annually.

Table 3.12. Number of overnight stays, 2005-2009, Brugge

	2005-2006	2006-2007	2007-2008	2008-2009
November	80,922	84,937	92,254	102,079
December	104,846	112,073	113,711	121,432
January	47,867	53,852	55,913	57,384
February	73,978	74,993	83,903	75,435
March	84,843	96,567	105,403	87,240
April	130,561	136,815	125,819	140,608
May	132,345	135,574	147,106	138,498
June	116,790	113,702	126,925	114,930
July	143,447	147,199	166,583	159,583
August	155,939	164,553	179,853	172,062
September	126,813	129,530	125,566	125,155
October	123,742	121,873	127,825	132,101
Total year	1,322,093	1,371,668	1,450,861	1,426,507
Total winter (Nov-March)	392,456	422,422	451,184	443,570

During the 5 years between 2005-2009, the number of lodging establishments remained stable in the central core (the Brugge Municipality).

*Table 3.13. Number of lodging establishments in the Brugge Municipality**

Type of lodging	2006	2007	2008	2009
Number of hotels	109	111	111	113
Number of hotel rooms	3,112	3,171	3,264	3,497
Number of hotel beds	6,998	7,118	7,180	7,693
Number of guesthouses	143	157	168	168
Number of guesthouse rooms	301	337	362	363

While Brugge municipality is one of the best known tourism destinations internationally, there are also significant flows from within the metropolitan area, as well as from elsewhere, to the coast. Brugge SA, Knokke-Heist, Blankenberge and Zeebrugge are the three coastal communes that are in the “most-popular” list for day-tourists. Knokke-Heist is in second place, right behind Oostende, with 3.2 million day visitors in 2009. Blankenberge is in fourth place with 1.9 million day visitors and Zeebrugge also attracted 0.2 million the same year.

During the summer, extended train services are operated with a larger train capacity. In June-August, there are eight more direct trains from Brussels to Brugge, which then continue on extended routes to Oostende and vice versa, during the weekends, as well as five more services during weekdays.

In the Brugge SA, Brugge Municipality is the principal cultural centre. Table 3.14 provides data on attendances at various cultural activities in the Brugge Municipality during the period 2003-2009. Although there are some fluctuations, numbers are generally increasing strongly providing evidence that the night time economy, as well as daily commuting, add significantly to the temporary population in the core of the metropolitan region.

* Source: Annual report of Brugge Municipality (2009).

Table 3.14. Attendance at cultural activities, Brugge*

Categories	Unit	2003	2006	2009
Podium activities (theatre, music, concert, dance, etc.)	Number of events (1)	461	457	527
	Number of spectators	122,756	114,410	126,918
Exhibitions	Number of exhibitions	-	-	38
	Number of days (2)	686	551	864
	Number of visitors	-	16,364	10,822
Educational activities	Number of events (3)	411	313	310
	Number of spectators	5,027	12,945	9,737
TOTAL	Number of activities (1+2+3)	1,458	1,321	1,635
	Number of spectators	127,783	143,719	145,767

Brugge Municipality is an active cultural centre with many cultural activities organized year-round, ranging from theatre to music, dance, cultural lessons and exhibitions. Annually, events in Brugge Municipality attract around 145,000 spectators: although many are from Brugge, there are also large numbers who travel in from surrounding communes, while many are tourists staying in the city overnight. However, there is insufficient data to provide further disaggregation.

'Museums Bruges' is an umbrella organisation representing 16 diverse museums. The locations are divided into three groups: the Greening Museum (Museum of Fine Arts), the Hospital Museum (historic hospitals including the Memling Collection) and the Historical Museum (history museum). All are located within Brugge Municipality. Annually, Museums Bruges receives nearly 800,000 domestic and foreign guests to its museums. Museums Bruges is also responsible for Interface (inter-municipal archaeological service for Bruges and surrounding area) and heritage sites (so called Bruges Heritages).

* Source: Brugge Municipality Annual Reports (2003-2009).

*Table 3.15. Number of visitors to different attractions in Brugge**

Attractions	2006	2007	2008	2009
Museums	736,029	703,883	763,123	898,463
Boat trips participants	934,889	948,848	907,960	974,038
City Tour Brugge	44,982	45,824	46,930	43,855
City Tour Damme	1,924	1,651	1,593	1,606

The most visited museums in Brugge in 2008 were the Bellford (232,147 visitors), the Groeningemuseum (129,413 visitors), Memling in Sint-Jan (88,548 visitors) and Bruggemuseum-City Hall (78,439 visitors).

* Source: Brugge Municipality Annual Reports (2009).

4. Oostende

4.1 Overview

The second study area in Belgium is the Oostende SA, which comprises five communes of the Oostende Arrondissement. They are Bredene, Gistel, Middelkerke, Oostende and Oudenburg. The whole of the Oostende SA lies within the designated coastal zone of Belgium. The study area comprises a core of three communes Bredene, Oostende and Oudenburg, while there is a ring of two communes, Gistel and Middelkerke. Oostende SA has a total surface area of 250 km² and a coastline of roughly 20 km, or nearly a third of the total Belgian coastline. Oostende commune (or Oostende Municipality) is the core of the region, where most of the socio-economic activities take place. The main activities are coastal tourism and port industries. The four other communes that form the Oostende SA have strategic locations around Oostende Municipality and are functionally linked to Oostende Municipality in terms of economic development and socio-economic coherence. They provide roughly 50% of the workers for Oostende Municipality. People from Oostende also work in the neighbouring communes, which means that the functional region is characterized by dense and extensive inter-relationships.

Historically, Oostende region is an old seaside resort, which developed from a small fishing village that had been established from the 8th century. From the 10th until the 14th centuries, the area gradually developed with the building of dykes and the filling in of ditches to protect homes and livelihoods against the North Sea. The turning point for the area was in the middle of the 15th century, when a harbour was built, which attracted traders and shipments from different parts of Europe, notably the Indies and China. At the same time, Oostende port had a strategic position in the religious wars in the 16th century. Until the end of the 17th century, the city was a battlefield between the Spanish Empire, the Dutch and the English. The city was comprehensively rebuilt at the beginning of the 18th century and started to flourish. During the 17th and 18th centuries, Oostende was under the management of the Eastern-Indian Company, and was then ruled by the Napoleonic monarchy before becoming a territory of Holland for a short period. In 1830, Oostende became a part of the new independent Belgium.

During the reign of King Leopold I, the first king of Belgium, Oostende was connected to Brussels in 1838. A ferry service between Oostende and Dover (in the UK) was set up in 1846. King Leopold II had a vision of transforming Oostende into 'the Queen of the Belgian Coast' and it became a belle-époque city, with an international reputation. At the turn of the century,

massive renovations took place in the harbour, but the two world wars put an end at the development of Oostende. After the Second World War, Oostende began to be transformed into a modern coastal city. Older buildings were demolished to make room for new apartment blocks, and new projects were created: the town hall, the postal office and the casino. The highway also reached the edge of the city centre. Meanwhile, the elite tourists from the past made way for mass tourism.

The Oostende Study Area (SA) accommodates a total of 124,209 people, distributed across a total area of around 20,500 ha. Table 3.16 gives details of the population of each commune in the study area, disaggregated by age groups (West Vlanderen 2008-2010).

Table 3.16. Population of the study area by end 2008, Oostende

Commune	0-17 y	18-64 y	65+ y	Total	Density
Gistel	2,526	7,171	1,997	11,694	269
Middelkerke	2,832	10,876	4,911	18,619	243
<i>Sub-total Ringzone</i>	<i>5,358</i>	<i>18,047</i>	<i>6,908</i>	<i>30,313</i>	<i>252</i>
Bredene	3,123	10,049	2,695	15,867	1191
Oostende	10,631	40,602	17,812	69,045	1834
Oudenburg	1,764	5,484	1,736	8,984	253
<i>Sub-total Corezone</i>	<i>15,518</i>	<i>56,135</i>	<i>22,243</i>	<i>93,896</i>	<i>1087</i>
Oostende Area	41,752	148,364	58,302	248,418	605

The population has increased slowly in both the core and the ring of the Oostende SA with the growth rate of the ring being a little higher than that of the core: therefore, as in Brugge, there is relative population decentralization. Population growth has been faster during the period 2000-2008 than during the period 1991-1999. Although the population grows slowly, Oostende SA still has one of the fastest growth rates in the Province of West-Flanders. There is a high degree of concentration of population, and population growth mostly occurs in the core. The core area of Oostende SA accommodates two-third of the total population of the Study Area, with three-fourth of that population concentrated in Oostende Municipality.

Oostende Municipality, the city core, has the oldest age structure, with nearly 30% being aged over 65. Only Middelkerke in the ring has an older age profile.

The average density of the entire study area is 605 people per square kilometre. The core zone has a much higher density than the ring, with Oostende Municipality having a density 3 times higher than the regional average. Oostende Municipality has the highest population density in the Province of West-Flanders (West-Vlaanderen, 2010). Together, Oostende and Bredene Municipalities are the two most populated communes in West-Flanders. Both border the sea. The third most populated commune in West-Flanders is also a coastal commune, Blankenberge. In Oostende, there are many sub-areas with population densities of over 9000 people/km², and many of them are on the coast (see the Population Density map in the Brugge case study).

In contrast, coastal communes have lower household sizes, with the average household size in most such communes being below 2.3. In the Oostende SA, Gistel (in the ring) had the largest household size of 2.45 in 2008. Oostende Municipality has the lowest private household size in the Province of West-Flanders of just 1.97 (West-Vlaanderen, 2010). In both the core and the ring, the average size of private households has decreased during the last fifteen years. There has been no research into the reason for this decrease.

During the period 1997-2009, land-uses have changed significantly in some categories. In the ring (communes of Gistel and Middelkerke), the agricultural area has decreased by 30%, open spaces have been reduced by 43% and the office area has fallen by 77%. In contrast, there has been fast development of natural and semi natural areas (forest, swamps, bogs, etc.) (+98%), industrial development (+47%) and residential projects (+32%). In the core, in contrast, only natural and semi-natural areas reduced in size, while all other land-uses increased. The fastest increase was in industrial land use (+38%), followed by the agricultural area (+30%) and residential area (+24%).

Table 3.17. *Land-use changes in Oostende SA**

Land-use categories	Ring			Core		
	1997	2009	Changes 97-09	1997	2009	Changes 97-09
Agriculture Area	9585.3336	6683.551	-30%	7805.0339	10563.259	35%
Natural/Semi-natural Area	147.8809	293.0456	98%	619.2337	431.0591	-30%
Open Space Area	934.5392	529.1857	-43%	2264.7946	2542.2533	12%
Residential area	700.4137	921.7879	32%	1235.9753	1529.3779	24%
Industrial Area	160.3638	235.4702	47%	385.2598	531.065	38%
Commercial Area	46.0781	44.562	-3%	94.168	111.0087	18%
Office Area	214.6158	49.7515	-77%	389.7655	444.0923	14%
Government Area	1.5167	1.5221	0%	41.284	31.817	-23%

Urban spread (extension at the outer edge): as would be expected, expansion of residential and industrial area is much faster in the ring than in the core. Infilling (filling-up open space in already built-up areas) is a process that can be observed in both the ring and the core, although at a relatively slow pace.

Land-use changes: in the ring, the agricultural area has reduced while residential and industrial areas have increased, indicating an overall intensification of land use. There is little evidence of redevelopment (increase intensity through high-rise buildings) in the Oostende SA.

* Source: data from Lokale Statistieken.

4.2 Migration

4.2.1 In-migration

During the period 1997-2007, the Oostende SA has experienced a gradual increase in in-migration. Oostende is the most popular destination, followed by Middelkerke, then Bredene. All three are located at the coast. The core receives around three-fifth of the total in-migrants – slightly less than its share of total population, suggesting that migration is also contributing to the overall pattern of modest relative population decentralization.

Table 3.18. *In-migration in Oostende SA*

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Gistel	630	630	508	491	539	482	540	458	469	551	630
Middelkerke	1144	1133	1111	1036	1182	1239	1273	1254	1270	1304	1380
Bredene	978	1070	1029	994	1077	1020	1063	1123	1063	1120	1133
Oostende	3113	3314	3364	3459	3663	3832	3704	3817	3991	4010	3773
Oudenburg	394	400	407	387	365	387	459	427	422	443	426
Core	4485	4784	4800	4840	5105	5239	5226	5367	5476	5573	5332
Ring	1774	1763	1619	1527	1721	1721	1813	1712	1739	1855	2010

4.2.2 Out-migration

Most of the people leaving the area were from Oostende Municipality, Middelkerke and Bredene. There were also far more people leaving the core than the ring. In the Oostende Municipality, the out-flux of population declined during the period 1999-2002 then picked up again in the period after 2002. Out-migration in the core accounts for around 76.5% of the total out-migration from the SA. The proportion remained quite stable during the period 1997-2007.

Table 3.19. *Out-migration in Oostende SA*

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Gistel	441	472	485	449	493	522	514	475	491	522	449
Middelkerke	908	1068	937	889	888	906	931	983	1054	995	1046
Bredene	800	850	836	771	902	904	873	942	951	935	933
Oostende	3308	3314	3019	3039	3093	2976	3175	3200	3342	3533	3511
Oudenburg	369	389	363	400	373	413	409	373	397	430	438
Core	4477	4553	4218	4210	4368	4293	4457	4515	4690	4898	4882
Ring	1349	1540	1422	1338	1381	1428	1445	1458	1545	1517	1495

4.2.3 Internal migration

Internal migration reflects the movement of population amongst Belgian communes. In the Oostende SA, Oostende Municipality experienced positive internal migration between 1998 and 2006, with a peak in 2002. In 2007, Oostende Municipality had a negative figure, indicating that people moving out of the area outnumbered the number moving inwards. In general, more people moved into the ring than the core, even though the latter accounted for some two thirds of the total population of the metropolitan area. In the core, there is a declining trend in internal migration, with less and less people moving in – although the overall net internal migration continues to be positive.

Table 3.20. *Internal migration in Oostende SA*

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Gistel	181	153	28	45	38	-42	22	-16	-43	30	147
Middelkerke	226	89	173	154	302	329	311	226	250	244	330
Bredene	201	249	199	228	158	114	160	146	118	168	209
Oostende	-136	5	280	478	515	649	367	384	237	160	-57
Oudenburg	21	16	53	-4	-12	-24	30	52	12	16	-13
Core	86	270	532	702	661	739	557	582	367	344	139
Ring	407	242	201	199	340	287	333	210	207	274	477

4.2.4 External migration

External migration reflects international migration into and out of Belgium. Oostende Municipality is the main destination for international migrants in the metropolitan area, with positive international migration figures during the last 5 years. Most (more than 90 % in 2007) of the international migrants moved to the core.

Table 3.21. *External migration in Oostende SA*

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Gistel	8	5	-5	-3	8	2	4	-1	21	-1	34
Bredene	-23	-29	-6	-5	17	2	30	35	-6	17	-9
Middelkerke	10	-24	1	-7	-8	4	31	45	-34	65	4
Oostende	-59	-5	65	-58	55	207	162	233	412	317	319
Oudenburg	4	-5	-9	-9	4	-2	20	2	13	-3	1
Core	-45	-34	57	-74	51	209	213	280	391	379	324
Ring	-15	-24	-11	-8	25	4	34	34	15	16	25

4.2.5 Temporary residents

Oostende SA has two colleges, the Hogeschool West-Vlaanderen - Department Vesalius (HISS) and the Katholieke Hogeschool Brugge–Oostende (KHBO) Oostende campus. The KHBO Oostende has approximately 120 personnel and around 1100 students.

The coastal communes of the Oostende SA are a popular destination for second home owners, with Middelkerke being first ranked with more than 14,000 units, followed by Oostende with around 6,600 units. Bredene also has around 1000 second homes (Gunst *et al.*, 2008). The number of second homes in Oostende has increased from 5,220 units in 1989 to 6,600 in 1997 (Oostende Gemeentelijk) and has since been relatively stable.

4.3 Mobility

4.3.1 Road connections

The A10 motorway connects Oostende to Ghent, and then to Brussels via the E40. The A10 starts at the centre of the city providing very immediate access. Via the A17, the city is connected to Kortrijk, and from there to France. The Koninklijke Route, together with the Nieuwpoort and Torhout roads, are considered to be infrastructural keys for regional and inter-communal mobility. Oostende has accessibility problems mainly during the rush-hours in the morning and afternoon, and also during the tourism season. The most problematic areas are:

- The Torhout road (N33)
- The Coastal route (N34)
- The Nieuwpoort road (N318)
- The city centre

Table 3.22. *Road use intensity (per km)*

	2000			2005		
	<i>Highway</i>	<i>Communal roads</i>	<i>Provincial roads</i>	<i>Highway</i>	<i>Communal roads</i>	<i>Provincial roads</i>
Gistel	12,030,990	158,470	2,514,500,114	13,953,950	260,617	2,655,707,047
Middelkerke	10,714,898	213,547	1,983,237,397	12,628,776	283,074	1,872,437,495
Ring	11,372,944	186,009	2,248,868,756	13,291,363	271,846	2,264,072,271
Bredene	-	224,586	3,024,922,873	-	361,624	3,061,386,506
Oostende	9,201,173	417,330	3,417,624,505	10,180,670	462,273	3,657,562,108
Oudenburg	10,825,804	128,685	1,954,603,689	11,917,354	196,711	1,967,336,653
Core	10,013,489	256,867	2,799,050,356	11,049,012	340,203	2,895,428,422

Table 3.22 shows that communal and provincial roads are used more intensively in Oostende Municipality than in other communes. The highway connecting Brussels to Oostende (A10/E40) has seen increased intensity of around 1%/year during the period 2001 – 2008.

4.3.2 Rail connections

Oostende can also be reached via train and coastal tram networks. The station is located with good access to the town, beach and dyke. The train station serves many day trips to the Oostende seaside during the summer days. Currently, there is no international train connecting Oostende to European destinations. However, there are three connecting trains every hour to Eupen (via Brussels and Liege), Kortrijk and Antwerpt. All connections go through Brugge and Ghent. The journey to Brussels takes about 1 hour. During the summer, extra train services are provided to connect Oostende to Brussels, via Brugge.

4.3.3 Air travel

The international airport at Oostende is a small airport, used mostly as a hub for charters to destinations in Europe. Oostende Airport is ranked among the 20 most important freight airports in Europe. The airport has a 3200 m runway and is accessible 24 hours a day. The airport is specialised in the transport of outsize cargo, perishables and live stock.

Table 3.23. *Cargo and passenger evolution at the Oostende Airport**

	2005	2006	2007	2008	2009
Passengers					
<i>Commercial transport</i>					
- Scheduled flights	3,165	1,307	2,316	2,303	893
- Business flights	968	1,012	990	1,041	1,401
- Chartered flights	101,213	123,545	156,010	169,555	161,313
- Freight / mixed flights	80	258	171	169	52
Total commercial transport	105,426	126,122	159,487	173,068	163,659
<i>Non-commercial transport</i>					
- Training flights	6,417	6,514	8,117	13,904	16,350
- Touring flights	7,571	7,951	8,299	8,209	10,020
- Local flights	4,992	3,916	3,437	2,238	2,155
- Miscellaneous	1,738	1,852	723	2,539	592
Total non-commercial transport	20,718	20,233	20,576	26,890	29,117
Total passengers	126,144	146,355	180,063	199,958	192,776
Freight in ton	108,260	98,525	108,953	82,920	74,148
Number of movements	25,132	26,850	27,632	33,298	37,356

* Source: West-Vlaanderen (2009; 2010).

4.3.4 Waterways

Oostende has a seaport with a number of relatively short distance sea connections to destinations in Europe, as well as deep-sea transport links to other parts of the world. During the last 10 years, the port of Oostende has evolved from being a passenger port to an important economic hub. The number of tourist vehicles and passengers has dropped significantly while the amount of goods transported through the port has increased. Vehicle transport now focuses on RORO-truck transport. The port of Oostende is not of major importance for container traffic (see Table 3.24). Currently, Oostende remains the Ferry Port connecting to Ramsgate (UK) with 4 scheduled ferries a day.

Table 3.24. *Cargo and passengers evolution at the Port of Oostende**

Categories	1998	2003	2004	2005	2006	2007	2008	2009
Goods (in ton)								
- General cargo (x1000)	1,364.5	1,539.7	1,539.2	1,478.4	1,552.0	1,509.7	1,723.0	1,421.6
- Roro	2,364.6	5,607.0	5,925.1	6,145.8	6,207.5	6,431.1	6,726.6	3,926.9
- Containers		72.2	78.9	44.3	24.1	14.0	0	
Total tonnage	3,937.3	7,218.9	7,543.2	7,668.3	7,783.7	7,954.7	8,449.6	5,348.5
Vehicles transport (x1000 units)								
- Tourist vehicles	208.2		3.4	12.8	28.7	28.7	27.7	21.9
- Roro - Trucks	102.6	284.5	301.0	301.5	297.1	301.3	283.1	158.8
- New vehicles					22.8	11.3	4.8	
Total vehicles	310.9	284.5	304.3	314.3	348.7	341.3	315.5	180.6
Total containers (TEU) (a)		13.3	15.4	8.9	4.6	3.3	0	
Total passengers (million people)	1.15	0.15	0.16	0.21	0.23	0.25	0.23	0.18
(a) TEU=Twenty Foot Equivalent Unit.								

* Source: GOM West-Vlaanderen (2001); West-Vlaanderen (2010).

Oostende is also at the end of an important canal, Oostende-Bruges-Ghent, which provides inland waterway connection to the European waterways network. In the port of Oostende, several industrial sites have been developed along the quays that provide industries with direct access to the inland waterway connections. Future development plan also includes modernizing the canal and the docks to accommodate bigger inland waterway barges.

4.3.5 Public transport

In the city, the public transport system is managed by De Lijn, who provide bus and tram services. There are 6 bus lines within the city and 5 lines connecting the city to neighbouring towns.

For longer distances, 10 tramlines connect Oostende with Koksijde and Veurne to the south and Knokke to the north. The tramlines also connect Oostende to Brugge. The main tram station is near the train station in Oostende. The tram runs every twenty minutes during the summer holidays and even every ten minutes between De Panne and Knokke.

Oostende is also served by the Coastal Tram, which is undoubtedly the fastest and easiest means of transport along the Belgian coast, particularly given congestion on the coastal roads in the summer. The Coastal Tram was built in 1885, initially to connect Oostende and Middelkerke. Nowadays, the Coastal Tram covers the entire Belgian coastline from De Panne (close to the French border) to Knokke-Heist (close to the border with the Netherlands). In summer time, a tram passes every 10 minutes. From September until the beginning of November, during the Christmas and Spring holidays, and from Easter until the end of June, the tram frequency is every 15 minutes. During the rest of the year, the tram passes every 20 minutes. It is estimated that, in 2009, Coastal Tram transported 12.5 million passengers, indicating the intensity of use of the coastal strip and the role of collective transport in this (De Lijn, 2010).

4.4 Temporary mobility

4.4.1 Home-Work Travel

Home-work travel is one of the key elements in defining Functional Urban Regions. According to the survey in 2008 by the FOD Mobiliteit en Vervoer (as shown in

Table 3.25), Oostende Municipality attracts workers from all the surrounding communes. Together with Bredene and Oudenburg, it constitutes a core zone, which provides approximately 90% of the total number of 36,000 jobs in the Oostende SA in 2007 (Lokale Statistieken). Half of the workers living in Oostende Municipality work in the municipality. People from the Oostende SA also travel to work in the Brugge SA.

Table 3.25. *Home-work travel survey results, Oostende SA**

FROM\TO	Gistel	Middelkerke	Bredene	Oostende	Oudenburg
Gistel	17.90%	2.20%	1.00%	30.40%	3.30%
Middelkerke		31.20%		19.90%	0.80%
Bredene		1.00%	15.90%	37.40%	1.20%
Oostende	1.20%	1.90%	1.30%	56.70%	1.00%
Oudenburg	3.50%	1.60%	2.80%	29.00%	15.40%

Table 3.26 shows the total movements for working purposes for the Oostende SA, broken-down between the core and the ring areas. Home-work travel in the core accounts for nearly three-fourth of the total number of travel to work journeys. There are very few core-ring movements in Oostende SA. In comparison to the Brugge SA, home-work movement in this region across the core-ring boundary is much less. Travel to work from the ring to the core is approximately three times greater than from core to ring which – bearing in mind that two thirds of the population live in the core – emphasizes the continuing centralization of jobs relative to population.

* Source: FOD Mobiliteit en Vervoer (2008).

Table 3.26. *Any-working-day home-work movement in Oostende SA*

FROM\TO	Ring	Core
Ring	6,522	6,551
Core	2,188	42,647

Private vehicles still account for a very large proportion of travel by all transport modes, with this being the mode used by more than 60% of journeys to work originating in all the communes except Oostende Municipality (Table 3.27). Oostende Municipality has a lower proportion of workers using cars, mainly because most of the people working in Oostende also live in Oostende (

Table 3.25). For the same reason, the share of public transport (train, tram, bus) in Oostende Municipality is also the highest in the region, at 17% of the total share. The use of bikes is also more popular in Oostende than in other communes (at nearly 24%), largely due to the relatively short distance to work and the better road conditions (with good biking facilities such as separate lanes and signals).

Table 3.27. *Share of transport modes in home-work travel**

Commune	Car	Car sharing	Train	Bus/Tram/Metro	Private bus	Bike	Motorbike	Walking
Gistel	69.69	4.35	7.79	1.66	0.97	9.57	3.08	2.90
Middelkerke	60.43	3.61	7.85	2.70	0.85	15.10	3.49	5.97
RING	65.06	3.98	7.82	2.18	0.91	12.34	3.29	4.44
Bredene	61.37	3.13	10.03	5.20	0.20	15.36	3.36	1.36
Oostende	46.81	2.85	10.31	7.03	0.37	23.76	3.97	4.90
Oudenburg	65.95	3.17	9.00	1.33	0.85	17.32	1.35	1.02
CORE	58.04	3.05	9.78	4.52	0.47	18.81	2.89	2.43

* Source: FOD Mobiliteit and Vervoer (2008).

4.4.2 Tourism

Oostende SA is one of the most popular tourist destinations in Belgium. The total number of visitors to the region has been relatively stable during the last decade. The core area has seen a decreasing trend in the number of foreign visitors while the number of Belgian visitors has increased, resulting in a small increase in the total number of visitors. Meanwhile, the ring has experienced a slight decrease in the number of visitors.

The core attracts most of the visitors (around 80%), especially foreign visitors. While the core is popular with foreigners, Belgian tourists tend to go to the ring area. Amongst the communes in the region, Oostende Municipality single-handedly accounts for around 88% of the visitors to the core areas and 70% of the visitors to the whole region.

Table 3.28 shows that Oostende Municipality is the most popular destination for overnight stays. It accounts for nearly 60% of the total number of overnight stays in the SA and more than 80% of the total number of overnight stays in the core. This is higher than its share of total population in both cases. In 2001, around 60% of Belgian overnight-stays were spent in the core. By 2007, this figure was around 70%. Amongst foreigners, most of the overnight stays were spent in the core (around 80%).

Table 3.28. *Total number of overnight-stays in the Oostende SA**

		2001	2002	2003	2004	2005	2006	2007
Gistel	Total Belgian visitors				2,543	3,933	2,543	
	Total foreign visitors				1,020	1,147	2,198	
	Total visitors				3,563	5,080	4,741	
Middelkerke	Total Belgian visitors	516,716	465,374	465,374	446,721	421,683	446,143	385,920
	Total foreign visitors	162,000	161,396	161,396	161,333	138,081	132,486	101,948
	Total visitors	678,716	626,770	626,770	608,054	559,764	578,629	487,868

* Source: Lokale Statistieke (2010).

Bredene	Total Belgian visitors	132,158	160,199	160,199	139,610	139,313	153,473	166,724
	Total foreign visitors	83,868	82,220	82,220	75,607	65,398	69,657	80,039
	Total visitors	216,026	242,419	242,419	215,217	204,711	223,130	246,763
Oostende	Total Belgian visitors	646,146	676,518	676,518	648,890	698,168	691,190	681,332
	Total foreign visitors	461,060	459,204	459,204	421,245	414,139	373,989	361,816
	Total visitors	1,107,206	1,135,722	1,135,722	1,070,135	1,112,307	1,065,179	1,043,148
Oudenburg	Total Belgian visitors	9,185	7,526	7,526	6,544	8,005		8,167
	Total foreign visitors	6,195	6,053	6,053	3,474	4,555		5,080
	Total visitors	15,380	13,579	13,579	10,018	12,560		13,247
CORE	Total Belgian visitors	787,489	844,243	844,243	795,044	845,486	844,663	856,223
	Total foreign visitors	551,123	547,477	547,477	500,326	484,092	443,646	446,935
	Total visitors	1,338,612	1,391,720	1,391,720	1,295,370	1,329,578	1,288,309	1,303,158
RING	Total Belgian visitors	516,716	465,374	465,374	449,264	425,616	2,543	385,920
	Total foreign visitors	162,000	161,396	161,396	162,353	139,228	2,198	101,948
	Total visitors	678,716	626,770	626,770	611,617	564,844	4,741	487,868

Overall, the number of overnight stays in the ring has decreased during the period 2001-2007 while the figure for the core remain stable – indicating a tendency to greater centralization of tourism flows.

By 2002, Oostende had 45,678 beds, accounting for 9% of the total beds in the coastal area of Belgium. Three fourths of these are from individual rental of vacation premises and second homes. The rest come from hotels and campsites. Although the number of tourists has increased year on year, the number of hotel beds has decreased year on year. This has

important implications in terms of economic impacts, and patterns of visits – although data is lacking for both these aspects.

*Table 3.1. Evolution of number of hotels in Oostende Municipality and the Coast 1997 – 2002**

Year	Oostende		The Coast	
	Total establishments	Total rooms	Total establishments	Total rooms
1997	70	2,360	418	8,972
2000	68	2,388	387	8,443
2002	65	2,387	367	8,062
% difference 1997-2002	-7,1	1,1	-12,2	-10,1

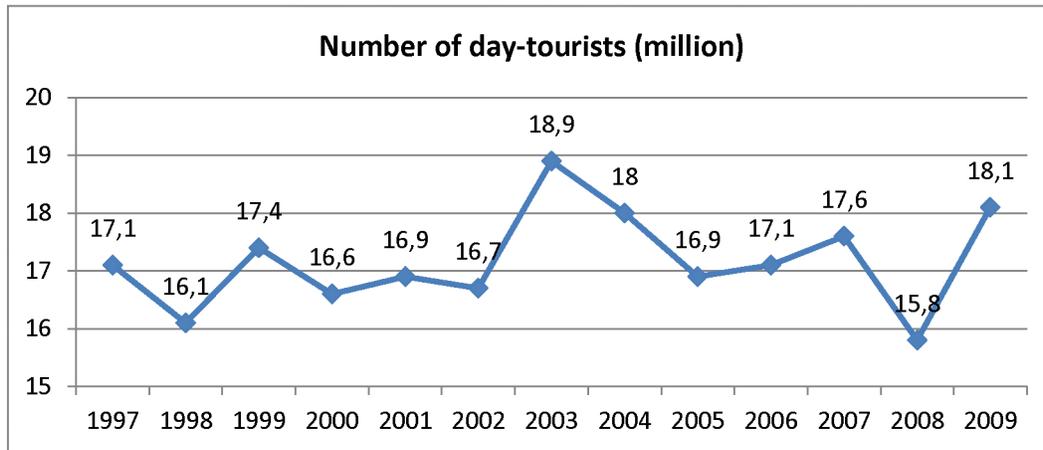
Oostende is also a popular destination for day tourism to the coast. During the summer, extended train services are operated with larger train capacities. In this season, there are 6 more direct trains from Brussels to Oostende in the morning during the weekends and three more during the weekdays. Returning from Oostende to Brussels, there are 5 extra direct trains in the late afternoon during the weekends and three extra trains during the weekdays.

According to a survey in 2007, Oostende is the most popular destination for day-tourism amongst Belgians, being a chosen destination of 24% of Belgian day-tourists (Vanden Brouck 2008) both in the summer and in the winter. Middelkerke and Bredene in the Oostende SA are also amongst the most popular sites. Middelkerke attracts 5% of day-tourists during summer and 6% of day-tourists during the winter. Bredene attracts around 5% of day-tourists during the summer but around 1% during the winter. In total, Oostende SA accounts for 35% of total day-tourists to the Belgian coast during summer and approximately 30% of the total to the Belgian coast during the winter. These represent significant flows of people into the coastal regions.

It is estimated that around a third of the Flemish population goes at least once to the coast during the summer. This number in wintertime is one fifth. The coast is a less popular area for the population of Brussels and Wallonia, with 10.5% and 15.9% respectively in summer and 7.2% and 8.9% respectively in winter (Vanden Brouck 2008). It is estimated that around 18,1 million day-tourists visited the coast in 2009. The peak estimate was in 2003 with 18,9 million visitors (Figure 3.10) (Vandaele and Callens 2010).

* Source: Toerisme Vlanderen (2005).

Figure 3.10. Evolution of day-tourists 1997-2009*



On the busiest day at the coast, there were around 250,000 day-visitors and around 350,000 visitors that stayed overnight (Vandaele and Callens, 2010). Around one third of the total day-tourists visit the coast during the summer (July-August). The rest are spread throughout the year. Most of the day-tourists come to the coast in private cars. Only 12% of the visitors come with the trains (Vandaele and Callens, 2010). They generate considerable congestion on particular routes to and within the coastal region, especially in summer.

* Source: Vandaele and Callens (2010).

5. Conclusions

The two Belgian case studies (Brugge SA and Oostende SA) have many similar features. They have both passed their fast growth period, which was few decades ago. During the 1990s and the first decade of the 21st century, both SAs have general stability in term of growth, with some minor dips corresponding to economic recessions.

The two study areas have similar features in term of development history and current situation. They both possess similar transport network and mobility patterns with similar industrialization processes, with the two ports being at the core of most of the industrial activities. Both are popular tourist destinations and cultural hubs of the region. Both study areas have a larger core than ring.

The most notable difference is that Brugge is much larger in size and population with the central core extending much further inland than Oostende. This creates further differences in term of the tourism industry: Oostende is more dependent on beach tourism while Brugge is more a cultural destination.

The two study areas have experienced their most rapid urbanization processes in much earlier time periods. Trends during the last ten to fifteen years show a relatively stable picture. Land-use changes occur relatively slowly and the industrial structure is relatively established.

In term of human mobility, both study areas have a balanced migration rate. Internal migration in both areas have similar features, with the rings increasingly becoming the main destination while the cores are less and less popular. Demographic aging is seen in both areas, both due to the natural aging process and the net migration.

Home-work travel patterns in both area are similar, with Brugge Municipality and Oostende Municipality, the two core centres, creating most of the jobs and attracting working people from the surrounding communes.

Human mobility for tourism purposes is dominated by the flux of tourists coming to the two areas. Day tourism plays a very important role in defining mobility in the region.

In terms of urbanisation, extensification is slow and mostly happening in the ring. On the contrary, residential and industrial areas in the core have decreased. Infilling (filling-up open space in already built-up areas) is a process that can be observed in both the ring and the core, although at a slow pace. There is a shift in land-use in the ring where the agricultural area is being reduced, giving space for residential and industrial areas, and also increasingly to nature areas.

In term of mobility, migration is more dynamic in the core than in the ring, especially in Brugge and Oostende municipalities. These two municipalities are the destinations of foreign migrants as well. However, in general the migration rate is not high, with coastal communes (especially Blankenberge and Knokke-Heist in Brugge SA) having the highest in-migration rates.

Seasonal mobility is noteworthy as the two SAs are famous tourism destinations in Belgium. During the summer months, day-tourists rush to the seaside and beaches.

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Annex 1. Categorisation of land-uses in Belgium

Categories	Description
Agriculture	Arable land, not otherwise specified (farmland nowhere else mentioned as the country's arable agricultural land including proposals for vegetables, etc.), grassland, gardens and parks, orchards (including meadows and pastures).
Natural and Semi-Natural Habitat	Forests, un-used land (swamps, bogs, meadows, rocks, dunes, dikes, slag heaps, etc.).
Open Space	Recreation spaces (sports arenas, race tracks, playgrounds, campsites); inventoried water (ponds, lakes, ponds, ditches, fish farms, canals, reservoirs); inventoried roads; non-built others (building land, car parks, airports, military sites, cemeteries and promenades); other non-standard and non-inventoried areas.
Residential	Apartments, buildings, houses and farms (barns, garages, porches and toilets).
Industrial	Outbuildings including greenhouses; craft and industrial buildings (laundries, dairies, bakeries, pork butchers, abattoirs, beverages and tobacco factories, textile mills, furniture and toy factories, paper mills, cement factories, saw mills, coke and chemical plants, glass factories, gas plants, power stations, ...); storage (sheds and warehouses); utility buildings (phone booths, airports, water towers, water treatment and waste treatment plants); other built-up areas.
Offices	Office (office buildings, banks, stock exchanges, offices); buildings for social care and health care (orphanages, nurseries, nursing homes, hospital buildings and buildings used for social welfare); buildings for education, research and culture (schools, universities, museums, libraries); buildings for worship (churches, chapels, monasteries, synagogues, temples, mosques); buildings for recreation and sports (banquet halls, youth clubs, theatres, cultural centres, cinemas, casinos).
Commercial	Buildings with commercial purposes (restaurants, supermarkets, gas stations, exhibition halls, parking garages, kiosks).
Government	Public buildings (town halls, royal palaces, courthouses and prisons, military and administrative buildings, gendarmerie barracks).

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ABSTRACT: In this chapter, mobility and urbanization relationships in the Brugge and Oostende Study Areas are examined through observing their development over the last decade. A specific spatial framework is defined using human mobility and urbanisation criteria. Similarities observed are the slow pace of 'extensification' and increase of nature areas in the rings, and reduction of residential and industrial areas in the cores. Port activities are on the rise, while migration is more dynamic in the core with noteworthy seasonal tourism mobility. Differences include the further inland extension of core in Brugge, beach tourism dominating Oostende while Brugge is more a cultural destination. The flux of tourists, in particular 'day tourism', plays a crucial role in structuring mobility-urbanisation relationships in the region.

KEYWORDS: mobility, Belgium, Brugge, Oostende, metropolitan regions, ports, transport, tourism.

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